

Displays 101: What to Know When Buying Business TVs



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Our experience in digital signage software has taught us the hard way which specs really matter and what makes one screen a better value for your business than another, even if the prices change.

Ultimately, your company needs screens that are bright, vivid, and easily readable from a distance. You need those screens to work reliably throughout your business hours. And you need to know that your displays will be future-proofed enough to not need to be replaced within its five-year depreciation.

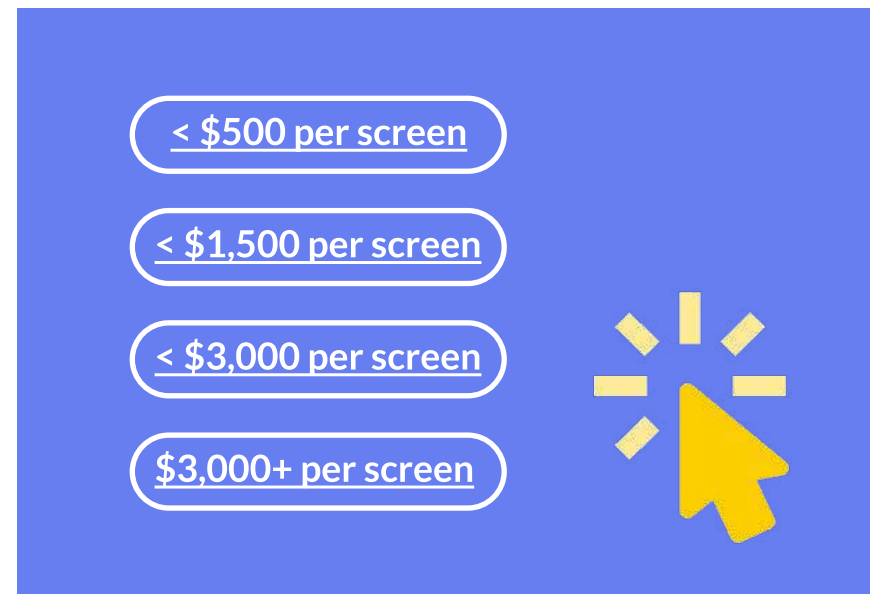
It's difficult to tell you which exact TV model is best for your business. Manufacturers release new displays regularly, with some models or features available only in specific regions. Retailers may only have a small selection of screens available, and prices change based on promotions.

The best screen for an office in London, today, might not be the best option for a store in Lisbon tomorrow.

You can purchase, in 2024, a 22" display with a 1680x1050 pixel resolution, for \$125. Or a 27" HD display—with only 1280x720 pixels—for \$500.

We'd recommend you don't buy either of those. They are laughably bad. But they persist on the market, hiding behind manufacturer acronyms and jargon to confuse the average consumer.

For tailored suggestions specific to your needs, start by letting us know your budget per screen and then answer a few questions from our Recommended Hardware quizzes:



The display cheatsheet

You don't have to make every call, as the industry already settled on the basics for you. For an office or retail TV, you should buy a TV with a...

IPS LCD panel, direct lit or with full-array LED backlight

4K, 16:9 aspect ratio, 55 or 65" display

VESA mount support

60hz refresh rate with HDMI 2.0 ports

The thinnest, equally-sized bezels possible



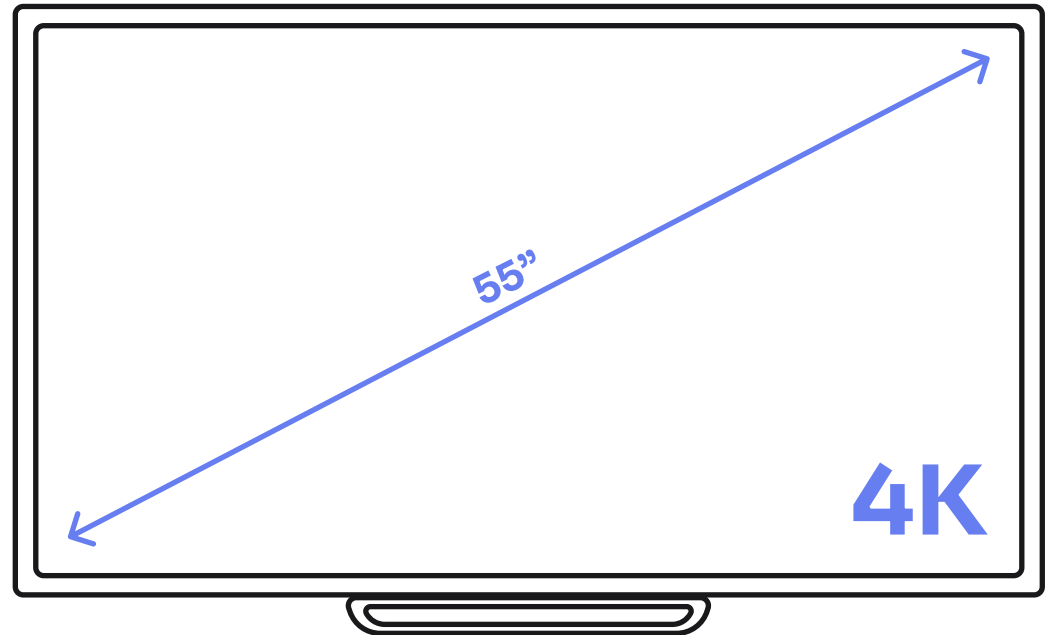
That narrows your choices down to around a quarter of the displays available in an average big-box electronics retailer.

The display specs that matter most for digital signage

4K is enough resolution for most needs — today, and for the estimated lifespan of your digital signage TVs.

At 4K resolution, a 55" display will appear as clear as a modern smartphone screen—what Apple calls “Retina Display” — if you’re standing around 3 feet or 1 meter from the screen. A 65" display will be equally clear 4.5 feet or 1.5 meters away.

Signage is best viewed from a distance and an 8K resolution screen wouldn’t look better than a 4k to the average viewer. Downgrading to HD-quality, on the other hand, would require people to view your 55" screen from around 10 feet or 3 meters away for similar clarity, making 4K worth the investment.



Refresh rates

Our Recommendation: **60hz refresh rate**

Same with 60hz refresh rate; the default refresh rate on most TVs is plenty for everything other than gaming. It's especially enough for nearly-static content like the messaging on digital signage. If a higher refresh rate doesn't cost extra, though, it is technically better and there's no downside to your display supporting it.

Wall mounts

Our Recommendation: **VESA Mount**

Most wall mounts support a variety of VESA mount patterns, so any that your display uses is fine – just make sure at least one is supported. Some professional displays, including Sony Bravia Professional displays, include wall mount hardware in the display to hang directly on standardized brackets – that's better if available.





HDMI ports

Our Recommendation: **HDMI 2.0 or newer**

HDMI 2.0 is good enough for signage as it supports 4K resolution as 60hz. Don't pay extra for HDMI 2.1 for signage, but if it's included in the display you want, it's a nice bit of future proofing as it supports 4k at 120hz or 8k at 60hz. Be sure to check port placement, though; side ports recessed enough to hide cables are the best for digital signage, though if they're not available you can work around them with angled cables.

Which brings us to the specs that do make a difference for signage: size, LCD panel type, backlighting, and bezels.

Screen size

Our Recommendation: **55" and 65" displays**

55" and 65" displays are the sweet spot for price and functionality. Larger displays will need to be viewed from a further distance to be equally clear as a smaller display with the same resolution, and they often cost far more than the additional size justifies (the same Samsung professional display costs around \$1,000 for a 55" screen, \$1,200 for a 65" screen, then jumps to \$2,100 for 75" and \$3,000 for 85").

The largest sizes are often pushing boundaries and thus have far more limited availability, as well. That could be yet another benefit towards buying a more standard size.

For many use cases, it's better to buy multiple 55" or 65" screens than a single larger display.

Other sizes—such as 58" TVs—are less common than their 5-inch-denominated competition, which means if one screen dies it'll be more difficult to find a drop-in replacement. Stick with numbers ending in a 5 (55", especially, as nearly 20% of all available TV models come in that size) and you'll have a better chance of finding a different model of TV that looks almost identical.

LCD vs OLED vs LED

Our Recommendation: **LED TV with direct lit or full-array LCD backlight**

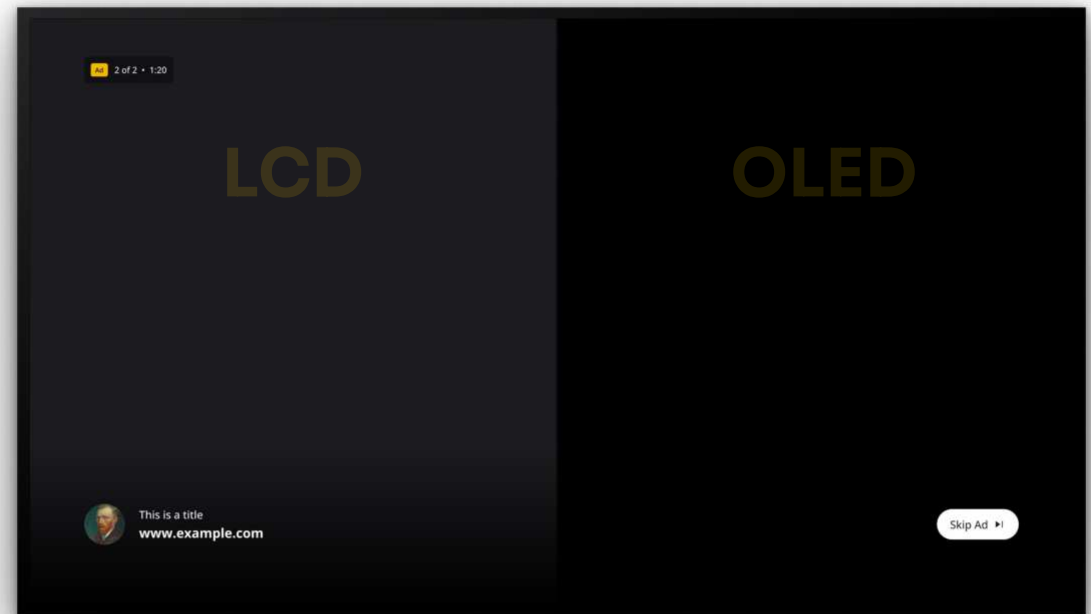
LCD—liquid crystal display—screens are the best option for digital signage. LED—light-emitting diode—TVs are a variant of LCD TVs, powered by the same core technology but with more LED lights brightening the display.

OLED—organic light-emitting diode—screens are beautiful, with pure blacks and the strongest contrast ratios on the market. Each pixel on the screen is self-illuminating, so blacks turn the pixel off entirely and bright, HDR scenes brighten the exact spots that would be brighter in the real world for a more lifelike image.

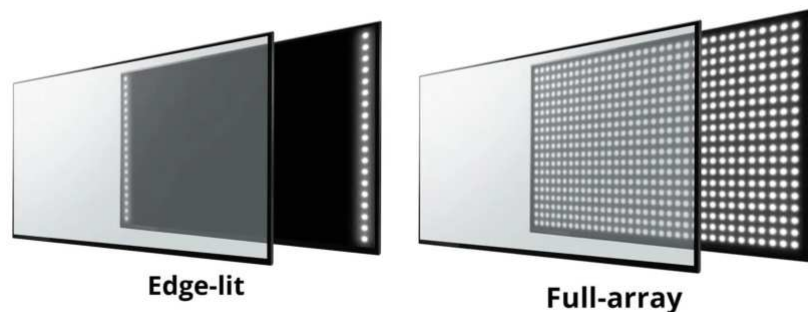
That same flexibility makes OLED screens more fragile, susceptible to burn-in when a static image remains on the screen for too long, as individual diodes slowly lose brightness the more they're used, leaving those areas looking dimmer than less-used sections of the screen.

OLED screens also have lower peak brightness than the best LCD and LED TVs, and are often far more expensive than consumer-focused LCD or LED TVs. MicroLED, a newer display technology, promises many of OLED's benefits without its downsides, but today are not widely commercially available.

eInk or electronic paper displays, similar to ones used in a Kindle eBook reader, are another display option that's increasingly popular for either very small price tag screens, or larger advertisement and directional signage used outdoors in direct sunlight. They're great for static content, as they only use energy when changing what's on the screen. And they're clearly readable in direct sunlight with their paper-like screens and lack of built-in lights. But eInk screens are also unreadable in the dark without additional lighting, typically are either black and white or include limited color support, and cost over \$1,500 for a 25" display.



LED panels are the final variant of screens used for signage. While related in name and technology to LED TVs, LED panels are far different from a TV. They're typically 50cm square LED panels that are linked together into a video wall for outdoor advertisements, full-wall video, concerts, and other large-scale signage. They require additional hardware, including separate power supplies, video encoders, and mounting. And they're typically only readable from around 12 or more feet away, at a far lower resolution than a 4K TV. If you want a full-wall video display, they're the best option—check our separate guide for [how to build a video wall](#). They are not, however, ideal for office signage.



For digital signage, readability is the most important thing—far more important than rich colors and contrast ratios, or full-wall coverage. LCD or LED TVs are usually better for office and retail digital signage. They're the longest-used technology in the flat display space, tested for long-term durability, and affordable enough today to cover your business with screens.

LCD and LED TVs are, essentially, the exact same technology: An LCD display lit by LED lights. The difference is in how many LCDs are used to light the display, and where they're positioned:

- Edge lit displays, seen in entry-level TVs typically marketed as LCD TVs, are TVs with LED lights around the edge of the display. Over time, they often lead to bright hotspots or dimmed zones as LEDs die or discolor the LCD panel with heat, something you can often notice on older signage TVs.
- Direct lit displays, seen in mid-range TVs and often marketed as LED TVs—despite continuing to use LCD panels for the actual picture—use multiple rows of LED backlights behind the LCD for more even lighting and better heat dissipation.
- Full-array displays, seen in high-end TVs including those marketed as QLED TVs when using mini-LEDs as the backlight—use hundreds or thousands of smaller LEDs to evenly backlight the image, turning on or off individual lights or zones as the picture brightness requires for some of the best contrast ratios short of an OLED display.

For signage, both direct lit and full-array LED screens should have equally high brightness levels and contrast ratios to be clearly readable at a distance. If budget is the primary consideration, a direct lit display may be worth the savings.

IPS vs TN vs VA panels

Our Recommendation: **IPS panel**

Then comes a final display type consideration: LCDs come in VA, TN, and IPS panels. You want the latter for digital signage. IPS—in-plane switching—panels have the widest viewing ratios at typically around 178°, so your screens are readable even if viewed at an angle. That also makes them more easily readable if hung vertically, in portrait mode.

TN panels are rarely used in TVs; VA panels are more common, and can offer better contrast ratios, but the viewing angle advantage of IPS panels makes IPS much better suited for signage.



Bezels and TV design for signage

Our Recommendation: **Smallest even bezels possible**

With the specs checked off, think about the design. Every display panel looks the same (when turned off, at any rate), and most TV bezels today are small enough and with logos that are inconspicuous enough to look professional when mounted horizontally on its own. Mount multiple displays side-by-side, or vertically, and suddenly even slight bezel variations come into sharp focus.

The ideal TV for digital signage will have consistent bezels around the screen, no branding or logo on the bezel, and as thin of bezels as possible.

That way, no matter how you mount your screens, they'll look consistent side-by-side (and if you need to replace a screen, you have a better chance of the new display blending in with your older, existing TVs).

Professional displays very often include their logo on the side so it's easy to hide; consumer TVs are more likely to include prominent branding. That alone often makes professional displays better for building a wall with multiple TVs than consumer displays.



The extra, nice-to-have display specs for digital signage

With those primary considerations covered, you'll have eliminated most of the options.

If display price is your primary consideration, go with the cheapest TV that covers everything above: a 4K, IPS panel, direct lit or full-array LED backlit, thin-but-consistent bezel display.

If your budget has a bit more headroom, consider the following features to narrow in on the best display for your needs.

Brightness

If your digital signage will directly face a window or have sunlight hitting it even part of the day, brightness will matter more. Look for displays with a higher maximum sustained nits — HDR's temporary brightness support won't be enough.

Standard consumer TVs tend to offer around 200 nits of brightness, rising to around 300-400 nits for HDR content. Typically, the more expensive the display, the higher brightness you should expect. High-end TVs today offer 900 nits of brightness, or more, while outdoor-rated TVs such as Samsung's The Terrace go up to 1,500 nits. The brighter your display, the easier it is to read in direct sunlight.

Brightness is one of the reasons to also consider stepping up to professional displays. It's easy enough to find a TV that fits the core recommended specs for digital signage at any electronics retailer—but if your company's budget has flexibility, professional displays built specifically for digital signage can be worth the upgrade. Brightness is one of the first areas where you'll notice a difference, with standard professional displays offering 500-850 nits of brightness, and outdoor-ready displays such as LG's High Brightness displays with up to 4,000 nits for window or outdoor signage.

Glare

The brighter the screen, the less you'll notice reflections and glare, as it's less likely the reflected light is brighter than your screen. But it's not a guarantee, and reflections will still be distracting with dark backgrounds.

Higher-end TVs and professional displays typically include anti-glare coatings, or are available with semi-gloss finish to reduce reflections. Matte finishes may be available on some outdoor-rated screens, but are less common on both consumer and professional TVs due to their degradation of image quality.

Some professional displays, including LG's outdoor-rated professional displays, include a quarter wave plate filter to make vertical displays visible while wearing polarized sunglasses—especially important for outdoor usage.

Port placement

Any HDMI port will work for digital signage displays, but the port placement can make it far easier or more difficult to set up, mount, and maintain signage. Ports that point directly towards the wall cannot be mounted flush against the wall with a standard cable, so you may need a [90° HDMI adaptor](#) or cable; ports along the side may leave your HDMI cables poking out from behind your display. The best ports are pointed towards the side of the display but recessed, leaving enough space to hide cables while still allowing easy access when needed.

Open Pluggable Specification (OPS) module support

With a professional display, ports may not matter much, as professional displays typically include open pluggable specification (OPS) module support, a standardized slot to insert a PC or media player into a TV body. Instead of mounting and connecting a media player to stream video and digital signage content to a TV, the OPS slot lets you purchase an OPS module with a complete PC, plug it into your TV, and operate it as though it was an all-in-one computer. You could then later upgrade your computing hardware, while using the same display and extending its usable lifespan for new software and updates far beyond that of built-in smart TV hardware.



Audio

While typically not a consideration for digital signage, most TVs do include speakers for audio playback. 50-watt, 2.1.2-channel speakers are common in many TVs today; higher end displays may include 70-watt, 4.2.2-channel speakers with simulated Dolby Atmos surround sound. If your signage displays only slides with text and images, you may never use your displays' speakers. If you stream live Zoom calls or loop videos, though, it could be worth choosing a display with better quality speakers to avoid needing additional hardware.

Continuous operation

Most TVs are designed for up to 8 hours of use per day, in a home environment and typically at non-peak brightness. That may be sufficient for office signage used during business hours—though some consumer-grade TV manufacturers may limit their warranty to 6 months for screens used professionally.

Professional displays, on the other hand, are designed and warranted for continuous operation in more demanding environments. Standard professional displays are designed and warrantied for 16/7 operation—sixteen hours a day, seven days a week. Premium professional displays are rated 24/7 for continuous operation. They also typically include more heat dissipation hardware to protect displays even when running at peak brightness for hours on end.

Operational display times

Consumer-grade	8 hours
Standard professional	16/7
Premium professional	24/7



Button and remote lockdown

For a home TV, universal remotes can mean the difference between turning the volume down and searching for a missing remote. For digital signage, though, they can spell doom for your screens, when anyone can change a channel or turn off a display at will. Professional displays typically include options to lock down displays, disable remote controls, and even make already-hidden on-device buttons inoperative.

Durability

Consumer TVs are designed to be used in relatively mild operating environments, for indoor use in temperatures ranging from perhaps 50-104° F (10 to 40° C) with only household-levels of dust and humidity. They may overheat if operated at full brightness in direct sunlight.

Professional TVs are designed for more challenging environments, with heat dissipation hardware to keep display temperatures down at full brightness. Some include IPX5 dust protection for factory and other dusty workplace environments, or waterproofing with IP56 certification.

Advanced settings

Along with remote settings, professional displays also often include other business-focused settings, including default on-start and max volume, locking input to a specific HDMI port so other ports cannot be used, operation time scheduling to turn off displays after business hours and turn them on at opening time, and more.

Many also include options to transfer settings between displays with a USB flash drive—though that feature only works between the same brand of displays.

Consumer vs. professional displays for digital signage

That brings you to the final, core decision: Should you buy a standard TV built for consumer use from a standard big-box electronics retailer? Or is it worth the additional trouble and expense to buy a professional display—one you may need to order without being able to try out locally first?

When should you consider purchasing a **consumer TV** for digital signage?

When the upfront purchase price is the primary consideration, consumer-grade TVs from standard electronics retailers are the cheapest option. For well under \$1,000 in nearly every market, there are a wide range of consumer TVs with IPS direct-lit displays in the 55" to 65" range that can work well enough for an initial digital signage deployment. Only consider them, though, for indoor office usage during business hours — and expect a somewhat shorter lifespan, with a shorter manufacturer warranty when used professionally.

Your best option to buy a consumer TV for digital signage is to check your local retail and online shopping options. Watch for the core specs outlined above — and ideally try to buy an IPS direct-lit display with even bezels.



Prices and specific models are most likely to vary in consumer TVs, especially around major annual sales. Or, check [Samsung](#), [Sony](#), and [LG](#)'s consumer TV sites for their current offerings.

“

Consumer TV:

Direct-lit IPS 55"-65" display under \$1,000, from major retailers

When should you consider a **professional display** over a consumer TV?

If you've budgeted \$1,500 or more per display, it's worth considering professional displays over consumer TVs for your company signage. At that price point, consumer TVs will include features that improve entertainment, but that are less relevant to digital signage, like thinner bodies, better brightness, more accurate colors, improved built-in audio, advanced smart TV features, and OLED panels for higher contrast ratios.

It's better to invest the larger budget in screens that are designed for professional use when budgets permit. They should last longer since they're designed for continuous operation, will be easier to set up as digital signage with built-in mounting holes and OPS slots, and at mid and higher price points, will likely be easier for your team and customers to read from a distance.



Professional display:

16+ hour/day operation, IP5X dust proofing, OPS slot, 400-700+ nit brightness, from \$1,500+

While \$1,500 or higher price tags denote higher-end consumer TVs, for professional displays that's where the market starts. At the base level of the professional display market, expect similar features to consumer displays such as 16 to 18 hour-per-day operation and 400-700 nit brightness, plus professional-focused features including an OPS slot and IP5X dust proofing—along with our standard recommended display specs of 55" or larger displays with 4K resolution IPS LCD panels.

Many professional displays are still edge-lit, though, with direct lit displays reserved for high-end professional screens— one downside to entry-level professional displays over similarly priced consumer TVs.

For around double the price of entry-level professional displays (\$3,000-\$4,000), mid-tier professional displays are typically rated for 24/7 operation, with additional anti-haze and glare coatings and thinner bezels.

Double the price again (\$8,000+)—or go far higher, with top displays costing over \$20,000—for high-functioning professional displays designed for challenging environments, including outdoor and window-facing use. These displays may include IP56 waterproofing, 3,000 nits or higher brightness, temperature sensors and cooling fans, directly lit displays covered by tempered glass, with higher contrast ratios and longer warranties than entry-level professional displays offer.

Entry-level or mid-tier professional displays will typically be sufficient for most office use. If you're working in air-conditioned buildings without direct sunlight during standard business hours, those displays include the core features you're likely to need for signage. Mid-tier displays are worth considering for continuous operation in 24/7 businesses, or for brighter offices with more direct sunlight.

High-functioning professional displays are best for signage in specific use-cases. For indoor use in bright areas, look for screens marketed as window-facing, which offer higher brightness and better anti-glare functionality without the full expense of weatherproofing.

Or, for outdoor usage or in garages, loading docks, and other locations where your displays may be exposed to the elements, consider outdoor-rated displays. They're more expensive, but will hold up under the more demanding workloads.

The default specs change rapidly; only a few years ago, OPS slots and IP5X ratings were reserved for mid to high-tier professional displays, while now they're a common professional display differentiator. Check [Sony](#), [LG](#), and [Samsung](#)'s professional display sites for their current offerings—and filter by LCD displays for entry-level and mid-tier displays, or by outdoor and specialty display offerings for high-functioning professional displays.

	Entry-level professional	Mid-tier professional	High-end professional
Operation hours	16-18 p/day	24/7	24/7
Nit brightness	400-700	500-850	3000+
Built-in mounting holes and OPS slots	✓	✓	✓
Anti-haze and glare coatings	✗	✓	✓
IP5X dust proofing	✓	✓	✓
IP56 waterproofing	✗	✗	✓
Outdoor and window-facing use	✗	✗	✓
Price	\$1,500-\$3,000	\$3,000-\$4,000	\$8,000+

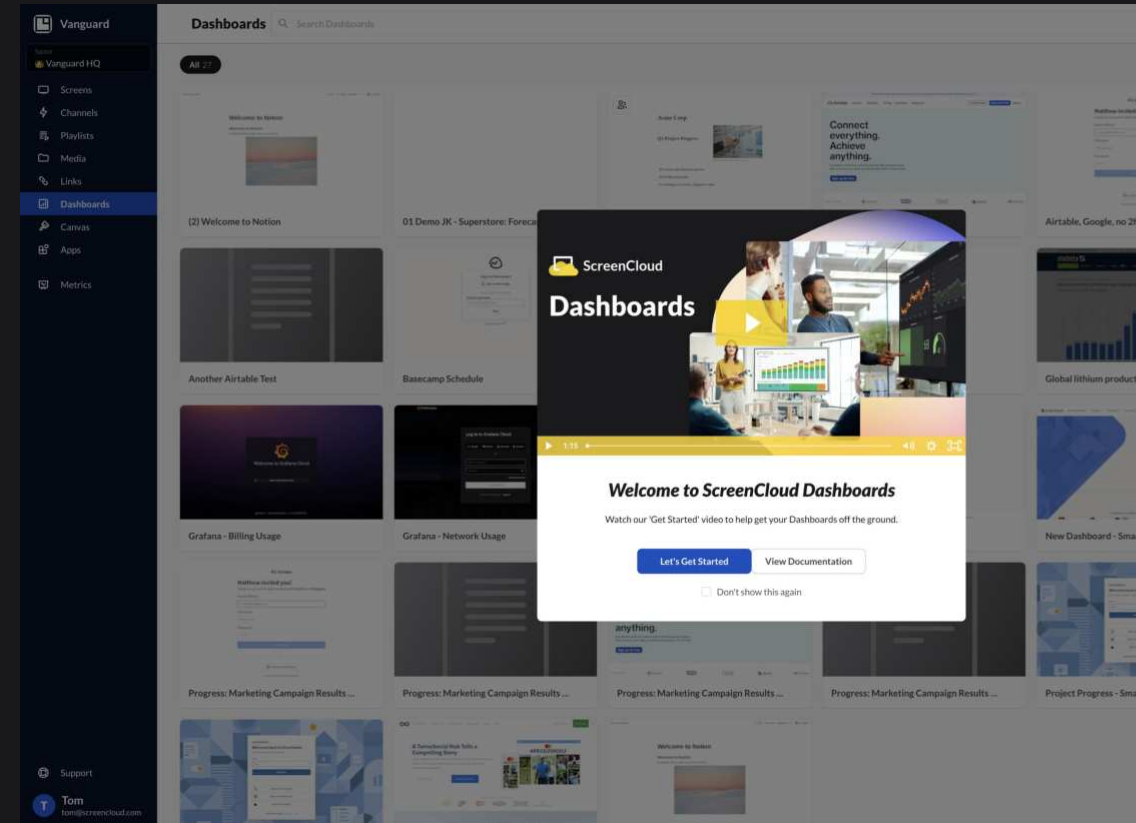
Turning displays into digital signage

Now that you've whittled down your choices to a handful of the best displays, it's time to put your new TVs to work.

Start with how to get content on your screens.

Most TVs today, consumer and professional displays alike, are Smart TVs powered by Alphabet's Google or Android TV, Samsung's Tizen OS, LG's webOS, and other entertainment-focused platforms. Alternately, consumer media players including Amazon's Fire TV sticks, Google Chromecast, and Apple TV devices, among others, can add similar features to any display.

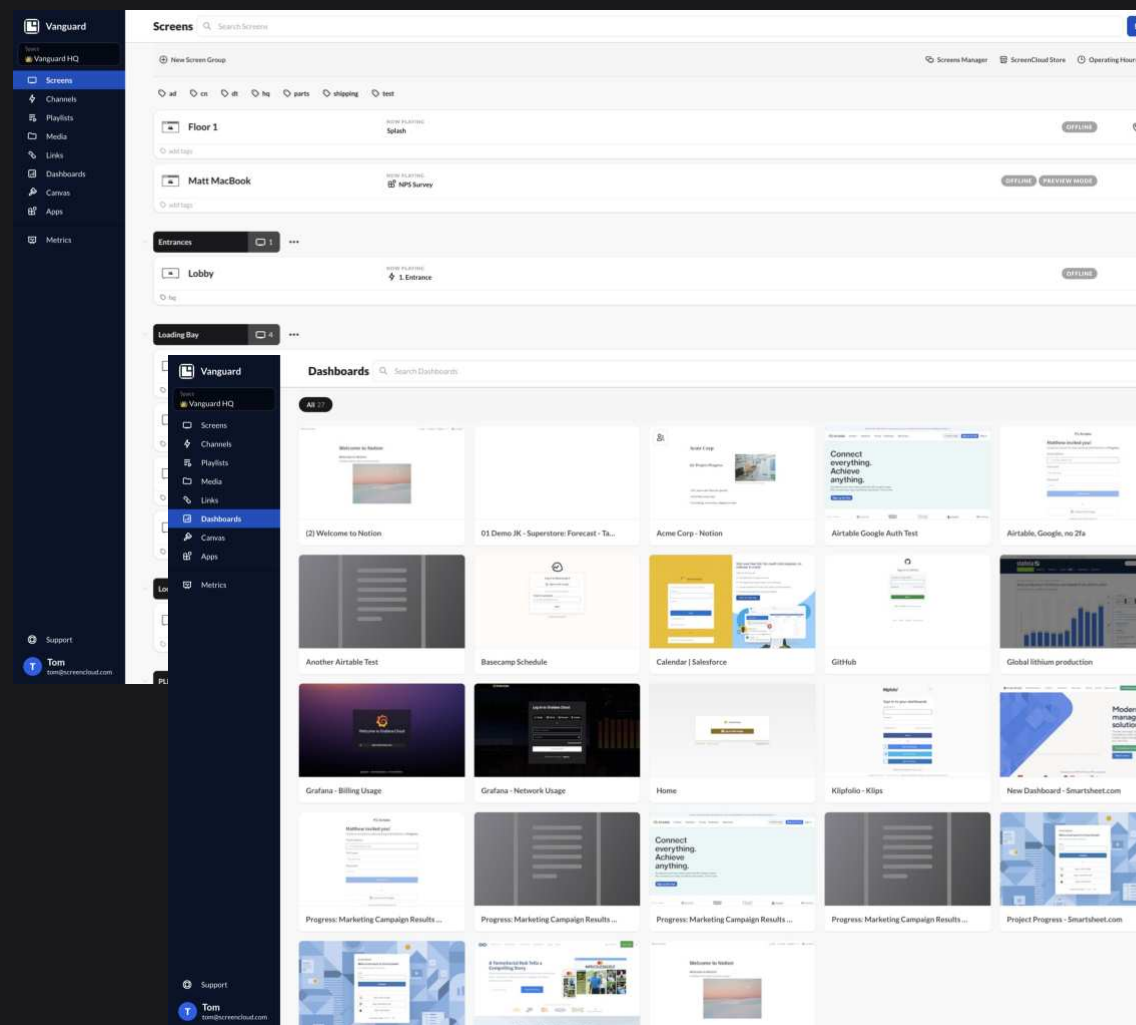
Each platform is designed around apps, much like a phone or tablet, and you can install digital signage player apps including ScreenCloud's player apps directly on a smart TV or consumer media player. The downside, though, is that they're designed for streaming Netflix and other consumer use-cases, often include ads for movies and other media, and include few of the professional settings needed for signage.



Alternatively, you can use professional media players like the Station P1 Pro with ScreenCloud OS, full computers like the Mac Mini that are small enough to be mounted behind a TV, or Open Pluggable Specification (OPS) computers built to be inserted directly into professional digital signage. Those will give more robust control over what shows on your screen, with options for remote management and display schedules along with a focus on solely the signage software you need.

Then, pair your media players with signage software such as ScreenCloud to manage content for screens, organize it into timed playlists and channels that show the most important info when it's most needed, and enable team access so stakeholders can add the content that will move the needle for their divisions.

You've got the TVs your company needs. Now, make the most of them with ScreenCloud's guide to digital signage to learn how to turn your displays into a Company TV that makes a measurable impact on your team's productivity.



Appendix: Every display term you need to know

▶ Pixel density and viewing distance

Pixel density is the number of pixels per area, typically pixels per square inch or PPI. An iPhone with what Apple calls a “retina display” has a 460 ppi, for example, and is difficult or impossible for the average person to see individual pixels.

TVs are viewed at a distance, and so need far fewer pixels per inch to be equally crisp. For a 4K display:

- 55” is retina from ~3 feet or 1 meter away
- 65” is retina from ~4.5 feet or 1.5 meters away
- 85” is retina from ~5.5 feet or 1.67 meters away

[Sony recommends](#) a minimum viewing distance of 1.5 times of the TV vertical screen size to comfortably watch TV and movies—or 4.5 feet away from a 55” TV. HD screens require double the distance—3 times the vertical screen size, or as much as 9 feet or 3 meters away from a 55” TV—for similar viewing quality.

If you stick with 4K displays at around 55-65” for digital signage, you’ll hit both retina display and TV viewing guidelines for your office TVs.

To calculate pixels per inch for other display sizes, [use this calculator](#) — or multiply your resolution to find total pixels, and divide that by the square inches of your display to get your display’s PPI, then [divide 3437 by the average distance in inches](#) that your screen will be viewed from to calculate the PPI needed for a display to appear as a retina display.

▶ Port placement

Resolution is the number of pixels in a display, typically written as the number of pixels in width by height of the display. The most common TV resolutions are:

- HD (or 1080p): 1280 by 720 pixels
- 4K (ultra HD or UHD): 3840 by 2160 pixels
- 8K (or UHD2): 7680 by 4320 pixels

Modern TVs often include upscaling, to make lower quality content appear to be 4K resolution.

▶ Readability and dwell time

Resolution is a key part of readability at close distances. Most digital signage is viewed from 7-10 feet or 2-3 meters away, though, so smaller text may not be readable at a distance, regardless of how clear it is displayed.

For best readability on digital signage and office TVs, follow the 3 x 5 rule: Use at most three lines of text, with at most five words per line. And [use as large of fonts as possible](#). A 72 point font appears around 1" tall on a 55-65" TV. A 20-30 point font is only readable from around 7 feet or 2 meters away, whereas a 100-point font can be seen from 26 feet or nearly 8 meters away.

Dwell time, then, is how long people will look at your screens. Signage often is glanced at in passing, giving an even greater importance to brevity and readability. Average dwell time ranges include:

- Short-term viewing (passer-by, shopper):
Up to 30 seconds
- Mid-term viewing (reception desk, staff member, coffee shop): 30 seconds - 2 minutes
- Long-term viewing (office, restaurant, waiting area): 2 - 30 minutes

▶ Refresh rate, frames per second and response rate

Refresh Rate is how often a display updates per second. A 60hz display refreshes the image 60 times per second. That's the most common in standard TVs today, though 120hz and higher refresh rates are increasingly common.

Frame Rate is how many images are sent to the TV to display. They relate to the video file or signal sent to the TV, not to the TV itself. Movies are typically shot at 24 frames per second. Higher frame rates are less important to digital signage, but are more important for video games and computer displays where scrolling and mouse speeds can appear more lifelike with a higher frame rate (paired, again, with a display that has a higher refresh rate). Some displays include motion smoothing to make lower frame rate content appear to play at a higher rate.

Response Rate is how quickly a display's pixels change from one color to another, typically 1ms to 5ms in modern TVs. This, again, matters more for high-frame-rate content than digital signage with slower updating content.

Input Lag is a final related spec: The delay between pressing a button on a remote, controller, or physical button on a display, and the resulting action taking place on-screen. A universal remote may seem to take longer to lower the volume, say, than a physical volume button on a TV—that's input lag. It's a factor in how smooth games and productivity applications appear, and so less relevant to signage.

LED, LCD and all of their friends

LCD, or liquid crystal display, is the flat panel display technology used by all TVs and displays other than OLED, mini-LED, and elnk screens.

LED, or light emitting diode, are today's default light source in everything from home and office light bulbs to the backlight in displays and TVs. Every LCD TV includes LED lights behind the LCD panel to make the image bright enough to be visible, as LCD panels emit no light on their own. LCD panels come in TN, VA, and IPS variants, each a different way of creating liquid crystals. TN are cheapest; VA have higher contrast ratios and viewing angles; IPS offer more accurate colors and a good mix of viewing ratios and price.

QLED, or quantum LED, uses either thousands of smaller LEDs (also called mini-LED) backlights in a full-array backlight, or quantum dots crystals as the backlight. Today, they are paired with an LCD panel, and offer more dynamic lighting. Future versions may replace LCDs, as QLEDs can emit colored light to handle the image and brightness together.

OLED, or organic light emitting diode, offers that today, with individual pixels that shine colored light and thus do not need a backlight. They're less bright than LED-backed LCD displays, but offer perfect contrast ratios as blacks are displayed by turning those pixels off entirely.

LED backlights come in:

- Edge lit, with LED lighting around the edge of the display
- Direct lit, with dozens of LEDs spaced throughout the display for more even lighting
- Full-array, with hundreds or thousands of LEDs for the best, most even backlighting

HDR

High Dynamic Range, or HDR, is the ability to show a wider range of brightness levels, along with richer colors and contrast, in an image or video. On LED and LCD TVs, HDR is typically achieved with local dimming and dynamic brightness control, where individual backlight LEDs are lit brighter under parts of an image that should appear brighter—such as the sun in a sunset video, or a reflection in a window—while darker areas may use less backlighting than normal. Dolby Vision is a proprietary HDR implementation that may be used to market TVs with advanced HDR support.

Brightness

Brightness is how much light a display emits, and is measured in Nits, or the light emitted by one candela (or standard candle) per square meter (cd/m^2). TVs range from around 200 nits to over 2,000 nits for outdoor-rated displays. HDR displays may momentarily show higher brightness, but typically cannot sustain that brightness over long periods of time