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LED Buying Guide *for Retailers*

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Purpose of this Guide

Whether you are an experienced hand when it comes to digital signage or a first-timer, LED displays deliver you a new set of benefits and potential pitfalls.

When you use them well, they can take your brand to the next level, which is why they are growing in popularity.

As experienced partners in digital signage, we created this guide to help Australian retailers leverage this next generation of digital display technology and successfully implement LED into their in store experience.

“The total LED marketplace is expected to grow at a compound rate of 21% per year through to 2026”

Futuresource Consulting
2022 Global LED
Display Market Report

“We can expect LED to surpass LCD within the decade”

Ted Romanowitz
Principal Analyst,
Futuresource Consulting

LED vs LCD: what's the difference?

- The key technical difference when we talk about commercial LEDs, compared with traditional LCD displays, is that they are 'Direct View' LEDs, which means that they are not covered by an LCD panel.
- Instead they are made as LED Modules consisting of LED pixels which come in various sizes and specs and can be easily configured together to create a larger digital display of any shape or size.
- Recent technological improvements in LED pixel density, color quality and durability have seen LED technology begin to surpass LCD for many use cases to the point where major LCD manufacturers have entered the LED space and have started to reduce production of LCD panels.



LED modules
Like this.

How do LED screens work?

- From a system design perspective, LED's work in much the same way as a standard digital signage model in that they receive a content feed from a media player which is connected to the internet and controlled remotely via a cloud based content management system (CMS).
- What is different about LED's is that they consist of modules that are assembled together on site to create a digital display that can be different resolutions, sizes and shapes.
- When you use the right LED for a specific context and it is installed correctly, you get more flexibility and opportunity for visual impact. You will also notice better contrast, brightness and longevity.



Traditional LCD
Like this.

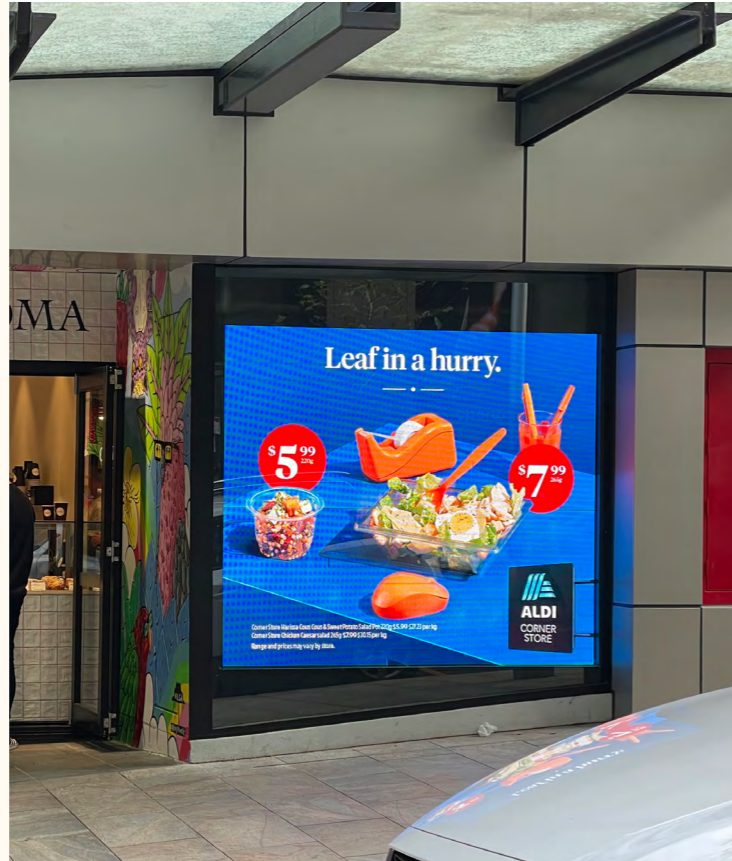
Why use LEDs?

According to Samsung, the big drivers for direct view LED adoption are:

- Lowered costs, driven by manufacturing advances and the miniaturisation of key components.
- Technological advances in pixel density, color quality and durability – allowing LED displays to rival and/or exceed flat-panel quality for commercial applications.
- New design flexibility, with modular design and technical properties that allow displays to be deployed at any scale, in just about any shape, to be used on surfaces as varied as ceilings, floors, windows and even rounded corners.

Sixteen: Nine via Samsung

The evolution of LED in the digital signage arena 2022



What does this mean for you?

Better visual performance

Because the LEDs are 'direct view' – that is, not backlighting an LCD screen overlay – they are significantly brighter to the eye, even at the same 'nit' or 'cdm' brightness ratings as a traditional LCD screen. This makes them a much better choice for installations designed to be viewed during the day, competing with natural light, or to cut through glare inside shopfront windows.

Economy

LEDs have a longer lifespan and encounter fewer technical issues, especially when compared to video wall configurations. LEDs are generally supplied with spare modules so that if there is a problem with a pixel or module, a replacement can be easily swapped in, saving downtime and money.

Flexible sizing

Because it is possible to join LED modules into many different configurations various shapes, sizes, angles, curves and joins are all possible to seamlessly integrate with your store design.

Cooler

LEDs emit very little heat compared with LCDs meaning they can be installed in tighter spaces, without having to cater for ventilation considerations in the mounting and shopfitting design.

ESG

Switching to LED from LCD will not adversely impact your organisations environmental and social credentials. Despite all of the advantages LED technology offers over LCD, it is comparable (if not better) from a carbon footprint, waste minimisation and overall environmental impact perspective. The supply chain is very similar to that of LCD in that the reputable brands are ethical and fair to use.

Lower costs

“Technology advances will drive LED prices down to the point where we will see LED sales at nearly three times that of LCD within five years. With such changes underway, one thing is clear: brands will need to adapt.”

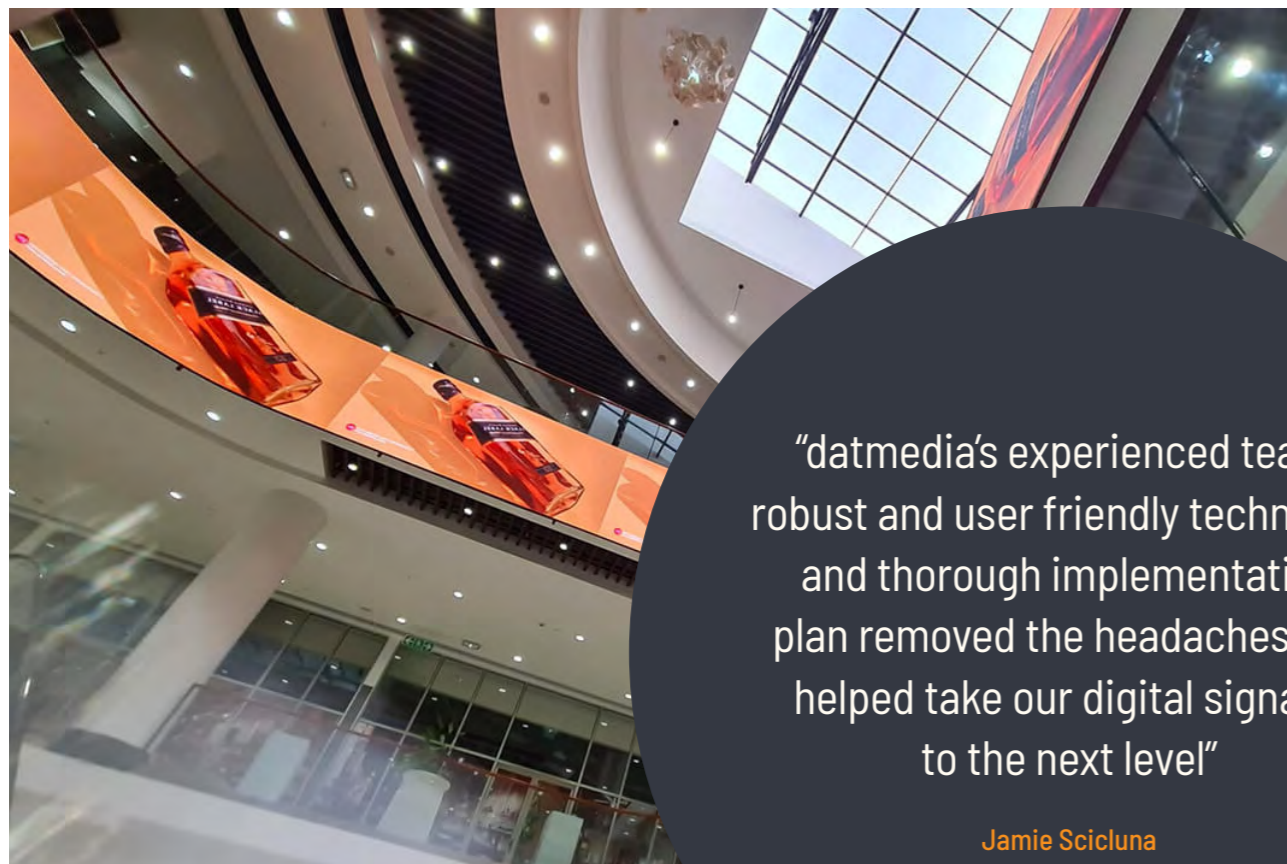
Ted Romanowitz

Principal Analyst, Futuresource Consulting

“LED displays have an average lifespan of 10 years – double the average 5-year lifespan of LCDs. Factoring longevity into the cost of your signage, LED’s longer lifespan can make it cheaper than LCD in the long run.”

Samsung

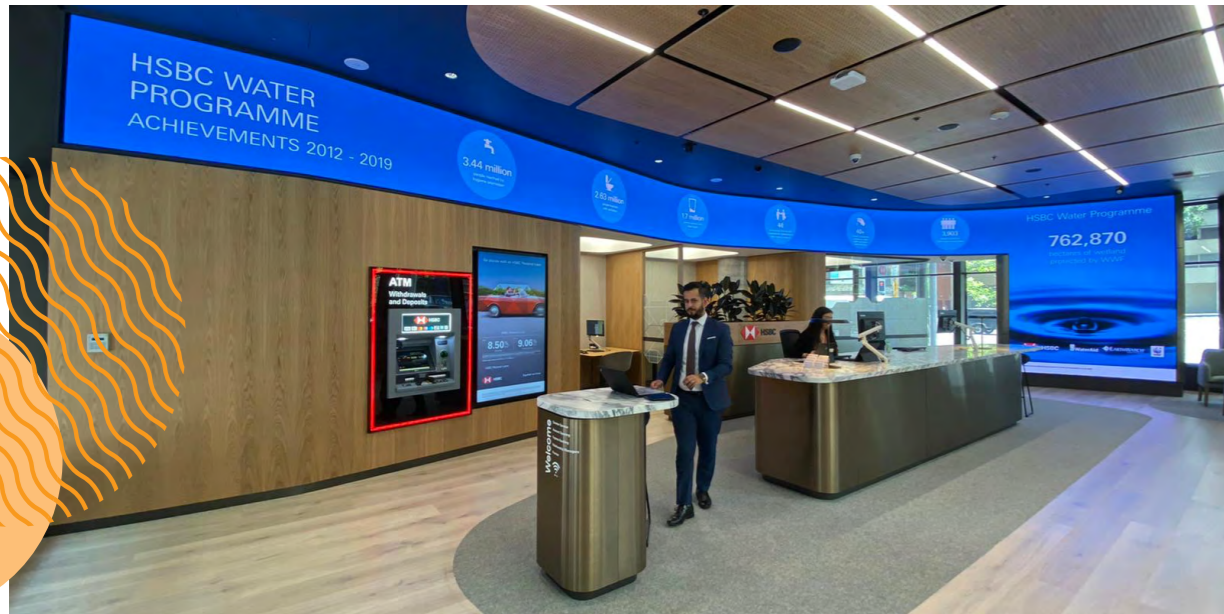
“The truth about LED lifespan and the longevity of your display” 2022



“datmedia’s experienced team, robust and user friendly technology and thorough implementation plan removed the headaches and helped take our digital signage to the next level”

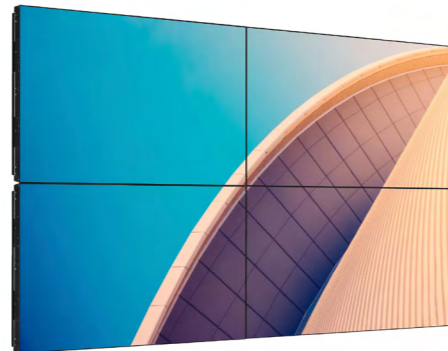
Jamie Scicluna

National Program Manager, H&R Block



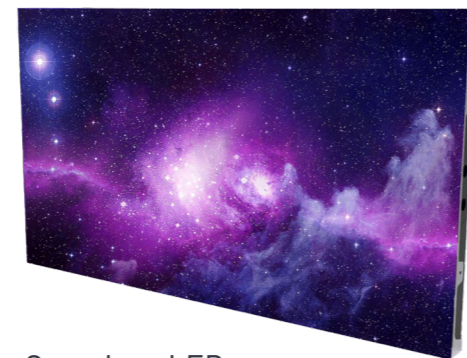
A compelling alternative to video walls

Until now, video walls (multiple LCD screens mounted together to form one picture) have been a great way to deliver a large format digital experience. Now that LED technology has come down in price, it is possible to achieve a high impact, high resolution display in large format without the tiled lines of the adjoining screen bezels and without the complexity and reliability issues of arraying the content split over multiple screens. Installation and service is much easier with LED also, avoiding the requirement for expensive mounting brackets and having to remove multiple screens to service an issue with a single panel.



Video Wall
(2x2 LCD Displays)

Before.



Seamless LED
Module Configuration

After.

Transparent - a new frontier in LED

An eye-catching alternative to Module LEDs is the breakthrough technology of Transparent LED, see-through screens with unique characteristics and advantages.

Transparent LED

Transparent LED displays are an innovative solution for window displays and glass surfaces. They allow businesses to showcase digital content without completely blocking visibility into (or out of) the premises.

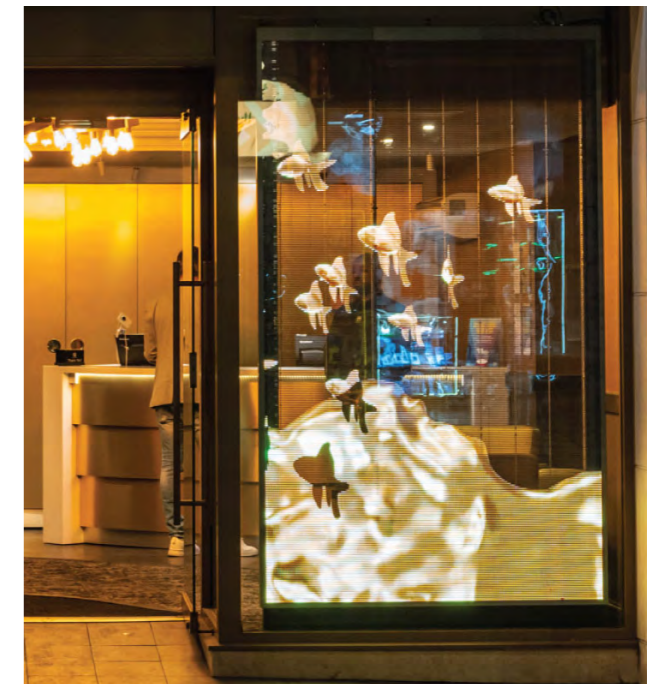
These screens feature a high level of transparency (up to 90%), ensuring natural light penetration while still displaying vibrant images. They are perfect for retail storefronts, shopping malls and exhibitions.

Transparent LED screens are designed for easy integration onto glass surfaces without the need for heavy structural modifications. Their modular nature allows for custom sizing, and many models feature front and rear maintenance access for quick servicing.

The sleek design, energy efficiency and visual appeal of Transparent LED is redefining the possibilities of digital signage technology

! PRO TIP!

Transparent LED is available in both asymmetrical and symmetrical pixel pitch formats. Symmetrical pixel pitch is generally better suited to retail storefronts due to its wider range of viewing angles. Be sure to check this when evaluating transparent LED options for your specific project.





Key considerations

Now that we have explored how LED technology is different and why it is superior to traditional displays for many use cases, we need to understand the key criteria to consider when investing in LED to ensure the right decisions are made.

For all its advantages, one of the challenges with LED is the vast array of technical specifications and models that can vary greatly in application, performance, quality, installation requirements and after-sales service and support.

Unfortunately, it is quite common for buyers to either purchase the wrong LED technology for their application, make mistakes with installation and/or experience poor content performance or lack of technical support because they were not aware of some of the critical aspects of LED implementations.

If you are considering utilising LED for your next retail project, we have developed the LED Buying Guide to help you make the right decision.



LED Buying Guide

Technical	
Item	Why It's important
Pixel Pitch	<p>Pixel pitch refers to the distance between the LED bulbs forming the picture of the LED screen. The smaller the distance, the closer the bulbs are packed, creating a higher resolution picture. This is critical for the viewing distance of your LED. If it will only be viewed from further away, a larger pixel pitch is fine. However if it is going to be viewed in closer proximity, a finer pixel pitch will be required for viewing clarity.</p> <p>Make sure you choose a pixel pitch which is appropriate for your LED use case.</p>
Brightness	<p>It is essential to make sure that your screen is bright enough to attract attention and be viewed clearly. This is especially true in brightly lit locations, natural light or behind glass in shopfront windows. Too bright is not good either but many LEDs allow you to reduce brightness if required and some even auto-adjust based on the ambient lighting at the time. Brightness is measured in candela (cd) or nits.</p> <p>Make sure you choose an LED which is bright enough for your application.</p>
Wiring	<p>The electrical wiring that joins the LED modules with the controller can be made from either gold or copper. Gold wiring costs more but it will substantially increase the performance and lifetime of the display. Copper wiring is a common failure point as displays age.</p> <p>Consider wiring quality when making assumptions about the expected lifespan of your LED.</p>
Manufacturer	<p>The LED supply chain is continually maturing and consolidating. There are many smaller manufacturers that do not offer the same certainty around corporate responsibility, quality, service and support, warranty and continuity of spare parts, as the larger more established players.</p> <p>LED's from smaller manufacturers may have the same technical specs for a lower price but you can generally have greater confidence in the more established LED brands.</p>
Warranty	<p>Even the best technology fails sometimes and especially for high-profile technology like LED displays, your warranty terms are very important. Ideally your manufacturer warranty will be: Supported by a local distribution partner (overseas warranty claims can be notoriously difficult); 3-5 year terms; Onsite (not Return to Base) meaning you do not have to send the LED away for repairs; and include a Spare Parts allocation of at least 5% meaning you are not at the mercy of spare parts availability when needed.</p> <p>Always carefully check the warranty terms offered with your LED.</p>
Technical Support	<p>LED's are a very specialised field and so it is important to have expert local support to resolve any technical issues properly and in a timely manner. A common pitfall is to purchase an LED from a local shopfitter or signwriter, who has purchased the technology from overseas and does not have access to the right technical support.</p> <p>Always purchase LED's from a local partner with expert technical support and national reach.</p>

Installation	
Item	Why It's Important
Frames & housings	<p>LED's are generally not supplied as a finished 'box' in the same way that LCD screens are. It's important to consider the aesthetic of the LED from the side and behind and potentially create a frame or housing to seamlessly integrate it into its location.</p>
Service access	<p>Most LED's are both front and rear serviceable to provide more options for service access.</p> <p>Consider how a technician will be able to access the LED to repair or replace modules and peripherals to avoid added costs and time for service calls.</p>
Internal vs external locations	<p>LED's can be installed almost anywhere including indoors or outdoors, hot or cold weather and behind glass. Make sure your LED is technically fit for the environment you are installing it into.</p> <p>A good local partner will be able to advise the brightness, IP rating and durability required to avoid technical and warranty issues.</p>
Project management	<p>There can be many moving parts to an LED installation, especially when it is part of a bulk project or site build/refurb.</p> <p>To avoid extra costs, delays and unsatisfactory installs, ensure your LED provider is experienced in project managing multiple trades, logistics, schedules, and OHS/induction requirements.</p>

Commercial	
Item	Why It's Important
CAPEX vs OPEX	<p>A good digital signage partner will offer you the option to purchase your LED upfront (as a CAPEX) or simply pay to use it As-a-Service (OPEX).</p> <p>Consider how you want to purchase your LEDs and whether paying to use them under a capped monthly plan would suit your business.</p>
Warranty & Support	<p>You can learn a great deal about your LED solution by studying the warranty and support terms offered. Does the manufacturer support its product locally and with a long-term (3-5 year) onsite warranty? This can save you significant costs and headaches and greatly reduce your total cost of ownership (TCO).</p> <p>Look for LED products that offer local support and long-term onsite warranties. This is a sign of the quality and service you can expect post-purchase.</p>
Direct Import vs Local Partner	<p>It is always tempting to go direct to manufacturers to save money on the upfront purchase cost of your LED - especially if you are used to doing this in your own business. However, the reality is that manufacturer's and small importers are not able or prepared to offer adequate local support or service to end-users.</p> <p>Find an experienced, local partner who can supply you with good quality LED options with excellent service and support. This will save you time, headaches and money in the long-run.</p>

IT	
Item	Why It's Important
Connecting to the internet for content updates and monitoring	It is critical that you are able to easily update the content on your LEDs and monitor their performance. This relies on a relatively stable internet connection that has the bandwidth required for the size and frequency of your content files and does not have any firewalls blocking communication with your content management system (CMS). Ensure your LED provider and IT team have exchanged requirements and tested to make sure your LEDs are properly connected.
Power & Settings	Your LED's reliability and lifespan can be severely compromised by unfavourable inputs and settings. To maximise longevity and reliability and save energy, ensure you understand the correct electrical prerequisites and technical settings for your specific LED use case and location.

Content	
Item	Why It's Important
Strategy	It is vital to know what content you intend to play on your LED's and why. Before you do anything, set your content strategy. That should inform every decision involved in your LED project.
Resolution & Viewing Distance	Your content needs to be created and displayed with the viewing distance in mind. Ensure the LED pixel pitch creates the correct resolution for your viewers and that the content is the right shape, resolution and size.
Shape	LED's can be installed in various size formats, however this can be a problem for content creators who need to create multiple iterations of the same content to fit different LED sizes. Sticking to a small number of standard HxW shapes and resolutions will simplify content creation and reduce issues.
Content Management	How do you distribute your content across your network of LED screens, update it when you need to and make sure that it is playing as it should? A leading content management system (such as <u>Laqorr CMS</u>) should give you easy content scheduling and monitoring capability all via the cloud.
Regulations	Depending on where your LED screen is being installed, it may be subject to 3rd party regulations that restrict the type of content it is allowed to display. Before setting your content strategy, check whether your LED will be subject to any limitations from local councils, centre managers etc.



A final note

There's a lot that goes into creating a digital signage system that levels-up your store experience and works at scale.

From selecting the right equipment, to managing the installation – not to mention coordinating the various stakeholders.

We hope this LED Buying Guide has helped you get a detailed understanding of how to implement LED into your digital signage journey.

And if you'd like to learn more? We're here to help.



“datmedia are an excellent partner. They always keep up with our fast-paced projects to deliver reliable and eye-catching digital signage across our store network”

Nelson Borrás
IT Leader, Decathlon Australia



Not sure where to start?

That's ok, because our experienced team is ready to help you. No question is too big or small. Give us a call.

P (07) 5575 7798
E hello@datmedia.com.au

datmedia.com.au

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