

# SONY

Leading innovations  
in the professional  
AV space

And the two key technologies  
behind them



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# Introduction

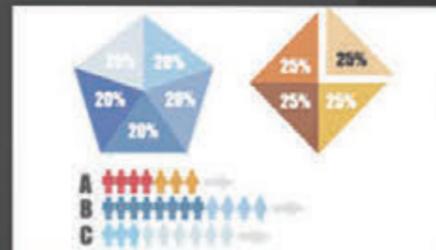
The increase in adoption of new technology within a range of industries is a demand which is fuelling rapid growth in the AV market. This paper explores the significance of flat panel solutions and projectors within these verticals, and proves why they remain key areas of growth with benefits such as cost efficiency, fostering collaboration, unifying communications and providing impactful and immersive large screen experiences.

*As the market grows and evolves, so does the product mix. New flat panel and projector technologies are driving benefits such as cost and environmental efficiencies.*



# Expansion within the flat panel market

The demand for flat panel solutions in both digital signage and presentation applications continues to grow; 2015 saw European sales of commercial LFD solutions reach 748K units, a YoY volume growth of 19%. It's a rise that is reflected by an increase in demand for presentation products from the corporate and education markets in Europe. This trend is expected to increase in coming years, with shipments of presentation applications estimated to account for 31% of sales in 2018 (up from 21% in 2015).



Time	Flight	Destination	Gate	Status
17:25	A 1106	Dalian	555	Est 20:20
18:15	K 659	Kuala Lumpur	555	Boarding
18:20	Z 634	Guangzhou	555	Est 19:25
18:50	U 9856	ShanghaiSHA	555	Est 19:30
19:05	O 1292	ShanghaiPVG	555	Cancelled
19:10	Y 5636	Melbourne	555	Final Call
19:15	X 9816	Mumbai	555	Final Call
19:15	X 709	Denpasar	555	Final Call
19:20	E 1822	Taichung	555	Boarding
19:20	I 920	Taipei	555	Boarding
19:20	Z 4050	Sydney	555	Boarding
19:25	R 872	Taipei	555	
19:25	X 464	Taipei	555	Boarding
19:30	J 119	Mumbai	555	
19:30	M 510	ShanghaiPVG	555	Boarding
19:35	A 452	Kaohsiung	555	
19:40	A 9818	Delhi	555	
19:45	A 428	Chengde	555	
	A 1428		555	
19:50	NK 6003	Kota Kinabalu	555	Est 19:40
19:50	Z 636	Shenyang	555	
19:55	X 468	Taipei	555	
19:55	Q 871	Singapore	555	
20:00	116	Beijing	555	Est 21:00
	X 0116		555	
20:00	X 715	Singapore	555	
	Y 5636		555	

Time	Flight	Destination	Gate	Status
20:00	A 622	Hangzhou	555	
	A 9817		555	
	A 8516		555	
20:05	CI 642	Taipei	555	
20:05	A 895	Singapore	555	
	A 9816		555	
	A 8914		555	
20:10	Z 7431	Medan	555	Est 20:00
20:15	O 304	Beijing	555	
	A 9817		555	
	A 6169		555	
20:25	A 622	ShanghaiPVG	555	
20:30	K 696	Singapore	555	
20:30	A 9817	Brisbane	555	
20:35	R 2965	Singapore	555	Est 21:15
20:40	Z 3080	Nanning	555	
20:40	A 869	Ho Chi Minh	555	
	A 9817		555	
	A 8162		555	
20:40	O 182	Taichung	555	
20:45	A 9817	Mumbai	555	
20:45	A 816	Xiamen	555	
20:45	G 807	Bangkok	555	
	A 9817		555	
	A 8002		555	
20:50	D 3862	Bangkok	555	
20:55	A 9817	Guangzhou	555	
20:55	A 9817	Sydney	555	
21:00	R 858	Taipei	555	
21:00	A 488	Taipei	555	
21:05	K 079	Kuala Lumpur	555	Est 20:55
21:05	X 9817	Beijing	555	

As the market grows and evolves so does the product mix. In response there has been a clear shift in the B2B flat panel model offering with vendors increasingly developing ranges to target specific applications and market segments. This is in part due to technology advancements but also the appreciation that the majority of industries and end users often have very different display demands. Customers are looking for value-orientated solutions that offer a B2B feature set and warranty, without the price premium often associated with high-end commercial flat panel solutions.

## Rising adoption of prosumer solutions

The market has seen rising demand from users in the SME sector for digital signage, alongside the replacement of projectors with flat panel solutions in corporate meeting rooms. In search of more cost effective applications, vendors have looked to prosumer solutions that offer lower daily operation hours and price points, at roughly 50% of the cost of higher end 24/7 commercial products. Volumes of prosumer products have risen in excess of 40% annually since 2012 with the category now accounting for over 30% of large format display sales.

However, rising demand for large screen experiences in digital signage applications and the replacement of projectors with flat panels mean demand for big screen sizes is rising. Shipments of 60"+ LFD's to the European market grew over 70% in 2015 to reach 131K units, and this is expected to rise to 192K units by 2018.

The adoption of 4K technology in both flat panel and projection solutions is another key area of development. Adoption of 4K in the TV market is accelerating rapidly as the price premium for 4K resolutions declines and availability of 4K content grows. The commercial flat panel market is expected to follow a similar trend; large screen 4K products are replacing tiled solutions (used to generate pixel counts above 1080P) in applications such as luxury retail and product design.

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## Corporate

Large format displays (LFD) provide many benefits for the corporate industry, one of which is facilitating wireless presentation systems. This sector is seeing an increase in demand for larger screen solutions that support the adoption of unified communications and enhance collaboration within the workplace. These presentation systems were developed to cater for content sharing from mobile devices and typically allow screen sharing and annotation between attendees. The utilisation of these systems coupled with the consumption of Full HD content is expected to drive demand for 4K within corporate presentation markets, as the price premium of the technology continues to decrease.

## Education

Mirroring the corporate market, LFD solutions offer many benefits to staff and students alike, for example allowing multiple devices to connect to a classroom's central display, to share screens and collaborate on group content assets. The consumption of digital content in learning spaces is increasing the need for future proofed AV solutions as an enabler of interactive group learning. In the UK, Benelux and the Nordics interactive flat panel solutions are rapidly replacing projector based interactive whiteboards as the classroom's primary display. Sales ratios in 2015 were 3/1 in favour of flat panel solutions.





## Retail

The retail sector is the largest consumer of commercial LFD products in Europe, accounting for over 35% of sales in 2015. Display technology allows retailers to advertise, communicate and entertain consumers, usually as digital signage (DS). The integration of customer engagement technologies like interactivity, gesture control, NFC and iBeacon is increasing and allows digital signage to become a targeted start point for customer interaction, not just to broadcast a message.

## Entertainment

The entertainment sector shows a need for 4K display solutions with the increasing demand to create impactful and immersive large screen experiences, which enhance the overall visitor experience and drive the requirement for higher resolutions. Adoption and demand for 4K solutions in pubs, bars and leisure centres displaying sports content is expected to rise, driven by the uptake of 4K content from leading sports broadcasters.



## Moving forward with laser projection

As a whole, total European projector market volumes have been in gradual decline for some years as flat panels replace them in corporate and education markets. The overall B2B projector market on a unit basis declined 18% YoY in 2015. However, developments within projection technologies have led to new functionality and benefits for these audiences.



Sales of installation projectors (5000+ lumens), excluding digital cinema, continue to perform well and in 2015 shipments to the European market grew 1% YoY. The growth here is attributed to the use of projectors in large screen presentation environments, such as corporate boardrooms and higher education auditoriums, where larger screen sizes are crucial. This is accompanied by the rising demand of projectors used to create rides, attractions and experiences in theme parks and museums, plus increasing utilisation in digital signage applications - most notably through the retail sector where the flexibility of blending different solutions and products is creating new use cases. The adoption of new technologies, in particular solid-state light source technology and 4K resolution, is increasing the applications for projection technology in these industries and perhaps its longevity in other more mainstream areas.

## Projectors using solid-state technology

Solid-state lighting (SSL) refers to a type of lighting that uses light-emitting diodes as sources of illumination rather than electrical filaments, plasma or gas. SSL creates visible light with reduced heat generation and less energy dissipation, providing greater resistance to shock and vibration compared to brittle glass tubes/bulbs. Developments in laser phosphor technology have allowed SSL source engines to target the mainstream installation projector market (5000+ lumens), replacing lamp-based alternatives.

In 2015, 7% of installation projector sales in Europe utilised solid-state technology in particular within higher education auditoriums, attractions in museums and theme parks. In these sectors, usage hours typically extend beyond the 4-7 hours seen in presentation applications. Here the cost saving that can be achieved vs. a lamp-based product is most evident, creating a strong total cost of ownership argument for solid-state products.

The visual benefits of solid-state solutions, brightness and clarity, are also most beneficial in these environments which typically have a higher requirement for video and high definition imagery than more mainstream presentation applications. Looking ahead, the falling cost of laser componentry and wider awareness of the benefits of solid-state solutions is expected to influence a rapid rise in adoption. It's predicted that by 2018, 63% of installation projector sales in Europe will use solid-state technology.

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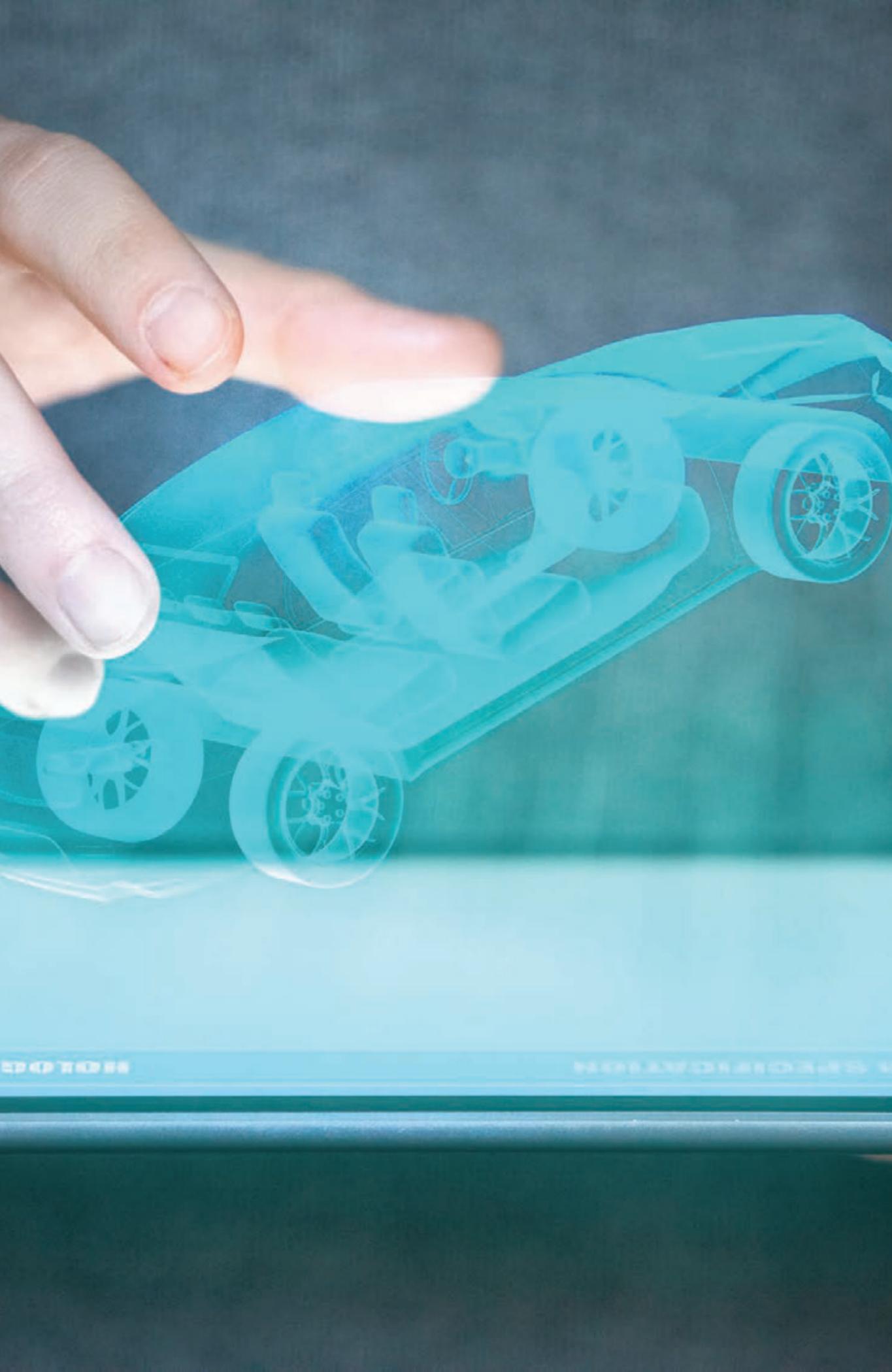
## Corporate and Education

The benefits gained in brightness and image clarity offered by transmissive LCD technology vs projection solutions mean flat panel displays are often prioritised in video enabled rooms. However, there is still a growing demand for projectors in large boardrooms and auditoriums which are a core market for these solutions. The growth of new technologies, such as SSL and 4K resolutions, is also increasing longevity in this and other mainstream industries. The benefits of flat panels and projectors being used in unison is also being discovered by these markets, with video enabled flat panel solutions installed alongside a projector acting as a complimentary product rather than a replacement.

## Retail

The adoption of projection technology in digital signage markets is rising, fuelled by the advent of solid-state technology in high brightness projectors and the declining cost of edge blending software. Together these two technologies offer an affordable solution for customers looking to create a large, high impact image in diverse environments. The rise of SSL, specifically laser phosphor (which is much brighter than existing LED solutions), has finally provided retailers with projectors that require little to no maintenance, or on-going expense. Therefore, projection can be brought forward as a feasible option beside other display technologies in the signage environment.





## Entertainment

Developments within display technology are also changing demands in more established projection markets, such as entertainment. Most interesting from a solutions perspective are the theme park and museum markets; both typically have requirements for large screen experiences using projection, flat panel and tiled LCD/LED solutions, which have extended operation of over 4-8 hours. This creates a strong case for the adoption of solid-state technology as a cost saving measure where projection is in use. Alongside traditional 4K markets of digital cinema and CAD/CAM, new applications requiring high impact, high-resolution large screen experiences are beginning to adopt 4K.

## Specialist industry

Companies in the design and manufacturing sector have heavily invested in 4K capable digital tools for a number of years, creating a solid digital workflow and driving huge efficiencies. Enhancements in software, and in projection, have meant that creating insight from data is now easier and cheaper.

# Conclusion

End users' expectations are rising. They're demanding visually spectacular imagery, effortless interaction and the ability to easily share impactful content.

Because of this, we're seeing an inevitable increase in the adoption of two key AV technologies: flat panel displays and solid-state projectors.

Sony works closely with its partners and end users to understand their needs and design solutions that enable organisations to exceed customer expectations. Sony solutions help deliver immersive and impactful imagery in areas from the smallest breakout rooms to large boardrooms, auditoriums and entertainment venues.

*With a recognised heritage in 4K, Sony has been investing in this growing technology long before the benefits of future proofing, cost saving and high impact visuals were fully realised in these B2B markets.*

Delivering brighter, better-looking pictures with affordable running costs and easy installation, Sony's BRAVIA professional displays offer stunning 4K imagery, touch-enabled displays and TDM digital signage software, to instantly grab an audience's attention.

Solutions such as Sony's Vision Presenter have been developed to help educators and corporate stakeholders take advantage of 4K and active learning methods, by blending a broad range of materials such as slideshows, videos, files and more.

Meeting demands for stunning imagery is made easier with laser technology. Pioneering this high quality technology is Sony, who introduced the world's first, brightest and most innovative 3LCD laser projectors. With one of the market's largest range of 3LCD and SXRD laser projectors, Sony brings high quality images and reliable solutions with up to 20,000 hours of virtually maintenance-free operation.

A wide range of markets can now take advantage of simplified integration and cost savings, in addition to applications that are aligned to their specific environment and usage, all through one single provider. Sony's expertise and services cover all applications, providing advice and support from the first stages of consultation all the way to installation and integration.

See how Sony can help you with  
your next project, contact us:  
**[pro.sony.eu/future](http://pro.sony.eu/future)**