



# Action Report

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## Report Summarizing Coverage of Professional Audiovisual Industry Activity

September 2019

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— PJ —  
SOLOMON

September 2019

# Special Highlights in this Issue

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- AV Industry Overview and Market Update
  - Corporate AV Market Continues Leadership
  - PJ SOLOMON InfoComm 2019 Observations
  - Retailers and Restaurants Investing in AV
  - Digital Signage is Key Driver to Pro AV Growth
  - Predictions for AV Industry
  - AV Industry Product Trends
-

# Recent 2019 PJ SOLOMON Transactions



Has sold select advertising assets in Chicago to



Served as exclusive strategic and financial advisor to Total Outdoor



Has been sold to



Served as financial advisor to VSS-Southern Theatres / Movie Tavern



Has been sold to



Served as financial advisor to Moviehouse & Eatery



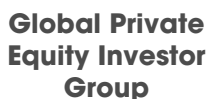
Has been sold its San Francisco advertising portfolio to



Served as exclusive strategic and financial advisor to Total Outdoor



Has received an investment from



Served as financial advisor to Moose Knuckles



Has sold select out of home media assets to



Served as strategic and financial advisor to Total Outdoor



Has agreed to sell



to LE TOTE

Serving as financial advisor to Hudson's Bay Company



Has sold majority stake to



Served as financial advisor to 3Gtms



Has agreed to be acquired by



Owner of



Served as financial advisor to Len Riggio, Founder, Chairman and 19% shareholder of Barnes & Noble

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# AV Industry Overview

## Manufacturing Companies

### Audio Manufacturers

Companies primarily engaged in the development, manufacturing and distribution of audio equipment



### Visual Manufacturers

Companies primarily engaged in the development, manufacturing and distribution of visual equipment



### Diversified AV

Companies primarily engaged in the development, manufacturing and distribution of audiovisual equipment; often large diversified conglomerates



## Sales Channels



Retailers



Direct-To-Consumer



Business-To-Business

## Integration Companies

### Overview

Use components from audiovisual manufacturers to create communication and presentation solutions for workplaces, higher education and events, among others



### Services Offered

Design and Engineering



Maintenance and Support



Managed Services



Cloud Collaboration



# AV Integrator Business Model

Design and Engineering



Maintenance and Support



Managed Services



Cloud Collaboration



Provide support services for the AV project (recurring revenue)



Client brings a project to the AV Integrator (communications, live events etc.)



AV INTEGRATOR

Produce solution for the client (project based revenue)



Work with key suppliers / clients to assess the proper equipment for the project

SHARP  
BARCO

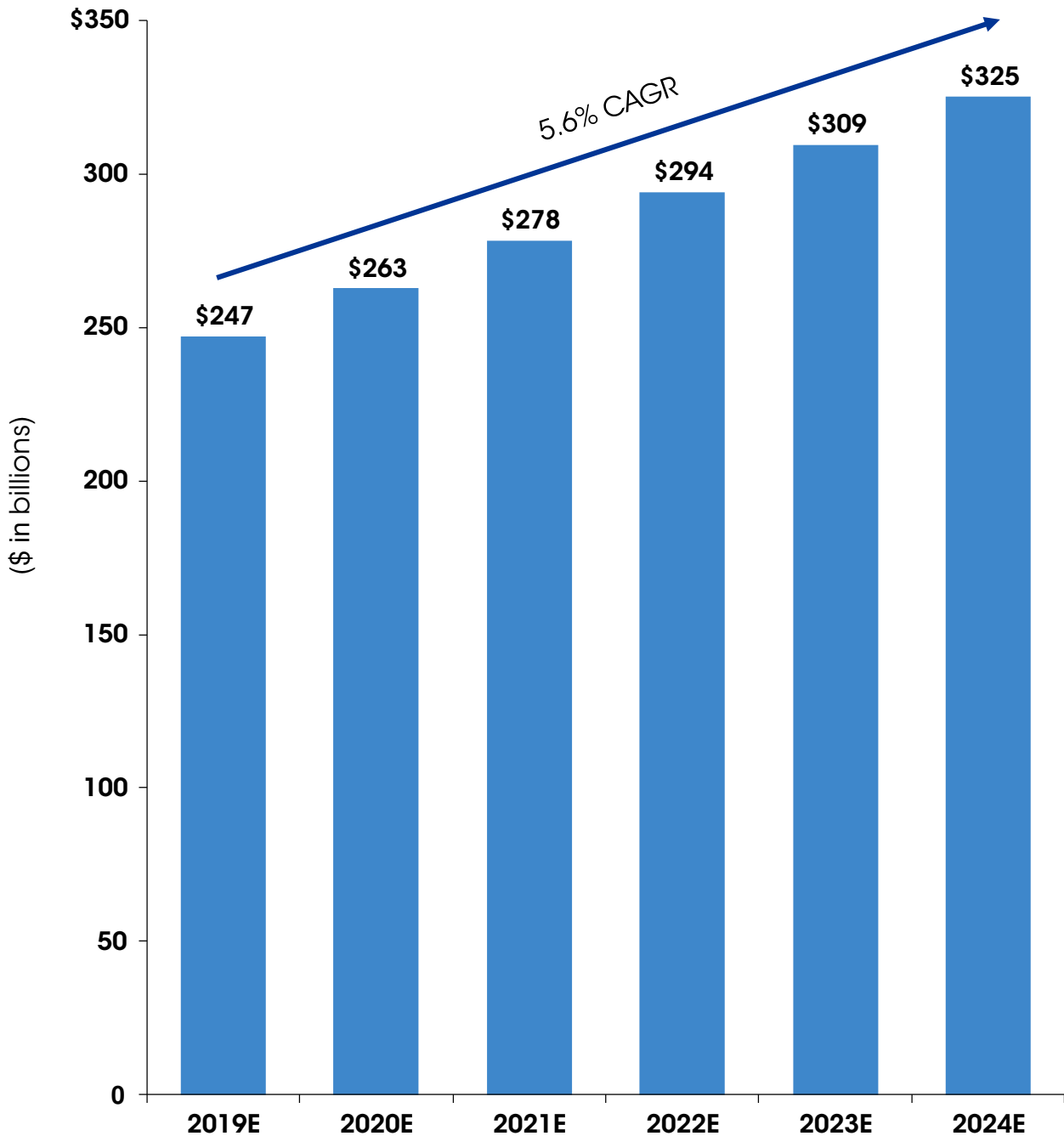
SAMSUNG  
SONY

LG  
Panasonic

BOSE  
ClearOne

# AV Industry Market Sizing

Industry experiencing strong and stable growth from \$247B in 2019 to \$325B over next 5 years

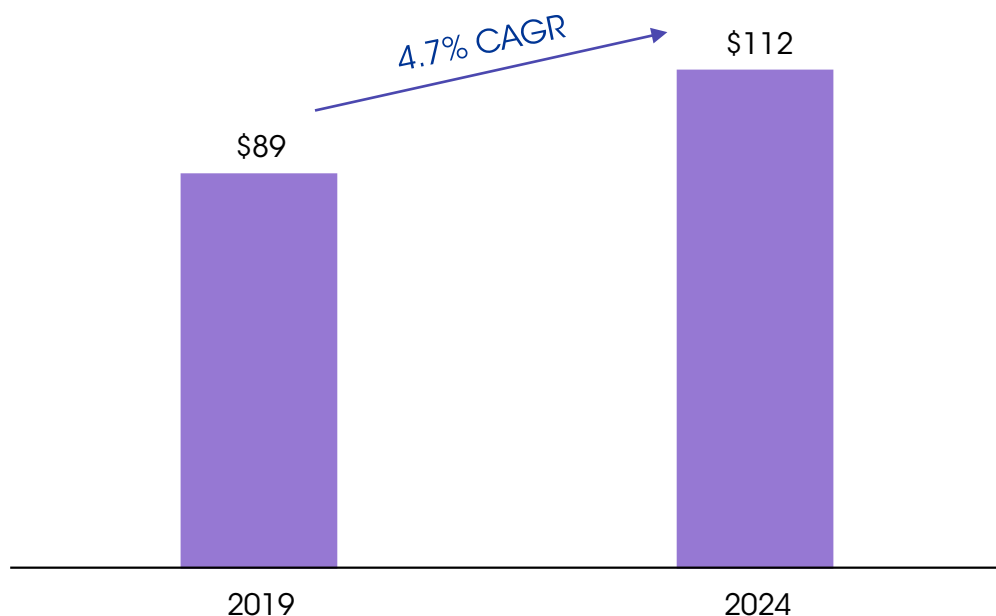


Source: AVIXA research.

# Americas AV Market

## Pro AV Market in the Americas to Reach \$112 Billion in 2024

- The market for professional audiovisual solutions and services in the Americas will grow to more than \$112 billion in 2024, from \$89 billion in 2019, according to AVIXA, the Audiovisual and Integrated Experience Association
- Although the robust market bodes well for the region, forecasters expect the Asia-Pacific (APAC) market to surpass the Americas, reaching \$90.6 billion in 2019 and \$127.6 billion in 2024
- According to *IOTA Americas*, the largest solution segment in North America is streaming media, storage, and distribution (SMSD), with \$20.6 billion in revenue in 2019
  - The U.S. SMSD segment amounts to \$18.7 billion in 2019, while the Canadian market is nearly \$2 billion
  - Although the North American SMSD market is more than 13 times larger than the South American market, South America is set for faster growth
  - SMSD's strong numbers reflect large investment in back-end systems to support content distribution and control
- The pro AV video projection market in North America is set for a steep decline in the coming years, with revenue dropping to \$1.9 billion in 2024 from \$3 billion in 2019
  - Pro AV users in the region are turning away from projectors and toward larger-sized flat-panel displays due to displays' falling costs and less complex usage requirements



Source: AVIXA.

**Mark Your Calendars:  
The PJ SOLOMON Cocktail Party**

October 15, 2019  
6:30pm to 8:00pm

**SMASHING IT:  
OOH + AV**

**THE  
PJ SOLOMON  
COCKTAIL  
PARTY**

PJ SOLOMON  
1345 Avenue of the Americas  
New York City

**RSVP**

**October 15, 2019  
6:30pm to 8:00pm**



# Global Corporate AV Market Continues Leadership

Professional AV for corporate settings account for ~\$40 billion (~20%) of the total AV industry

## Productivity Drives Spending

- As office workers are increasingly mobile, workplaces need remote communication and conferencing solutions
- Variety of devices increases security and integration challenge

## Focus on the Office

- Despite push for flexibility, many corporations aim to bring employees back to the office
- AV technology implementation improves the office experience, making work more desirable and the office a more dynamic environment

## Corporate Sizing Guarantees Scale

- The breadth and diversity of challenges faced in the current corporate environment demands a high level of AV technology investment to support office workers
- Corporate technology managers in the U.S. plan to increase capital expenditures by ~\$181 billion in 2018; this includes ~\$12 billion for AV system investments

## Emphasis on Collaboration

- Focus of most AV investment is on conference rooms; new focus on integration of audio and video capture and production equipment
- Significant spending increases planned for security and surveillance systems and wireless presentation technology



Source: AVIXA research and article by Sean Wargo.

# PJ SOLOMON InfoComm 2019 Observations

## Key themes driving results at InfoComm

### 1 The Next ZOOM: Why is ZOOM so Successful and Who is Next?

- Customer-driven with “Freemium” model targeted at early adopters
- Owns and runs data centers rather than using a third-party cloud service
- Efficient customer acquisition – takes only 9 months for a customer to make the company profit (one of the lowest profit timelines in SaaS)

### 2 Ease of Use and Connectivity

- Focus on ability to refresh and keep content current
- Connectivity of buildings, corporations, stadiums and schools are key areas of growth for the industry

### 3 Live Events Continue to Grow

- Event production pavilion exhibitor count continues to expand
- Site-based entertainment has continued to grow in popularity, presenting a significant opportunity for AV

### 4 Full Service

- A/V companies and their customers are looking for full service providers and one-stop shops that offer great products, vision, services and execution

### 5 Quality of Screens

- Quality of screens continues to improve at lower costs

### 6 Fragmentation

- The number of companies at InfoComm keeps expanding as the market is highly fragmented on the audio, visual, production and integrator side
- Great consolidation and synergy potential

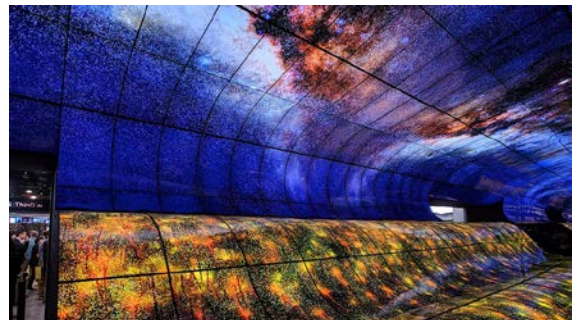
#### InfoComm 2019



#### Samsung: The Wall Massive Modular MicroLED TV

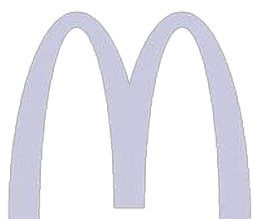


#### LG: Curve of Nature Wall and Ceiling Structure Built of 260 55-inch OLED TVs



# Retailers and Restaurants Investing in AV

Retailers continue to invest in data-driven technology including audiovisual equipment to improve the customer experience and drive traffic



- McDonald's has invested deeply into data and technology to improve the customer experience
  - Migrated from static screens to digital screens on its interior signage and its drive-thru displays
- Recent acquisition of tech startup Dynamic Yield provides opportunity to further improve displays
  - Dynamic Yield launched pilot program in its Miami store that improves the content of its digital displays in real time



- Macy's recently partnered with Perch, a provider of an interactive platform for interactive retail marketing
  - Partnership includes rollout of new retail platform at select Macy's locations
- Platform offers digitally driven alternative fragrance shopping experience
- Platform uses a digital interface to share information on a variety of fragrances and suggests scents that match customer preferences



- Levi's recently partnered with Reflect, D3 and BrightSign to deliver digital signage to its flagship Times Square store
  - Combined 10-million LED pixels on more than 1,000 sq. ft. of wall space
- Reflect deployed the 41-foot curved LED panel near the store entrance and the 82-foot wide U-shaped panel wrapped around the grand hall

Source: News articles and Wall Street research.

# Digital Signage is Key Driver to Pro AV Growth

The global pro AV market is expected to post a CAGR of close to 11 percent during the period 2018-2022

## Incorporation of Innovative Technologies

- Increased demand for pro AV equipment is paving the way to advances in technologies
- Digital signage has gained immense popularity and has become a primary tool for corporates to display contents to convey urgent messages to the target audience
  - The retail industry is increasingly adopting digital signage systems to influence the buying behavior of the target audience
- Pro AV vendors have begun integrating support for new categories such as VR content
  - Adoption and integration of such specialized content in the existing pro AV ecosystem will increase during the forecast period
  - This will have a positive impact on the growth of the pro AV market during the forecast period



Vendors in the pro AV market are focusing on training users on the features of pro AV equipment. Vendors are conducting training programs that are designed to help AV professionals acquire detailed knowledge and understanding of their complete range of AV solutions. Such training programs will positively impact the growth of the pro AV market during the forecast period.

**Technavio Analyst**



**9.51%**

Estimated 2018 Year-over-Year Growth Rate

**\$87.7B**

Estimated Incremental Growth from 2017 to 2022

## Segmentation Analysis

- Americas held the highest share of the global pro AV market in 2017, accounting for a market share of around 43 percent, followed by APAC and EMEA
  - APAC is expected to witness a significant increase in its market share to surpass the Americas by 2022
- The market share of the Americas and EMEA will witness a substantial decline during the forecast period

Source: Source: Technavio Global Pro AV Market 2018-2022.



# Predictions for AV Industry

Informative experiences and continuous connections will drive AV

Software designed for remote monitoring and control will continue to stake its claim in the AV industry. Convention centers, conference rooms, city councils and government buildings are increasingly filled with complex equipment and gear. Intelligent software solutions will allow IT managers to assist with remotely monitoring the hardware.

**Kevin Smith**  
Director of Integrated Systems Sales  
Shure

Consumers in all walks of life expect an interactive experience no matter where they are – from retail stores and restaurants to corporate headquarters and schools. The AV industry will continue moving towards personalization and self-service, making it easier to interact and achieve personalized results.

**Kristin Roubie**  
Senior Channel Sales Manager  
Elo

2019 will be the year that networking becomes the norm for the AV industry. Breakthroughs on the product side will make networked audio and video more pervasive across many new applications. 2019 will also be the year that IT departments finally embrace networked AV products.

**Josh Rush**  
SVP of Marketing and Products  
Audinate

We anticipate continued growth in huddle and team rooms – creating easy-to-use meeting rooms that facilitate collaboration. Room schedulers that help facility planners with analytics on room usage is also very popular.

**Laura Moorhead**  
VP of Sales  
Neurilink

Source: AV Network.

# AV Industry Product Trends

Trends continue to focus on advancements in technology and engaging viewers

Technology

Representative Companies

## Livestreams

- Livestreaming unites audiences in disparate locations and facilitates interaction
- Sync with social media to display real-time Facebook/Instagram posts, Tweets, etc.

**ClearOne**



## LED

- Screen versatility in creating video walls, tiles, backdrops, banners, etc. that traditional projections are unable to recreate with speed or agility
- Reduces power requirement and amount of heat coming off lighting elements, longer lifespan, greener product, less constant changing of bulbs

**CREE**

**NICHIA**



TOYODA GOSEI

## Projection Mapping

- Increasingly utilized to engage viewers with content
- Highly complex systems with projections onto new mediums beyond buildings and walls such as cars, trees, etc.

**CHRISTIE**

**WorldStage**

## Laser Light Sources

- Lasts up to 20,000 hours (in contrast with standard projector lamps which need to be swapped out every 1,500 hours)
- Wider range enables differentiated offerings and tilting of light angles to create more visually pleasing effects

**SLD LASER**

**YSL**  
Photonics

## 4K

- Ideal for clients with large audiences or those who want to incorporate detailed content, fine photography, VR or other immersive experiences into their events
- Requisite technology (projectors, camera, cables, etc.) will need to become 4K adaptive

**Hisense**

**TCL**

**LG**

# Sector News

## Audio / Visual

- **8/23: Technicolor**  
a France-based listed broadcasting technology services provider, saw its shares shoot up more than 20% on the announcement to stock market regulator AMF that investment fund **Bain Capital** held 5.04% of the shares capital and voting rights in the company, French daily *Les Echos* reported. The report cited an observer as saying that Bain Capital has been increasing its shareholding in Technicolor since last year
- **7/24: Cenero**  
a US-based leader in audio video, unified communication and IT solutions, announced expansion of their business with a new office in Dallas, TX
- **7/16: Shure**  
a US-based manufacturer of microphones and audio electronics, and undisclosed stake in **LANDR Audio**, a Canada-based company that develops an automated drag-and-drop digital audio postproduction tool, for **\$19M**
- **6/12: HF Company**  
a France-based manufacturer of communication equipment for TVs and computer devices, acquired the Germany-based cable and antenna manufacturer of **VOXX**, a US-based distributor of mobile and consumer electronics accessories, for **\$19M**
- **5/09: SnapAV**  
a US-based manufacturer of audio, video, and CCTV products solutions for the residential and commercial channels acquired **Control4 Corporation**, a US-based company engaged in manufacturing a complete line of affordable wired and wireless home automation products for **\$617M**
- **1/03: ZAGG**  
a Midvale, Utah-based producer of mobile device accessories, announced it has acquired **HALO**, a Hartford, Connecticut-based direct-to-consumer mobile accessories company with an extensive IP portfolio, for a total purchase price of USD **43m** in a combination of cash and stock

## Digital Signage

- **9/12: Barco**  
acquired 5% of **Unilumin**, gaining access to Unilumin's LED manufacturing expertise while Unilumin gains a route into high-end market segments, including direct-view LED cinema screens
- **9/10: Acuity Brands**  
an Atlanta, Georgia-based provider of lighting and building management solutions, has agreed to acquire Montreal, Quebec-based **Luminares Group** from **Sentinel Capital Partners**
- **9/09: Armagard**  
announces the launch of its battery-powered **DigiStopper**. This unique range of cable-free, outdoor digital A-frames replaces the traditional sandwich board with portable, high-bright and weatherproof advertising ideal for shop-front locations and customer entrances
- **7/30: Mercury Systems**  
a US-based company engaged in providing specialized, high-performance computing systems and software designed for complex HPC and embedded applications, acquired **American Panel Corp**, US-based manufacturer of flat panel displays for Aerospace, Maritime and other applications, for **\$100M**
- **6/20: Acuity Brands**  
the Atlanta-based provider of lighting and building management solutions, has acquired **WhiteOptics**, a New Castle, Delaware-based manufacturer of advanced optical components
- **4/01: Keppel Corporation**  
has entered into an agreement to invest USD 50m for a minority stake in **Envision AESC Group Ltd**, a Japan-based intelligent lithium-ion battery company
- **3/15: Ideal Industries**  
a Sycamore, Illinois-based manufacturer of wire connectors and other electrical products, has agreed to acquire Durham, North Carolina-based **Cree, Inc.**'s lighting products business unit

Source: Press releases, company filings and Wall Street research.

# Sector News

## Augmented Reality & Event Production

- **8/12: Reliance Industries Limited**  
an India-based company engaging in the hydrocarbon exploration and production, petroleum refining and marketing, petrochemicals, retail, textile, and digital service businesses worldwide, acquired **Tesseract Imaging Private Limited**, an India-based company which designs and develops hardware and software for augmented, virtual, and mixed reality, for an undisclosed amount
- **7/04: Bublar Group AB**  
a Swedish-based company that develops and sells mobile games and apps, acquired **Sayduck Oy**, a Finland-based company that develops a 3D and augmented reality software providing furniture makers with 3D models of their products, for **\$13.5M**
- **6/17: Sogclair SA**  
a France-based engineering company that accomplishes large-scale design and co-development projects for industrial accounts, and develops simulation and virtual reality solutions
- **5/30: Ultrahaptics Limited**  
a UK-based company engaged in development and sale of haptic control systems, acquired **Leap Motion**, a US-based developer of hardware and software platform for augmented reality experiences, for **\$30M**
- **5/13: ZF Friedrichshafen**  
a Germany-based provider of systems for passenger cars, commercial vehicles, and industrial technology worldwide, acquired **SIMI Reality Motions Systems GmbH**, a Germany-based provider of 2D/3D movement and behavior analysis software for an undisclosed amount
- **4/01: Vizrt Limited**  
a Norwegian-based provider of software-based solutions for real-time 3D graphic, acquired **NewTek**, a US-based company that develops and supplies portable live production and 3D animation system, for an undisclosed amount

## Diversified AV

- **9/4: Diversified**  
a U.S. based AV/IT integrator, acquired **Advanced**, a Canadian-based provider of specialized audio visual communications solutions
- **8/19: Rizing Holdings**  
a US-based provider of SAP-focused IT systems integration and implementation services, acquired **Transcend Spatial Solutions**, a US-based provider of information technology services including strategic planning, data collection tools, integration, visualization, computer applications, and other technologies, for an undisclosed amount
- **8/15: Barcodes**  
a US-based company providing barcode, mobile computing, point of sale and RFID solutions, acquired **Plasco**, a US-based provider of digital photo identification systems and related consulting services, for an undisclosed amount
- **7/01: Applied Materials**  
the Santa Clara, California-based firm focused in materials engineering solutions used to produce chips and advanced display has reached an agreement to acquire Japan-based **Kokusai Electric Corporation** for USD 2.2bn in cash from global investment firm **KKR**.
- **6/14: CMC Magnetics Corporation**  
a Taiwan-based company that manufactures and distributes optical media for use in media, electronics, retail, cosmetics, food, liquor, toy, and publishing industries, acquired **Mitsubishi Kagaku Media Co.**, a Japan-based manufacture of recordable digital data storage media including CDs, DVDs, floppy disks, memory cards, and tapes and other Computer peripherals, for **\$32M**
- **5/15: DCC**  
an Ireland-headquartered distribution and business support-services company acquired **Comm-Tec**, a value-added distributor of Pro AV and IT products to system integrators and resellers across Germany, Austria, Switzerland, Italy and Spain. The business recorded revenue of EUR 90m in its most recent financial year and employs 150 people.

Source: Press releases, company filings and Wall Street research.



# Audio / Visual M&A

## Recent deals in the Audio / Visual market

(\$ in Millions)

Date Announced	Acquiror Name	Target Name	Enterprise Value	EV as a Multiple of:	
				LTM Sales	LTM EBITDA
Sep-19	Acuity Brands	Luminaires Group	NA	NA	NA
Sep-19	Barco	Unilumin (5% stake)	\$54	NA	NA
Sep-19	Diversified	Advanced	NA	NA	NA
Aug-19	Rizing Holdings	Transcend Spatial Solutions	NA	NA	NA
Aug-19	Reliance Industries Limited	Tesseract Imaging Private Limited	NA	NA	NA
Aug-19	Barcodes	Plasco	NA	NA	NA
Jul-19	Shure	LANDR Audio	19	NA	NA
Jul-19	Mercury Systems	American Panel Corp	100	NA	NA
Jul-19	Bublar Group AB	Sayduck Oy	14	NA	NA
Jul-19	Applied Materials	Kokusai Electric Corporation	2,200	NA	NA
Jul-19	AVI-SPL	Digital Video Networks	NA	NA	NA
Jul-19	Biamp	Community Loudspeakers / Apart Audio	NA	NA	NA
Jun-19	Mood Media	South Central A/V	NA	NA	NA
Jun-19	HF Company	VOXX (German Accessories Division)	19	NA	NA
Jun-19	Acuity Brands	WhiteOptics	NA	NA	NA
Jun-19	TAIT	Kinesys	NA	NA	NA
May-19	DCC	Comm-Tec	NA	NA	NA
May-19	Sound United	Onkyo Home Audio and Visual	NA	NA	NA
May-19	SnapAV	Control4	680	2.5 x	16.4
Nov-18	Solotech	SSE Audio Group	NA	NA	NA
Nov-18	AVI-SPL	Interactive Solutions	NA	NA	NA
Oct-18	AVI-SPL	Sharp's Audio Visual	NA	NA	NA
Sep-18	DCC	Jam Group	170	0.5	NA
Sep-18	Baring Private Equity Asia	Pioneer	540 (a)	1.5	NA
Jul-18	DCC	Kandor / Stampede	149 (b)	0.3 (b)	NA
Jul-18	Corbett Technologies	Communications Specialists	NA	NA	NA

Source: Press releases, company filings and Wall Street research.

(a) Equity investment valued Pioneer's enterprise value at roughly ¥60 billion.

(b) Financials reflect combined values of Kandor and Stampede.

# Market Indicators

## Share Price Performance

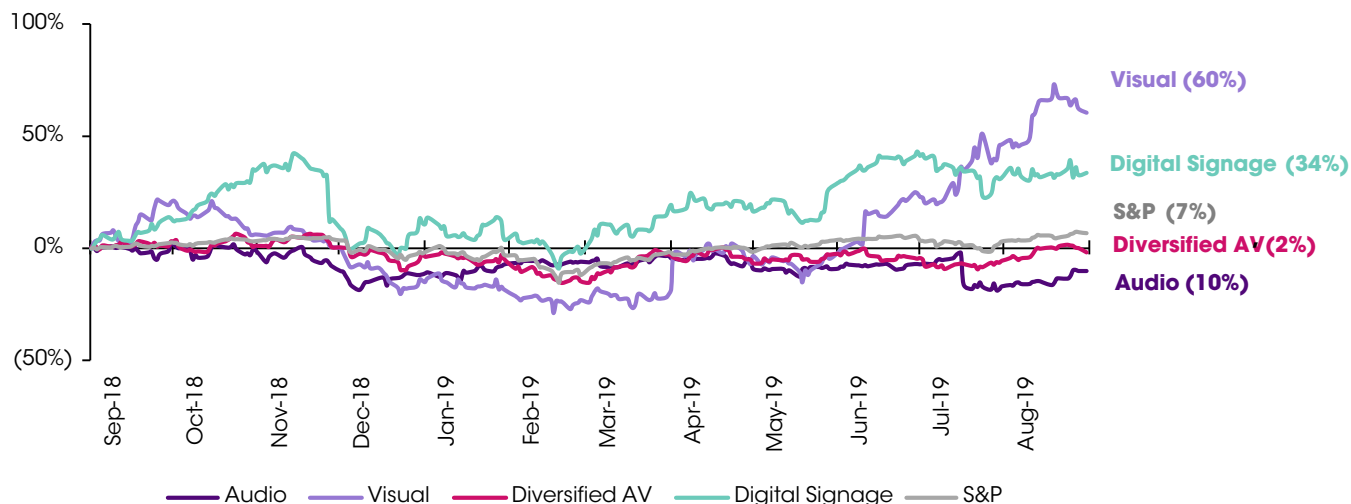
	Stock Price 9/16/19	1-Week % Change	1 - Month % Change	YTD% Change
<b>Audio</b>				
Dolby	\$63.98	6%	8%	3%
Plantronics	36.38	22%	30%	10%
Sonos	15.29	8%	33%	56%
B&O	6.27	(0%)	0%	(54%)
ZAGG	6.42	11%	8%	(34%)
VOXX	4.83	16%	0%	22%
<b>Audio Median</b>		<b>10%</b>	<b>8%</b>	<b>7%</b>
<b>Audio Mean</b>		<b>11%</b>	<b>13%</b>	<b>0%</b>

<b>Diversified AV</b>				
Samsung	\$39.50	11%	11%	14%
Sony	60.49	5%	7%	25%
Philips	48.25	3%	4%	36%
Hitachi	38.15	8%	9%	43%
Panasonic	8.34	8%	5%	(8%)
Toshiba	31.90	2%	5%	13%
LG	55.25	9%	11%	(1%)
Logitech	41.89	4%	7%	33%
Hisense	1.24	14%	14%	(2%)
<b>Diversified AV Median</b>		<b>8%</b>	<b>7%</b>	<b>14%</b>
<b>Diversified AV Mean</b>		<b>7%</b>	<b>8%</b>	<b>17%</b>

	Stock Price 9/16/19	1-Week % Change	1 - Month % Change	YTD% Change
<b>Visual</b>				
TCL	\$0.52	14%	18%	46%
Sharp	11.82	12%	10%	18%
Barco	201.88	(6%)	3%	78%
Konka	0.62	(1%)	17%	32%
Japan Display	0.60	(1%)	(9%)	(8%)
Technicolor	0.86	4%	2%	(21%)
Funai Electric	5.29	2%	(12%)	10%
ClearOne	2.08	(8%)	(8%)	66%
<b>Visual Median</b>		<b>1%</b>	<b>2%</b>	<b>25%</b>
<b>Visual Mean</b>		<b>2%</b>	<b>3%</b>	<b>28%</b>

<b>Digital Signage</b>				
NEC	\$42.26	0%	(6%)	42%
Cree	52.11	25%	(10%)	22%
Acuity Brands	134.92	11%	4%	17%
AU Optronics	0.27	5%	9%	(34%)
Leyard	1.02	5%	15%	(9%)
Unilumin	1.33	7%	24%	15%
EPISTAR	0.78	5%	10%	(7%)
Everlight	0.93	5%	6%	(4%)
Daktronics	7.71	7%	30%	4%
Dialight	4.43	5%	2%	(13%)
LSI	5.00	12%	22%	58%
<b>Digital Signage Median</b>		<b>5%</b>	<b>9%</b>	<b>4%</b>
<b>Digital Signage Mean</b>		<b>8%</b>	<b>10%</b>	<b>8%</b>

## LTM Indexed Stock Performance

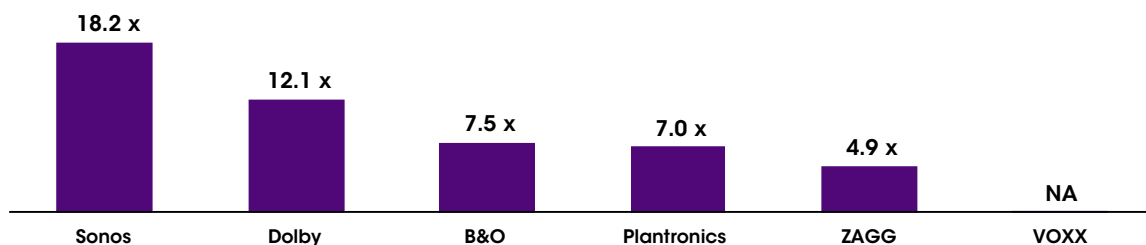


Source: Capital IQ as of September 16, 2019, Bloomberg and Wall Street Research.

# EV / 2019E EBITDA

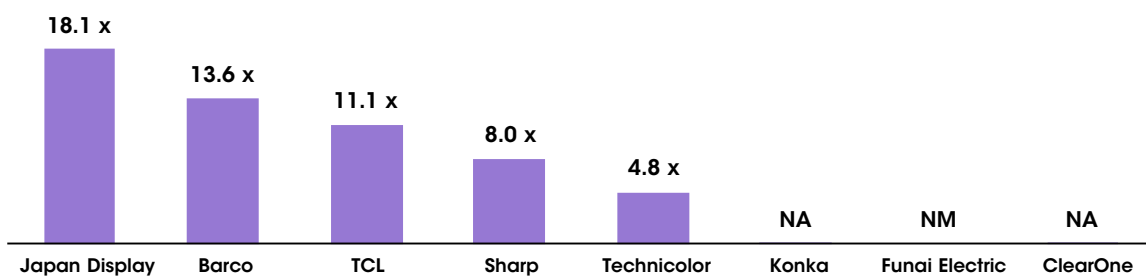
## Audio

Median: 7.5 x



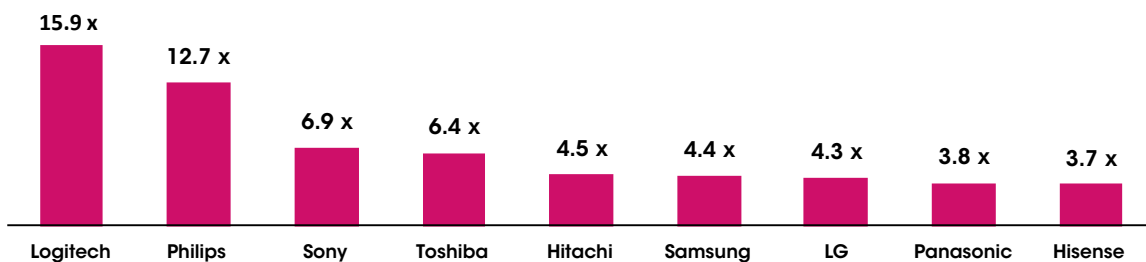
## Visual

Median: 11.1 x



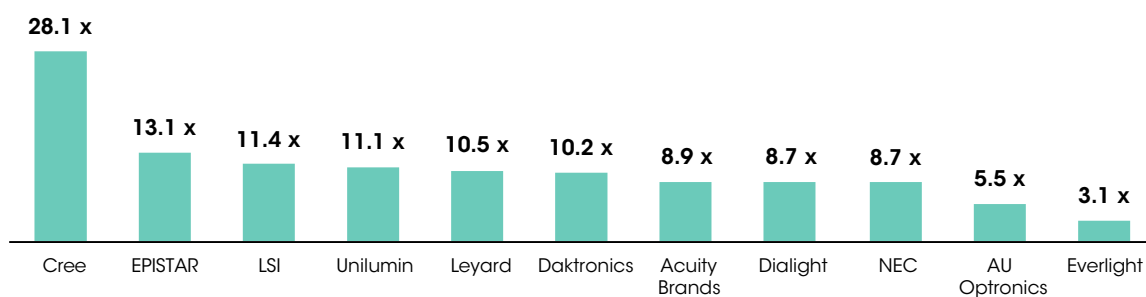
## Diversified AV

Median: 4.5 x



## Digital Signage

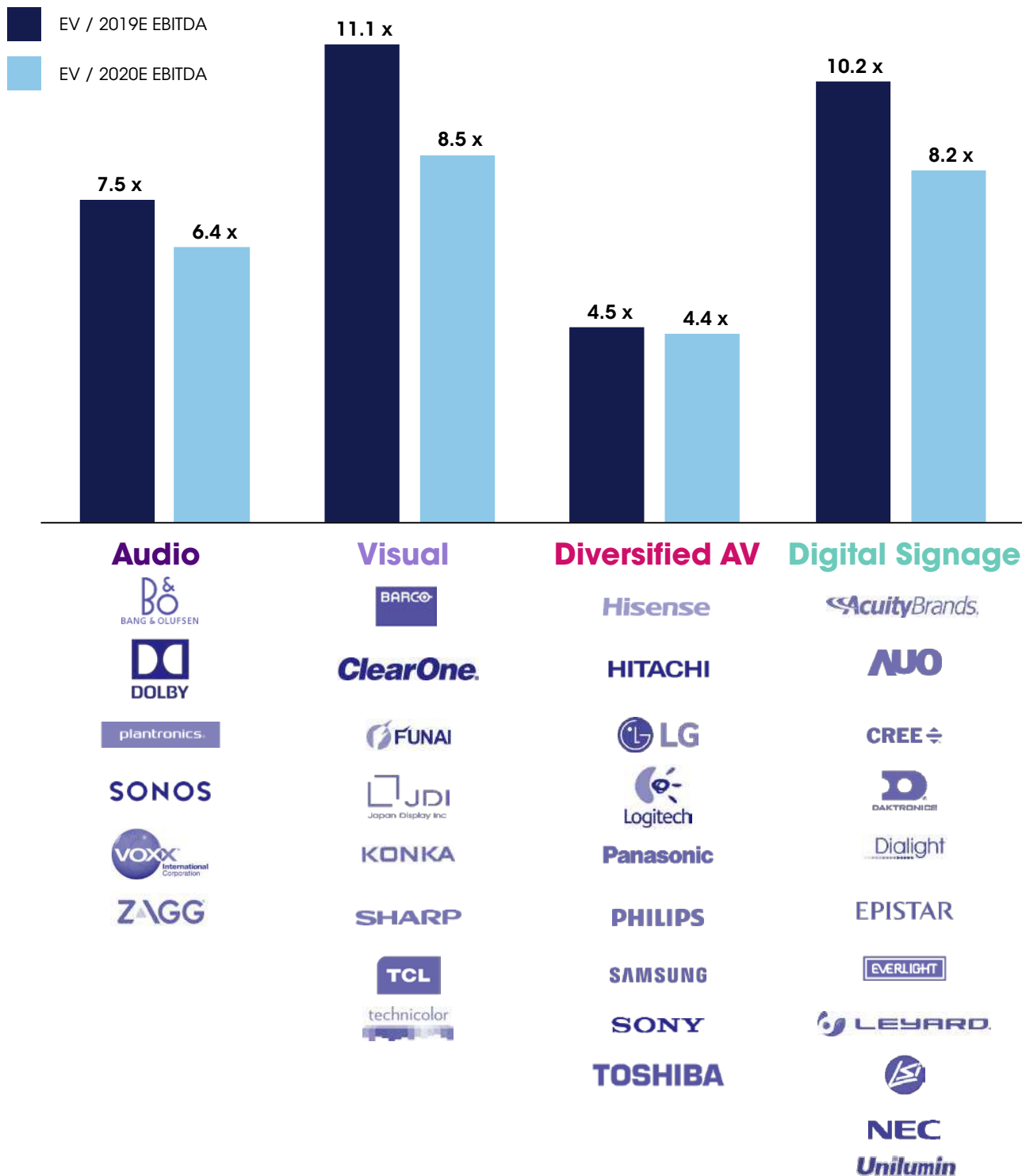
Median: 10.2 x



Source: Capital IQ as of September 16, 2019, Bloomberg and Wall Street Research.

# Valuation Summary

Current market trading multiples

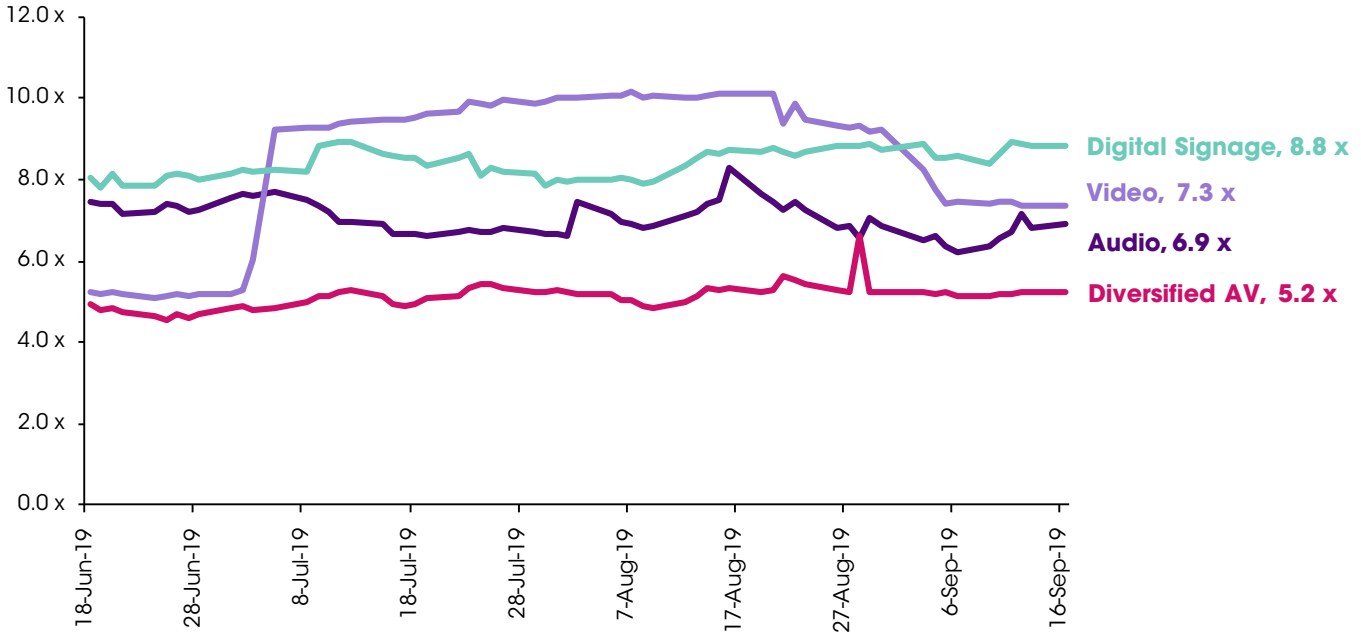


Source: Capital IQ as of September 16, 2019.

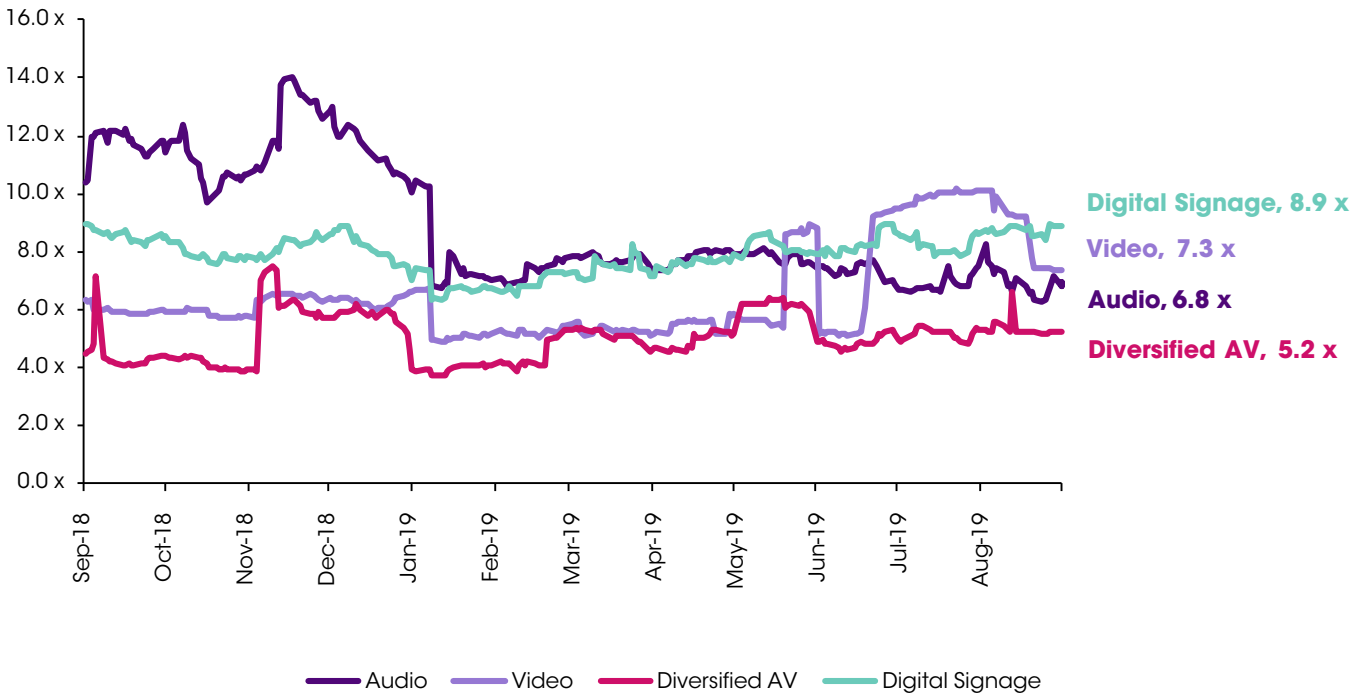


# Valuation Summary (Cont.)

EV / CY + 1 EBITDA Last Three Months



EV / CY + 1 EBITDA Last Twelve Months



Source: Capital IQ as of September 16, 2019.

# Valuation Metrics

(\$ in Millions, Except Per Share Values)

	Stock Price 9/16/19	52-Week Low	52-Week High	Equity Value	Enterprise Value	Valuation Multiples		Growth	
						EV / Revenue CY2019	EV / EBITDA CY2019	'17A - '19E CAGR Revenue	EBITDA
<b>Audio</b>									
Dolby	\$64.47	\$57.38	\$71.58	\$6,497	\$5,665	4.5 x	12.1 x	7%	12%
Plantronics	37.09	26.45	61.90	1,408	2,844	1.5 x	7.0 x	52%	70%
Sonos	15.19	9.58	16.04	1,615	1,317	1.0 x	18.2 x	9%	52%
B&O	6.44	5.62	24.03	263	201	0.5 x	7.5 x	(10%)	28%
ZAGG	6.59	5.42	15.80	192	274	0.5 x	4.9 x	1%	(5%)
VOXX	4.89	3.50	5.76	118	60	NA	NA	NA	NA
Audio Median						1.0 x	7.5 x	7%	28%
Audio Mean						1.6 x	10.0 x	12%	31%
<b>Visual</b>									
TCL	\$0.52	\$0.33	\$0.66	\$6,834	\$16,612	1.6 x	11.1 x	(22%)	(0%)
Sharp	11.71	8.84	21.52	7,151	12,275	0.5 x	8.0 x	4%	(4%)
Barco	199.49	108.23	215.88	2,488	2,200	1.9 x	13.6 x	(5%)	14%
Konka	0.64	0.46	0.90	1,294	3,416	NA	NA	NA	NA
Japan Display	0.62	0.46	1.23	525	2,066	0.4 x	18.1 x	(11%)	(53%)
Technicolor	0.87	0.77	1.47	361	1,470	0.3 x	4.8 x	(9%)	(6%)
Funai Electric	5.14	4.52	7.56	175	(95)	NM	NM	(13%)	NM
ClearOne	2.10	1.18	2.44	35	30	NA	NA	NA	NA
Visual Median						0.5 x	11.1 x	(10%)	(4%)
Visual Mean						0.9 x	11.1 x	(9%)	(10%)
<b>Diversified AV</b>									
Samsung	\$39.77	\$33.39	\$42.68	\$264,613	\$205,389	1.1 x	4.4 x	(7%)	(19%)
Sony	60.50	41.80	61.38	74,661	76,070	0.9 x	6.9 x	3%	(0%)
Philips	47.42	33.19	48.30	42,643	47,365	2.2 x	12.7 x	(0%)	14%
Hitachi	38.35	25.33	38.68	37,054	49,935	0.6 x	4.5 x	1%	8%
Panasonic	8.40	7.54	12.13	19,593	22,354	0.3 x	3.8 x	4%	2%
Toshiba	31.84	26.22	35.05	15,260	12,969	0.4 x	6.4 x	(2%)	(55%)
LG	55.90	48.84	70.35	9,501	17,681	0.3 x	4.3 x	(4%)	2%
Logitech	41.73	29.45	47.00	6,946	6,359	2.2 x	15.9 x	8%	21%
Hisense	1.25	1.05	1.87	1,629	712	0.1 x	3.7 x	1%	3%
Diversified AV Median						0.6 x	4.5 x	1%	2%
Diversified AV Mean						0.9 x	7.0 x	0%	(3%)
<b>Digital Signage</b>									
NEC	\$41.69	\$26.84	\$44.95	\$10,827	\$16,182	0.6 x	8.7 x	4%	12%
Cree	52.15	33.72	68.50	5,533	4,956	4.9 x	28.1 x	(5%)	42%
Acuity Brands	138.43	105.80	165.06	5,468	5,491	1.4 x	8.9 x	5%	1%
AU Optronics	0.27	0.22	0.43	2,639	3,838	0.4 x	5.5 x	(11%)	(48%)
Leyard	1.05	0.88	1.49	2,653	2,742	2.1 x	10.5 x	13%	6%
Unilumin	1.37	0.94	1.92	1,266	1,303	1.6 x	11.1 x	33%	37%
EPISTAR	0.78	0.67	1.16	840	800	1.5 x	13.1 x	(20%)	(51%)
Everlight	0.93	0.84	1.06	413	283	0.4 x	3.1 x	(15%)	(15%)
Daktronics	7.81	5.86	9.03	351	318	0.5 x	10.2 x	(1%)	(10%)
Dialight	4.41	3.61	7.25	143	168	0.8 x	8.7 x	(7%)	8%
LSI	4.84	2.51	4.84	126	165	0.5 x	11.4 x	(1%)	(12%)
Digital Signage Median						0.8 x	10.2 x	(1%)	1%
Digital Signage Mean						1.3 x	10.9 x	(1%)	(3%)

Source: Capital IQ as of September 16, 2019 and Wall Street Research.

# Upcoming Events

Dates	Name	Location	Description
September 29 – October 3, 2019	BICSI Fall Conference & Exhibition	Las Vegas, NV	<ul style="list-style-type: none"> <li>Learn about the latest trends in ICT on topics like Power over Ethernet (PoE), Intelligent Buildings, Smart Cities, Internet of Things (IoT), Data Centers, Optical Fiber &amp; Passive Optical Networks (PON) and more</li> </ul>
October 14-18, 2019	New York Digital Signage Week	New York, NY	<ul style="list-style-type: none"> <li>Will include events for retail, employee communications, digital OOH and digital signage</li> <li>Includes DPAA's Video Everywhere Global Summit on October 15 and the DailyDOOH Investor Conference on October 16</li> <li><b>PJ SOLOMON's Mark Boidman and Ben Zinder to participate</b></li> </ul>
October 15	<b>PJ SOLOMON OOH + AV Cocktail Party</b>	New York, NY	<ul style="list-style-type: none"> <li><b>Join PJ SOLOMON from 6:30 – 8:00pm at our office (1345 Avenue of the Americas, New York, NY 10105) for a night focused on OOH and AV</b></li> </ul>
October 16-19, 2019	AES New York Pro Audio Convention	New York, NY	<ul style="list-style-type: none"> <li>147<sup>th</sup> annual convention which covers studio recording, home recording, music production and more</li> </ul>
October 23-25, 2019	Tecno Multimedia InfoComm Colombia	Bogota, Colombia	<ul style="list-style-type: none"> <li>AVIXA's flagship Audio, Video, Lighting, Home Automation, Network Voice and Data conference held in the region</li> <li>Dozens of keynote speakers and exhibitors</li> </ul>
November 5-7, 2019	AV Executive Conference	New Orleans, LA	<ul style="list-style-type: none"> <li>AVIXA hosts 200 executives from integration firms, design consultancies and live event companies</li> <li>Presents initiatives for strategic guidance on how to grow business and deepen relationships with partners and peers</li> <li><b>Mark Boidman and Ben Zinder will be attending this conference</b></li> </ul>
November 18-22, 2019	IAAPA Attractions Expo	Orlando, FL	<ul style="list-style-type: none"> <li>Largest international trade show for the amusements and attractions industry</li> <li>Features 1,000 exhibitors, over 570,000 net square feet of exhibit space, and more than 35,000 participants</li> </ul>

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