



# CEPro

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## 2024 State of the Industry & Tech Trends to Watch



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## **Increasing Dealer Diversification Offers Commercial Appeal**

*CE Pro's* annual State of the Industry study finds integrators earn median of \$1.1 million in revenues from a 68%/32% residential/commercial split; growth of 9.1% predicted for 2024.

***By Arlen Schweiger***

It's no coincidence that last year Emerald introduced the co-located Commercial Integrator Expo into the mix as an inaugural co-located tradeshow with the annual CEDIA Expo. While the commercial market took a hit during the pandemic and thereafter struggled as corporate offices became more sparsely populated due to hybrid workplaces, the situation is steadily returning to pre-Covid times when light commercial/resimercial emerged as strong opportunities for residential dealers.

That was one of the key themes revealed in *CE Pro's* annual State of the Industry study, in which surveyed integrators reported median revenues of \$1,107,143 that were split between two-thirds earnings from residential work and one-third commercial jobs. That adds up to a solid \$350K coming from commercial work in addition to the roughly \$750K from residential projects, factoring installation, labor, and service revenues for each market.

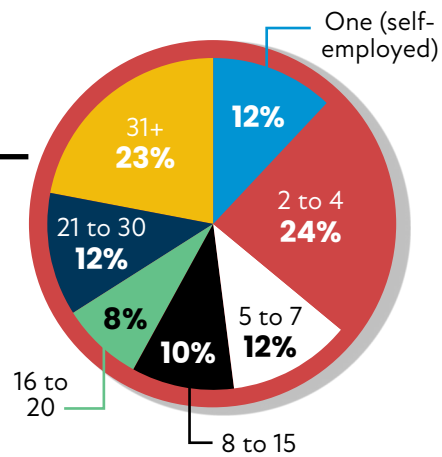
It also represents a dip from 74% to 68% in terms of percentage of revenue generated from bread-and-butter residential projects. On the commercial/resimercial side, custom integrators are also branching out in their vertical market diversification. Retail and government jobs gained traction last year, for instance, and the percentage of dealers doing commercial work increased by 13%, including 9% in new construction commercial jobs.

CEDIA is seeing similar success in the encroachment of commercial on the scope of the custom channel. In the association’s biannual Market Research Analysis survey, conducted by Anchrage Consulting in affiliation with Butler University’s Lacy School of Business and released in December, the resi/commercial split was 78%/22%, but that represented a 5% dip in residential from their previous study.

In that resimercial area straddling both sectors, the multidwelling unit (MDU) market has also proven to be a fruitful one for custom integrators as 33% engage in these jobs, which is a solid 7% surge compared with 2022.

### Number of Employees

Integration companies slightly bolstered their forces in 2023, with the median personnel at 12.5, slightly up from last year’s 11 employees. That being said, the biggest increase came in 2 to 4 employees, which increased 9%.



## FAST FACTS

**\$1,107,143**

Median integrators total gross revenue in 2023

**30**

Median number of residential installations in 2023

**\$20,357**

Median residential installation price in 2023

**\$19,167**

Median number of commercial installations in 2023

**9.1%**

Percentage predicted revenue increase in 2024

**41%**

Percentage of CE pros with retail or appointment-only showrooms

**12.5**

Median number of employees per integration company

**22%**

Percentage of recurring revenues derived from service contracts in 2023

## Integrators Express Optimistic Outlook for 2024

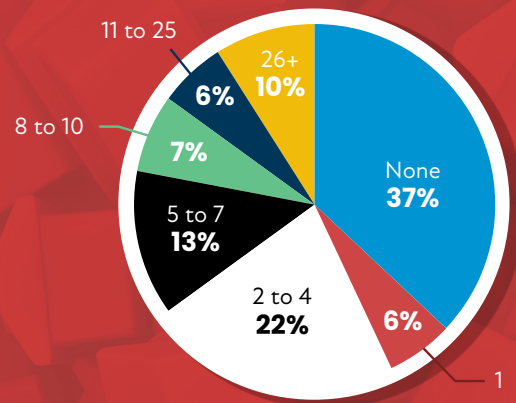
Judging from the studies by both *CE Pro* and CEDIA (whose data was augmented by info from D-Tools and Portal), it's safe to say the custom integration industry is robust and thriving. CEDIA estimates the industry comprises 20,000 integration companies that drive a \$29 billion U.S. market — up from \$20.1 billion in its previous report that was released in April 2022.

And despite the uncertainties of 2024 — including the economic climate, ongoing conflicts in Europe and the Middle East, and a big elections cycle — integrators are predicting continued high times in general this year. Overall, custom integrators expect to increase revenues by a healthy median of 9.1% in 2024.

While nearly one-quarter of dealers (23%) anticipate growth to be flat this year, nearly 1 in 5 (19%) are forecasting incredible revenue growth of greater than 31%, according to the *CE Pro* study. A near quarter of integrators (23%) predict revenue increases between 11% and 30%, while another 23% are anticipating growth up to 10% this year.

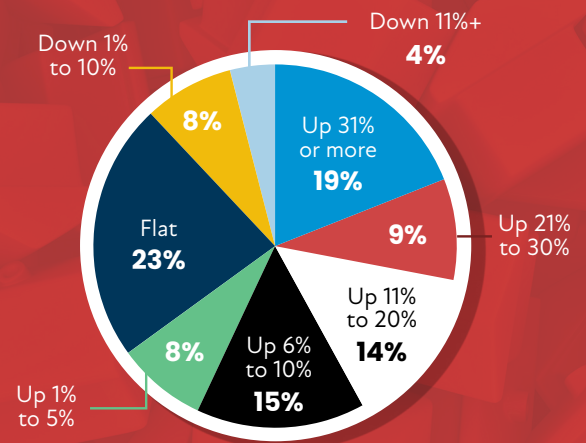
Meanwhile, CEDIA's numbers are similarly rosy for 2024. Revenue growth forecast by company size is 9% for integration firms that earn \$14+ million; 24% for those earning \$1M to \$4M; and a whopping 33% for integrators with less than \$1 million in annual revenue.

## 2023 Incomplete Projects Due to Supply Chain



The supply chain remains an ongoing issue, but not nearly to the extent of 2022. A solid 37% of dealers say there was no impact at all, a big improvement over last year's just 15% of projects without at least some disruption.

## 2024 Revenue Outlook



Overall, integrators expect to increase revenues by a median of 9.1% in 2024. Nearly a quarter of dealers (23%) anticipate growth to be flat in 2024.



Integrators cite the economy and workforce situations as the biggest challenges they are facing in 2024. Economic slowdown is the leading concern, ahead of rising labor costs, inflation, labor shortage, and unprofessionalism in the industry.

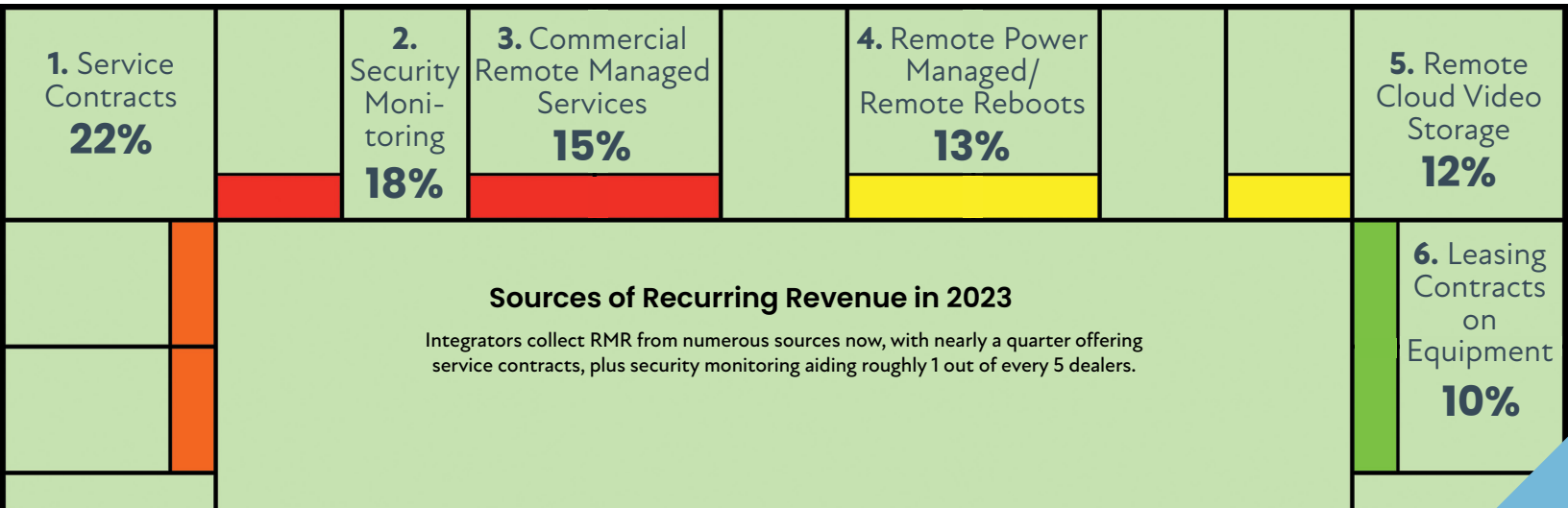
### Project & Personnel Size Show Efficient Production

The breadth of integrator sizes and project scopes represented in the *CE Pro* and CEDIA surveys is a wide one. CEDIA survey respondents ranged from businesses that earned less than \$100,000 to those that raked in more than \$40 million in revenues, with a median of \$900,000 — which aligns fairly well with *CE Pro*'s \$1.1 million figure previously mentioned.

When it comes to the size of companies producing these revenues, *CE Pro* found the median integrator has 12.5 employees, a shade above last year's 11 reported. However, more than-one third of companies (36%) are either one-man shops (12%) or just have up to four employees (24%), while on the other end of this bell curve spectrum there's a similar percentage of dealers with 21-30 employees (12%) and more than 30 on staff (23%).

**Residential work's former monopoly on integrators' revenues continues to decline in lieu of more commercial projects.**

CEDIA's Market Research Analysis found the average number of integration company employees is 11; half (51%) have five or fewer, and 14% employ more than 20. So taking a look at production per employee, dividing revenues by CEDIA's average integrator personnel and *CE Pro*'s median equates to roughly \$81.8K and \$88.5K revenue generated per employee, respectively.



## 2023 Residential Revenue by Type of Structure



**46.5%**

Remodeling/  
Retrofit



**53.5%**

New  
Construction

New construction projects ticked up a few percentage points last year vs. retrofit.

## 2023 Sources of Revenue by Market



**68%**  
(\$752,857)

Residential Home  
Systems

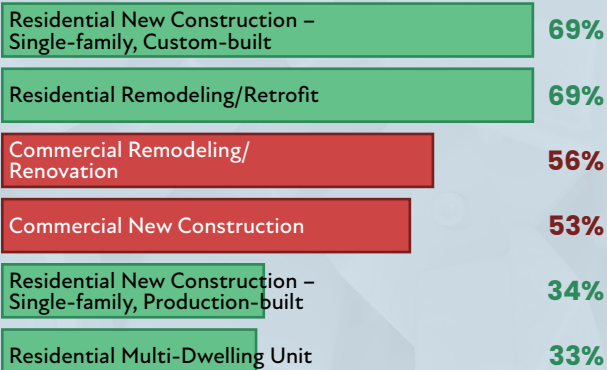
**32%**  
(\$354,285)

Commercial Projects

The data from this year indicates a rebound in commercial work, as evident here where residential systems saw a decline from 74% to 68% of overall revenues. Percentages include installation and service revenue.

## Types of Projects in 2023

(Percentage of Integrators Working In)



The typical integrator is following the industry trend finding more opportunities in MDU and other commercial work. MDU jobs rose 7% and commercial projects overall increased 13% including 9% in new construction.

Meanwhile, per CEDIA’s report, median (midpoint) project size is estimated to be around \$15,000, taking into account a range of \$12K to \$21K based on sales pipelines and survey data, according to the association. Average project size is between \$20K and \$57K.

In *CE Pro’s* State of the Industry survey, respondents reported a \$20,357 median residential project price in 2023 and \$19,167 median commercial installation price in 2023. Nearly half (48%) fell in the \$20K to \$50K project range, while the biggest gains were actually in smaller systems — the amount of jobs less than \$5,000 spiked 10% from last year up to an eye-opening 23% in 2023.

Whatever size job it is, integrators seem to be profiting well on their work. Per D-Tools data (see sidebar), dealers are earning 48% profit margin on their projects.

## Trending Installation Categories & Service Revenues

The aforementioned median project size includes service revenue, which is another area where integrators are diversifying and improving their bottom line.

In perhaps the most surprising data from CEDIA’s survey, 62% of integrators say the offer service contracts, with larger dealers leading the way in this important revenue generator. It’s something *CE Pro* has been preaching for years as savvy dealers have figured out that recurring revenue flowing in on a monthly, semiannual, or annual basis

provides a financial security blanket amid the ups and downs of project cycles.

Among those companies that do receive RMR for their work, it is being banked from various segments, according to the State of the Industry survey. Dealers report service contacts (22%) as the top method of earning RMR followed closely by previous No. 1, security monitoring (18%), and then commercial remote managed services (15%), remote power managed/remote reboots (13%), remote cloud video storage (12%), and leasing contracts on equipment (10%).

It's also an area in which myriad companies at CEDIA Expo, for instance, continue to develop products and technologies to help facilitate better service revenue opportunities. Remote management and power/energy management systems have proliferated in recent years to enable dealers to stay more connected to their

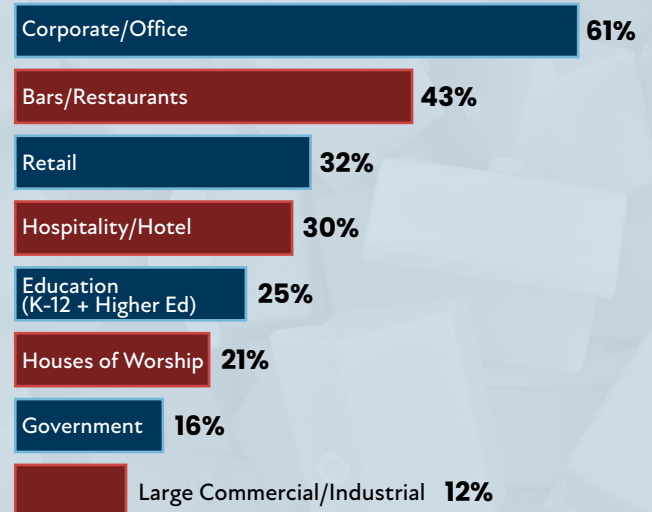
### Top 10 Anticipated Growth Rates by Technology for 2024

(Percentage of Dealers Anticipating 11%-25% Category Growth)

- |   |  |
|---|--|
| 1. Multiroom Audio <b>24%</b>             | 6. Surveillance Cameras <b>16%</b>           |
| 2. Higher-end Control Systems <b>21%</b>  | 7. Video Doorbells/Access Control <b>16%</b> |
| 3. Home Networks/IT <b>21%</b>            | 8. Landscape Lighting <b>15%</b>             |
| 4. Outdoor Installations <b>19%</b>       | 9. Home Theater/Immersive Audio <b>12%</b>   |
| 5. Entry-level Control Systems <b>16%</b> | 10. Lighting Fixtures <b>12%</b>             |

Taking a look at anticipated growth segments of 11% to 25% as a reflection of overall business outlook for 2024, dealers expect more success in tried-and-true categories of multiroom audio and high-end control systems.

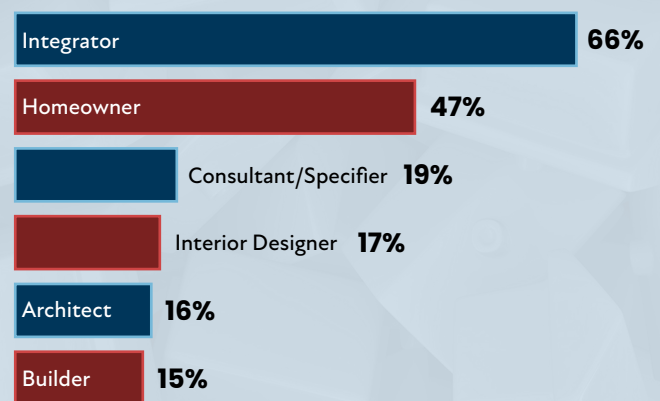
### 2023 Commercial Vertical Markets (Percentage of Integrators Working In)



Corporate office work is by far the most common commercial vertical integrators perform, gaining percentage points last year while bars/restaurants fell by 10%. Retail and government jobs gained traction, while “other” responses include assisted living facilities and small businesses like spas and salons.

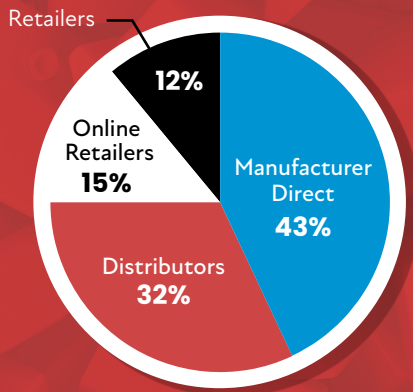


### 2023 Influence on Brand Selection (“A Great Deal” of Say on Projects)



Integrators have the biggest influence on the final product selection, but the decision-making process can be a “gray area” in which often dealers narrow down the options to compatible products before letting others make the final selection.

## 2023 Purchasing Sources



Dealers leaned more on their manufacturers and distributors in 2023, as those percentages climbed 7% and 2%, respectively.

## Top 10 Biggest Challenges for 2024

1. Economy Slowdown **20%**
2. Rising Labor Costs **13%**
3. Inflation **12%**
4. Labor Shortage **11%**
5. Unprofessionalism/Trunkslammers Hurting Industry Reputation **11%**
6. DIY Products **11%**
7. Supply Chain **7%**
8. Manufacturer Consolidation/Fewer Product Choices **7%**
9. Electricians Encroaching in Custom Electronics **5%**
10. Security Dealers Encroaching **1%**

Economic uncertainty and continued inflation are perceived to be the top challenges in the year ahead, but the labor shortage and unprofessionalism remain problematic.

customers, for instance. Additionally, more dealers are collaborating with lighting designers and lighting fixture providers to drive potential revenue from design services — a portion of projects that’s always been tough to charge separately.

Speaking of products and solutions, for this year’s forecasted trending categories, *CE Pro* looked at where integrators anticipated growth of 11% to 25% this year. Through that expected growth lens, the top growth categories are multiroom audio (24%), higher-end control systems (21%), home networks/IT (21%), and outdoor installations (19%). Lighting fixtures and security (surveillance cameras, video doorbells, access control) also ranked in the top 10.

While there is a concern about industry unprofessionalism as noted, that hasn’t stopped customers from trusting their integrators’ expertise and opinions for their home technologies. Dealers report having “a great deal” of influence on the final decision-making essentially two-thirds (66%) of the time. That’s about 20% more sway than homeowners and roughly 40% more than other trades such as designers, architects, specifiers, and builders. ▲

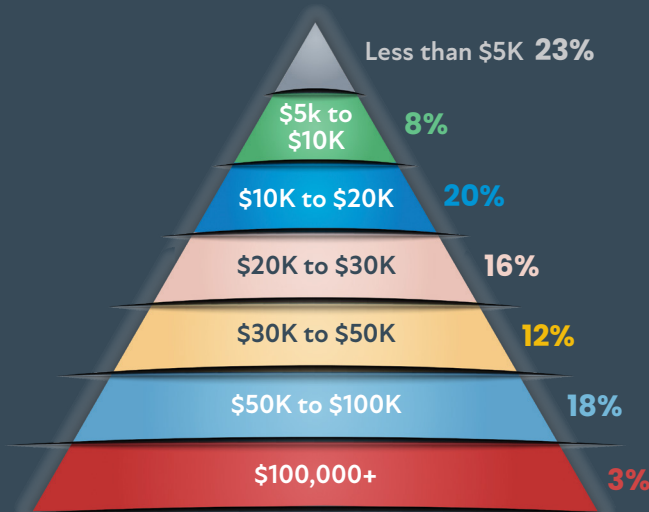
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—CEDIA Market Research Analysis survey

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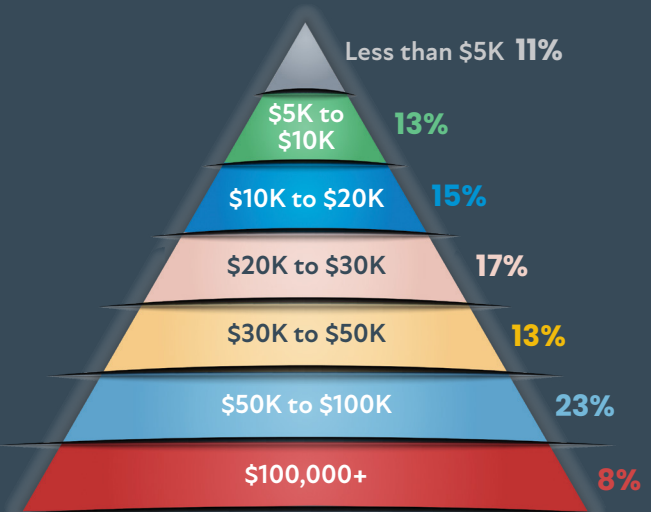


## 2023 Average Residential Project Size



In 2023, integrators sold 10% more projects of less than \$5K than the previous year. Nearly half (48%) fell in the \$20K to \$50K range. Median job size is \$20,357.

## 2023 Average Commercial Project Size



In 2023, the median commercial project price point was \$19,167.

## D-Tools Data Analyzes Profit Margins: How Do Yours Compare?

The blurring of the lines among residential, commercial, and security integration businesses continues to become more muddled, and that softening of the boundaries is readily apparent based on new data from D-Tools.

Data from more than 900 commercial, residential and security integrators who sold and installed systems in the first nine months of 2023 using D-Tools Cloud Software-as-a-Service (SaaS) end-to-end business management solution, shows profit margins remain strong in three disciplines, albeit with some somewhat subtle differences.

Among the key differences in the actual data taken from projects sold between January 1, 2023, through October 31, 2023, are:

- Commercial projects are on average 37% larger than residential projects in terms of revenues.
- Residential integrators on average earn slightly higher profit margins from both products and labor than their commercial counterparts, and substantially higher profit margins than security-centric integration companies.
- Both commercial integration and residential smart home integration companies are much more reliant on earning revenues from the equipment they install than security integrators.
- Overall, integrators report earning 48% profit margin on their projects, whether those are

commercial or residential applications. More specifically, dealers earned an average of 43% profit margin on the product portion of the job, and 55% profit on their labor.

Examining the residential sector, for the first nine months of 2023, integration companies had a similar product-versus-labor blend as their commercial brethren. They derived an average of 77% of their residential installation revenues from product sales and 23% from labor. The average residential project price was \$14,360.

Looking at profit margin specifically, residential integration companies earned on average 48% profit margin on their installations for the first nine months of 2023. That means dealers pocketed an average of \$6,893 in profit per project.

Breaking that profit margin down by product versus labor, residential integration companies earned an average 45% profit on the products they installed, and 57% profit on their labor — both higher percentages than commercial projects.

Not surprisingly, when residential integrators take on commercial installations, they tend to be smaller projects than those performed by conventional commercial integration firms.

The data shows that the average commercial project performed by a residential integrator was \$16,231. That is 18% lower than the average commercial project done by a commercial dealer, but still 13% larger than the average resi project. So, it appears it is still attractive for a residential dealer to tackle commercial projects when the application arises.

The starkest contrast among the three types of integration companies from which data was derived is the much slimmer profit margins for labor in the field of security. For the first nine months of 2023, self-identified security integration companies derived an average of 53% of their installation revenue from product sales and 47% from labor, both respectable percentages.

However, the margins from both aspects of the installation were lower than both the residential custom electronics/smart home space and the commercial AV/integration arena.

According to the D-Tools data, security-based companies earned on average a strong 50% profit on the products they installed, and just 33% profit on their labor. These percentages indicate the difference in the security business model that can sometimes call for subsidized labor, especially among companies that focus on mass-market residential customers.

Overall, security companies report a sturdy 54% profit margin on their installations for the first nine months of 2023. —**Jason Knott, Data Solutions Architect & Evangelist, D-Tools** ▲



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## 2024 Tech Trends to Watch

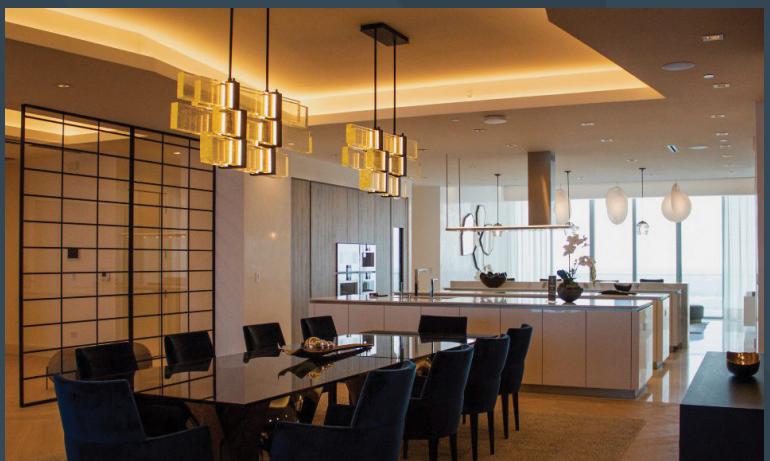
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## TREND #1: 8K Gets Industry Buy-in, but Will Consumers?

Just like previous generations of home video, custom integrators will lead the residential technology market into the world of 8K, but caution persists over content concerns.

**By Robert Archer**

After approximately 60 years of living with the NTSC TV format, which started with black-and-white images on small screens, to 480i/480p DVD resolutions that were the envy of video enthusiasts of the 1990s, recent happenings in the home video market have been fast and furious.

Progressing from 720p/1080i, to 1080p HD video, and into 4K roughly a decade ago, the past few years have seen an increase in the number of 8K televisions that have been made available. The Consumer Technology Association (CTA) helped to kick off the evolution from 4K to 8K back in the fall of 2019 when it announced an 8K display definition and logo program.

(Above) The Sony Bravia line of premium TVs is helping to bring 8K display technology to the home entertainment market.

Today, not quite five years later, popular TV manufacturers including Samsung, Sony, LG, and TCL all offer 8K products at a range of prices. Besides TVs, video walls also offer 8K compatibility on a true, large-screen scale to provide homeowners a choice of hardware options that deliver 8K compatibility.



Samsung's 65-inch Class QN800C Neo QLED 8K Smart TV is another entry into the category by one of the market's biggest suppliers.

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Throwing some perspective into the 8K conversation, John Bishop, president b/a/s/ bishop architectural-entertainment services, says that while manufacturers continue offer a growing selection of 8K products, the public appetite isn't starving for the format just yet.

"I don't think so for a couple of reasons. First, 4K wasn't really demanded when it stood as only a resolution issue, before HDR. Side-by-side demos at Best Buy were unconvincing, but gradually vendors simply stopped making 1080p TVs larger than 55 inches," Bishop points out. "When HDR hit, sales were driven by a visible benefit. In cinema, 2K rooms are still the majority of theaters, as high as 75% still, I believe. There are no resolution debates in cinema exhibition generally, until you get into IMAX and other premium large-format spaces and even then, 2K vs. 4K is only visible in the most forward rows."

Bishop says the lack of native 8K content to some degree handicaps the performance of 8K displays more to upscaling lower-resolution video. But that upscaling process will likely induce data losses that will detract from the quality of the upscaled content. Bringing further bad news for 8K video fans, Bishop estimates the improvement in 8K TV quality could also slow down, and in the projection category, the next-generation format is a long way off.

"I would say there isn't much that will drive 8K TVs to improve by virtue of them having 32 million pixels. Again, dealing with that much data isn't helpful at signal level. Any other improvements would come for 4K and 8K displays alike," Bishop theorizes.

“Projection is not looking at 8K native chips as far as I know, and even cinema exhibition doesn’t feel the need. Like in CE, there is no 8K content support except for special application as in digital signage and microLED displays used in custom art installations for example.”

## **8K Infrastructure & Distribution Products Mature**

That said, with the continuing development of hardware solutions that support 8K content, there is already a significant amount of infrastructure in place already to enable the playback of the next-generation format in American homes.

Brandon White, director of product development for Vanco, points out that as a connectivity provider for luxury residential AV and commercial AV systems, his company has been ahead of the curve to help ensure that whenever 8K content does become readily available, Vanco will have products available to support its dealers.

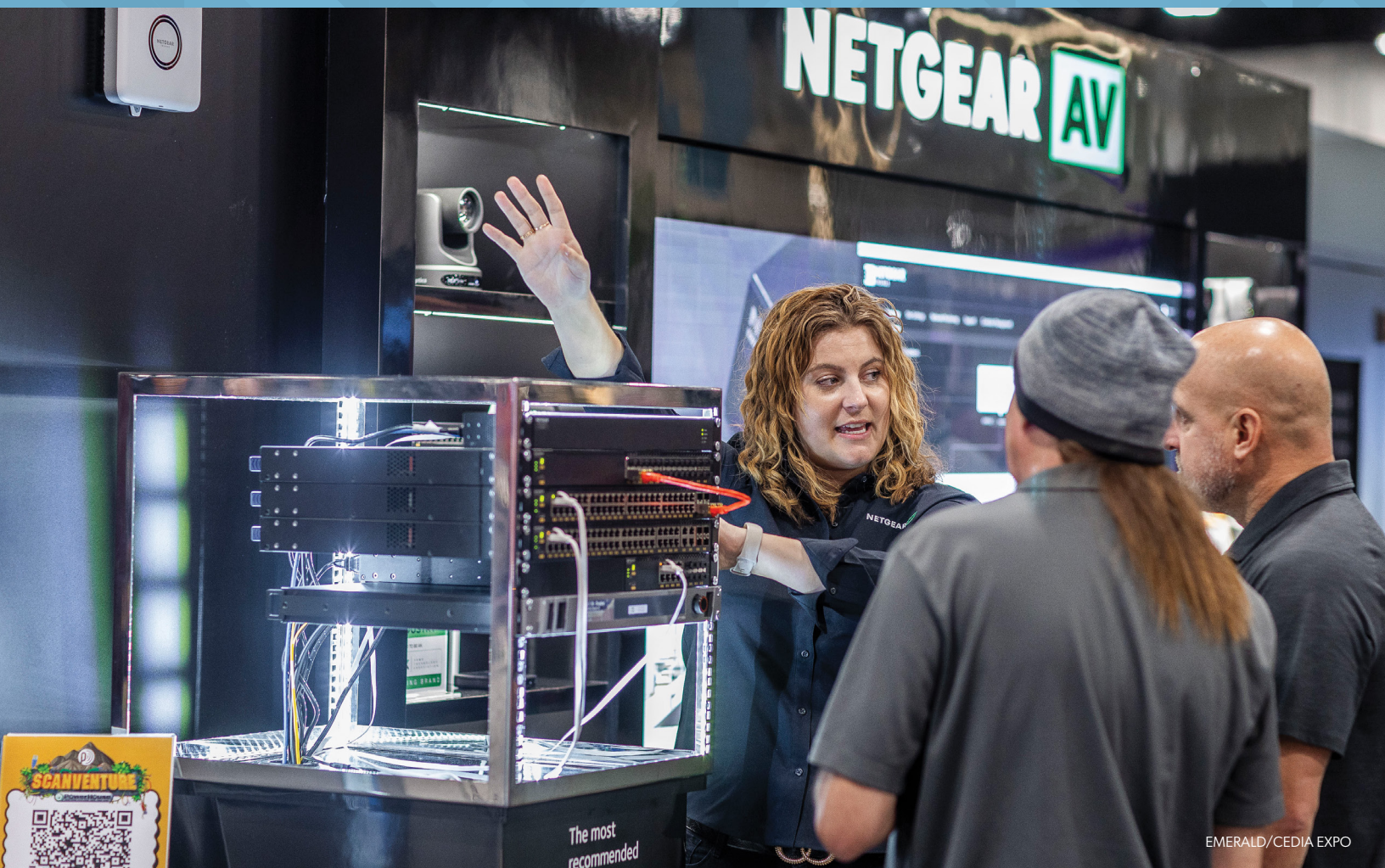
“[Vanco products such as] the HDMI 2X2 Switching Splitter with 8K HDR pass-through splits one source at a time into two displays. With two HDMI inputs, two 8K sources can be switched and split simultaneously,” notes White.

“Vanco [also] brought Ultra High-Speed HDMI Cables to market in 2019 to support resolutions up to 10k. HDMI, as a package, offers a larger pipeline for data to travel down, which helps with resolutions up to 8K and 10K, as well as faster refresh rates. This is particularly important in unique applications such as gaming, for example in eSports, where ultra-high resolution and industry-leading refresh rates are essential to the user experience.”

As the market matures and current trends such as video walls grow in popularity, dealers should expect 8K video walls to emerge in the near future as more viable display solutions for homeowners, White says. As a connectivity company, Vanco closely monitors these trends to make sure that as these they develop, the company is ready to provide dealers legitimate solutions, he adds.

Looking ahead beyond the immediate future of the home technology market, White adds that eventually as the public learns more about next-generation formats like 8K, the more in demand the format could become.

“If commercial market growth is any indication, we expect to see similar trends on the residential side,” estimates White. “The increased adoption of 8K and Ultra HD are key drivers, alongside smart home integration creating more intuitive experiences. End-users are becoming more educated about what their options are. It’s Vanco’s job to have high-quality, high-value. ▲



EMERALD/CEDIA EXPO

## TREND #2: Cybersecurity Levels Up

As the Internet of Things and connected devices become more advanced, the same must go for the solutions that serve to protect owners from bad actors. **By Zachary Comeau**

As the smart home industry grows and new products are released that live on the homeowner's network, enterprise-grade IT networking and security practices are slowly gaining a foothold in smart home ecosystems, and 2024 will continue see more reliable and secure solutions and practices hit the market, experts say.

(Above) As smart home networks become more complex, cybersecurity protections become more important and manufacturers need to address this shift.

Common IT principles such as network segmentation and firewalls should already be a part of every integrator's proposals. With manufacturers producing more advanced networking equipment for the custom channel, integrators now have a larger opportunity to begin selling their own cybersecurity services such as monitoring for malicious traffic.

## Residential Networks Looking More Enterprise-Like

Chris Cory, principal cofounder of residential cybersecurity firm Arsenal Cyber Force, which markets itself as a consultant to integrators and homeowners, says trends in residential networking are beginning to look a lot like commercial networks in their capabilities.

“That’s how large automation companies first started,” Cory says. “It was enterprise first, and then it was brought to the home.” That’s the model Arsenal Cyber Force follows, and that enterprise-grade piece of the equation is one that Snap One’s Access Networks brand has evangelized for years, for example.

Many more wealthy, high-profile clients have relationships with IT professionals to help them manage their home technology, but IT and cybersecurity are very different disciplines in the enterprise space.

Cybersecurity practices common in enterprise networks like segmenting IoT devices from the main network, VLANs, secure gateways and monitoring will all be important in smart home projects going forward, but it’s password security that continues to be the most insecure part of any technology, says Brian Cory, CEO of Arsenal Cyber Force.

In setting up smart home systems, dealers either need their customers’ passwords or set up passwords for them.

## U.S. Cyber Trust Mark Could Boost Protective Measures

The Federal Communications Commission has proposed the Cyber Trust Mark, which should be implemented sometime in 2024.

The voluntary program, first announced in summer 2023, is essentially the cybersecurity equivalent of the ENERGY STAR label. The program aims to certify that consumer IoT devices meet certain cybersecurity standards as outlined by the National Institute of Standards and Technology.

Many in the custom integration industry have signaled their general support for the measure, including manufacturers such as Crestron, Snap One, Samsung, LG and many others.

In addition, CEDIA has officially supported the proposal, calling for the program to consider the role of integrators. In comments written by Darren Reaman, director of government affairs for CEDIA, the organization advocates for the importance of integrators, saying they are the “best solution” for mitigating security risks in IoT systems.

Reaman highlights the growth in IoT and research suggesting that consumers are becoming overwhelmed with the amount of devices on their network.

“In-home integrators that professionally install IoT devices are key in the mitigation of security risks in any consumer’s technology systems and this mitigation is not limited to just IoT devices,” CEDIA states. “When designing, installing, and maintaining technology systems through the home, the homeowner is best protected from security threats by working with qualified integrators throughout the project and the life of the system.”





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“You’ve got to get the customers’ password and all that stuff, but how are dealers safely managing those passwords? Do they have a system to protect them? Because passwords are one of the highest vulnerabilities,” Chris Cory says.

Integrators will also need to continuously look at their own cybersecurity practices, especially if they have the ability to remotely access their customers’ systems. An integrator with high-profile will have to ensure their own robust security protections.

While it either hasn’t happened in the smart home space or isn’t being made public, an easy comparison to draw is to managed service providers in the IT industry who are routinely targets of cyberattacks since they hold the keys to a large amount of enterprise networks.

The same goes for technology management software. In one of the most high-profile cases of a cyber intrusion, IT management software firm SolarWinds had their software compromised in an update, leading to the intrusion of several U.S. agencies and large technology firms by Russian hackers.

### **Educating Clients on Potential Risks**

According to Bjorn Jensen, owner of network specialist WhyReboot, as the custom integration industry became more connected and dealers began deploying devices on the network for remote management capabilities, homeowners began having poor experiences with their consumer-grade networking equipment, typically provided from their Internet service provider.

“Little by little, people have had [terrible] experiences, and they found out it was due to their network,” Jensen says.

With enterprise-grade networking equipment options more available to integrators now, selling cybersecurity services like gateways, sandboxing, content filtering, anti-malware and intrusion prevention should follow. However, many homeowners aren’t demanding it, and integrators aren’t offering it, Jensen notes.

Part of that is due to education, as the custom home integration market typically isn’t very proficient in commercial-grade IT networking and security principles.

“I think a lot of integrators could just do a better job at kind of educating their clients on what the potential threats are,” Jensen says.

**“I think a lot of integrators could just do a better job at kind of educating their clients on what the potential threats are.”**

— Bjorn Jensen, owner,  
WhyReboot

The growth in the networking space and the sheer amount of new products being added to the network will likely encourage more cybersecurity best practices in the industry, Jensen hopes.

“We’ve been pushing this forever,” he says. “it’s a slow adoption, but just like networks were and they continue to grow, I imagine this space is going to grow as well.”

What could also force the smart home industry to get more serious about cybersecurity are the growing geopolitical tensions. Ukraine has been the victim of ongoing cyberattacks against several sectors since the war with Russia began, and researchers have been sounding the alarm on increasing activity from nation state-aligned cyber actors.

While most cyberattacks target critical infrastructure, smart home systems of important politicians or public figures could potentially be targeted, Jensen says.

“If the U.S. goes into an overt war,” he says, “then, we could probably look to see some bad actors just trying to do whatever kind of damage they can do.” ▲



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## TREND #3: Lighting Design Snaps into Focus

With integrators flocking to lighting as a business offering, the execution of design-minded solutions is fast becoming the main differentiator on projects. **By Nick Boever**

The boom in lighting within the CI space has been appropriately occurring at light speed. It is the hot new category, and everything it touches turns to gold ... barring you get the design right.

Yes, designers, architects and homebuilders have come to love how intelligent controls and automation plus various fixture types can impact a client's enjoyment of a space, and homeowners love it, too.

According to a study put out by Lutron last year, 75% of respondents identified that controlling light in their home is the key to a better sleep routine (trending with wellness practices). Meanwhile, 78% said lighting control was essential to creating ambience in the home.

(Above) Circadian lighting programming is becoming more popular, such as what Premium Digital Control & Automation provided for the owners of this Turnberry Ocean Club condo in Sunny Isles, Fla., via Lutron and Control4 systems.

Note, though, amid all the praise of industry lighting, there is still that idea that it is better controlled in service of the design experience. As lighting has become more popular within the CI industry, lighting design has very quickly grown as a main differentiating factor for integrators on projects.



COURTESY OF LEGRAND/VANTAGE

In an example of manufacturers catering to lighting design, Vantage's Fixture Alliance ensures compatibility with its LHUMAN platform.

## Wellness Movement Drives Demand for Better Design

One of the main reasons for this is that people have realized by now how “bad lighting” can impact their experience in a space. But “bad lighting” can mean a variety of things.

Going back to the Lutron survey, 74% of respondents stated that they will not even consider buying a home if they deem it to have poor lighting, in this case defined as natural-feeling lighting.

Just sourcing the right bulbs to provide the right color temperature and spectrum is a challenge, but being able to arrange and organize lighting in a way that best simulates the saturation and coverage of natural light requires some serious design chops.

Beyond this design-by-daylight approach, the concept of positively impacting customers' experience through lighting is one that wholly relies upon lighting design in its execution. Reducing glare, minimizing shadows, providing focus where needed — it's all lighting design, and as sellers of better home experiences have picked up on how important that knowledge is.

“Lighting is a very deep technical subject. It's changing all the time. Lighting designers know how to select the right fixture to provide the right light in the right place,” notes Patrick Laidlaw of AiSPiRE. “It's really easy to choose the wrong fixture and get horrible

results. It's not bright enough, doesn't have the right lens or beam spread, or isn't the right color temperature. ... Lighting designers and specifiers know the questions to ask and will lay it all out so those expensive mistakes don't happen."

### Loads of Resources to Assist Integrators

The problem for a short while has been that lighting design is a very complex topic — and that goes for anyone trying to learn it.

But, if you're not a lighting designer and have no intention of becoming one, there's some good news: you don't have to. Peter Sanford, CEO of Smarter Homes, even suggests integrators to separate themselves from the design side of things.

"Integrators have absolutely no place in the layout and lighting design," Sanford says. "Too much of what they've seen will influence the customer instead of having someone who is well educated in lighting help the customer on that journey."

However, that's a bit of a double-edged sword. The reason why you don't have to worry about it is because it's very easy nowadays to work with a designer or design firm on a project. But for that very reason, that means there's little-to-no excuse in most cases for not using one.



Ever-growing client interest in circadian lighting has highlighted the necessity of good lighting design.

"Lighting designers who specialize in residential projects can be advantageous to an integrator because they know so many of the ins and outs and the breadth of lighting fixtures and components available," adds Gregg Mackell, principal at HLB Lighting.

"They have a lot of experience solving problems. They can make plan B look like it was plan A. They also bring to the project an understanding of what kind of construction issues you can get into and how to solve those problems when they arise ...

"It's important that integrators respect that and give lighting designers professional courtesy," he adds. "Especially since having an integrator on the project presents the advantage of having someone who understands the different technologies and

fixtures we specify and knows how to make them dim very smoothly. We can work together to create different scenes.”

There are also lighting design firms such as Adaptive Design Group, Kaleidolight, Light Can Help You, and Lighting BOSS that have been working within the CI industry for years at this point and have intimate knowledge of how an integrator’s business ticks.

Manufacturers have also done plenty to help ease integrators into the design process, such as Vantage with its Lighting Fixture Alliance having a set of pre-tested fixtures that integrate into its own design software; Crestron with its recently released showroom design tool for dealers; and Lutron new Luxury Experience App to help customers envision potential solutions in their own homes.

The point is, if design isn’t already a focus of your lighting business, start working toward it.

“If there isn’t a lighting designer working on the project, you can still pitch it and outsource it. Tons of integrators outsource lots of things that they sell but don’t necessarily provide,” says Charlie Derk, vice president, Strategy, Legrand Shading & Controls. “I would recommend building a lighting designer network as soon as possible in order to be successful.” ▲



MASTER1305/STOCK.ADOBE.COM

## TREND #4: Live Sports Streaming Curation Poised to Score Points

The custom home integration channel should have their hands all over the challenge of sorting out live sports streaming confusion for customers. **By Zachary Comeau**

At one point or another, the avid sports fan will run into this issue: they simply can't find where to watch the games. With more and more consumers opting to cut the cord and ditch cable, the content streaming economy has exploded with services like Netflix, Hulu, Disney+, Paramount+, Peacock, Apple+, Max, and more. These services have become massive businesses with millions of subscribers, and many of them are taking live sports along for the ride.

However, the live sports streaming landscape is fragmented, and consumers are finding it challenging to simply find out how and where to watch their favorite teams.

(Above) The fragmentation of the live sports streaming market has created an opportunity for integrators to be content curation heroes.

Take, for example, that Thursday Night Football games are now exclusively on Amazon Prime, whereas on Sunday or Monday, NFL games are on a variety of other platforms, including Peacock, Paramount+, Fox Sports, ESPN+, and others. Meanwhile, NBA, MLB, English Premier League soccer, and NHL games, too, are spread across myriad services.

## CEDIA Expo Session Explores Sports Streaming Landscape

Video streaming has reached an all-time high this year, capturing nearly 40% of all television viewers, far exceeding the amount of people viewing broadcast television, says Marc Finer, DEG (Digital Entertainment Group) senior advisor, citing Nielsen research.

Finer, moderating a CEDIA Expo 2023 panel on live sports streaming, says while these factors are leading to an explosion in services, the content streaming market is very fragmented, and the number of video services in the average household is peaking around four.

“So, all these options are making the process of discovering, accessing, and managing content more and more challenging,” Finer says, adding that this is leading to subscriber churn and the bottom lines for some of these platforms.

According to Finer, half of the respondents to a recent Deloitte survey said they missed a game they wanted to see because they couldn't find it on the right streaming platform.

**“So, all these options are making the process of discovering, accessing, and managing content more and more challenging.”**

— Marc Finer, senior advisor, DEG (Digital Entertainment Group)

The panel featured Rob Stecklow, senior vice president of marketing, sports & news at Paramount+, and Brian Gilmore, vice president of Peacock and digital programming at NBC Sports, both of whom agreed that figuring out where to watch games can be confusing.

According to Stecklow, Paramount+ even put together an internal slide that shows all the ways NFL fans can watch games. The service will stream Super Bowl 58 as part of CBS' coverage in February.

“There's a lot of education that fans need even just from the leagues,” Stecklow says, noting some of that education is simply designed to make people aware that the platform even exists.

Even more challenging is marketing, as streaming services affiliated with networks like NBC and CBS are relatively new.

Currently, Paramount+ carries college sports including March Madness, the PGA Tour, The Masters, some NFL games on local CBS stations, and a wide variety of European soccer.



However, Peacock also carries NFL games on local NBC stations as well as each Sunday Night Football game, plus Premier League soccer, a variety of college sports and more. In addition, the service has live streamed the Olympic Games twice and the Summer Games are on tap again in 2024.

And, each streaming service comes with different levels of plans that provide access to different tiers of content.

Your clients have likely mentioned many of the same questions to you after installing a home theater system or new LED TV and sound system in their living room.

Tom Doherty, director of new technology initiatives at Home Technology Specialists of America (HTSA), says the lack of a clear portal makes it challenging to find the event on the right platform. "It's a lot of hit and miss," he says, commenting on his own experience.

### **How CE Pros & Streaming Services Can Partner**

Walt Zerbe, senior director of technology and standards for CEDIA, says this fragmentation of live sports streaming can have a negative effect on an integration firm.

Essentially, the job of home technology integrators is to make systems easier for people to use, but the inability to quickly and easily find live sports could create end-user headaches.

## **Streaming Platforms Further Consolidating & Bundling**

Major streaming service providers have signaled an increased willingness to collaborate with competitors in recent months to help customers save money while continuing to consume content. It's helpful for integrators to stay up to date on these happenings so they can help when customers have questions.

Telecommunications giant Verizon is now offering a bundled package of Netflix and Max for \$10 per month. The ad-supported services from the platforms are offered for members of Verizon's myPlan and represents 40% in savings compared to subscribing to each service separately.

According to Verizon, the ad-supported Netflix and Max bundle is among ten \$10 monthly offerings available to the company's myPlan customers, including Apple TV+, and +play credits to save on more streaming and content, Walmart+, TravelPass and more.

Now, Verizon customers can get two content bundles with myPlan perks, including this newly announced bundle and the Disney Bundle that includes ad-free Disney+ and ad-supported versions of Hulu and ESPN+.

Disney has also rolled out Hulu on Disney+, merging the two platforms Disney owns to help streamline the user experience. However, Hulu + Live TV and Premium add-ons will still only be available in the standalone Hulu app, which Disney says is not being replaced with the bundled app.

Disney+, Hulu and ESPN+ have been offered as a bundle with standalone apps since 2019 for all three or just two apps. Plans range from \$9.99 a month for ad-supported versions of Disney+ and Hulu to \$24.99 a month for ad-free versions of Hulu and Disney+ and the ad-supported version of ESPN+.

Other streaming providers, such as Apple and Paramount Global, were also rumored to be discussing a bundled package, but as of December 2023, nothing had been announced.



During CEDIA Expo 2023, the topic was the central focus of a panel session moderated by DEG's Marc Finer featuring (left to right) Rob Stecklow, senior vice president of marketing, sports & news at Paramount+; Brian Gilmore, vice president of Peacock and digital programming at NBC Sports; HTSA's Tom Doherty; and CEDIA's Walt Zerbe.

"We're still going to deliver the hardware, but we have to get more involved in the streaming service and be maybe more of a concierge service to help people," Zerbe says, suggesting that integrators interview their clients about what sports they want to watch so they can help set them up with the right services and program their user interfaces to access the appropriate service with ease.

Live sports streaming is a challenge acknowledged by the very platforms that play in the space, and there are solutions being discussed, such as another app. But again, it's just another app that consumers must navigate.

Instead, integrators can act as a concierge and curator of sorts, educating customers about which streaming platforms are hosting which sporting events, and so forth.

Where integrators can come in is by providing excellent audio and video to deliver these live sports experiences, Doherty and Zerbe say. Essentially, integrators need to be educated about the range of audio and video performance so systems can be optimized for it. They also need GUIs that are designed well and can interface with the hardware being installed.

However, Stecklow admits that engineers are typically not designing the platform with the high-end home entertainment market in mind. In short, streaming services need more technical information from integrators about what exactly they require. Perhaps the most impactful work an integrator can do to help improve the quality of streaming services is in networking, as most of the negative feedback streaming platforms get is around connection quality, Zerbe suggests.

Integrators could also help boost their recurring revenue programs with content concierge services, helping customers discover where to watch their favorite sporting events.

According to Zerbe, this would be no different than offering contracts for upgrades and system refreshes.

“In fact, it’s probably a more frequent touch point than you’re going to have with your customer than anything else you do,” Zerbe says. “Why wouldn’t you want to have a great relationship with your customer and say, “Hey, do you know this new sports service is available? I can get this set up for you.” ▲

**“We’re still going to deliver the hardware, but we have to get more involved in the streaming service and be maybe more of a concierge service to help people.”**

— Walt Zerbe, senior director of technology and standards, CEDIA



KUNAKORN/STOCK.ADOBE.COM

## **TREND #5: AI Is A-OK for Assisting Dealer Operations**

Enlisting Artificial Intelligence tools and resources can help custom integrators become more proficient and efficient in their daily business practices. **By Arlen Schweiger**

Artificial Intelligence, or more commonly, AI, is the future and everyone knows it. There are already applications pervading society, such as ChatGPT, that we see being used every day.

Where it will be implemented in the smart home industry is evolving every day. In terms of product technologies, the electronic/smart security market has been the first sector to truly benefit from AI particularly in video surveillance cameras (see sidebar).

As for 2024, we couldn't help but address how AI might impact the custom integration industry. Because in technology we are very much in the Wild West of AI's maturity, for our purposes in 2024 let's focus on how AI can immediately aid integration companies in enhancing their processes and business operations.

For that speculation, CE Pro turned to Ron Callis, co-founder and CEO of One Firefly, a marketing specialist whose client base consists of integrators seeking to improve their digital presence.

“We’re already implementing AI at One Firefly, and we’re putting defined processes in place to continue implementing it into the business next year and beyond. One of the neat things we’re doing with AI is using Fathom to record meetings and create AI summaries from them,” Callis enthuses.

“Fathom is incredibly helpful to have during client discovery meetings, because we’re able to create a record of relevant conversations in the clients’ own words to use during website and campaign production. We’re saving time and our meetings are more productive now. Our paid advertising team uses Shape to monitor the ad spend on our clients’ Google Ad campaigns and adjust the budget as needed to maintain good pacing throughout the month.”

Callis adds that One Firefly’s content team utilizes MarketMuse and NeuronWriter to produce more relevant content for clients targeted around SEO topics and keyword strategies. Sales and marketing uses generative imagery tools like Adobe Firefly and DALL-E to more quickly find high-quality imagery for industry presentations and webinars.

“We’re slowly and methodically working on implementing AI into every facet of One Firefly,” he says. “We have even bigger plans in the works for [2024]. As part of our AI approach, we’ve created an internal AI Council to guide research, innovation, and implementation of new AI tools and processes.”

### **Learning ChatGPT Is Like Taking AI 101**

In the coming months, he explains, the Council will analyze the company’s products and services, then prioritize them to receive AI optimizations based on strengths/weaknesses and biggest opportunity areas for improving the quality or efficiency of a product.

“Anyone can use AI technology on their own. But these tools — like any tool — are only effective if the operator knows when and how to wield them,” Callis says. “My advice to integrators who want to apply AI tools and methods on their own is start at the foundational level: ChatGPT. Get really good at prompt engineering in ChatGPT to help you generate email replies, copy for social media posts, project proposals, responses to challenging customer service issues, content for service and maintenance plans, etc.

“And train the tool to understand your voice, culture, and audience so that all the content you’re producing for the applications listed above align with your brand and messaging,” Callis adds. “Simply using the tools isn’t going to be very effective — the key is to customize, refine, and train AI tools like ChatGPT to speak on your behalf. That’s when you’ll start to

save time and energy, while producing elevated communications and messaging.”

AI is coming for every area of business — sales, marketing, HR, hiring, onboarding, training, and more. For example, Callis says, HR and hiring managers can use ChatGPT to help create job descriptions and functions for every role in the company.

“That’s a powerful and immediate way to use AI to help solve problems and aid growth. Another example is using an LLM to help create system summaries for project proposals faster and more efficiently,” he says.

“Specific applications will look different in every business. I recommend that all businesses develop a systematic approach to guide the investigation and implementation of AI tools within the business. At One Firefly, we’ve formed an AI Council to lead those efforts across every area of our organization. Experimentation and keeping an open mind are key to finding the most beneficial and exciting applications of AI — not everything will end up being a home run, but many things will, and you’ll learn a lot along the way. ”

The reality, he says, is that employees are going to use AI tools regardless, and pretty soon they’ll be integrated in daily work flows — like Copilot in Microsoft platforms and Duet AI in Google Workspace platforms. It’s better for businesses to have a company policy and structured approach to use, training, and application in place.

## AXIS Communications Stays Ahead of Security Market AI Curve



COURTESY OF AXIS COMMUNICATIONS

AXIS Communications recently unveiled a slew of new additions to its video surveillance portfolio, exemplifying how the global provider is leveraging AI. This includes the AXIS P37 Panoramic Camera Series, AXIS Q18 Bullet Camera Series and AXIS P3268-SLVE Dome Camera, all of which will come equipped with a deep learning processing unit (DLPU), the Swedish company stated before last November’s ISC East in New York City.

AXIS states that the DLPU eliminates the need for expensive servers and allows for a faster and more scalable system when installing. AI helps enable the cameras to run metadata and AXIS Object Analytics streams on multiple channels to detect and classify people and vehicles, for instance, entering a user-defined area.

The company also announced it will be updating its Objects Analytics in conjunction with the release of its deep-learning video cameras. The updates include a new Crossline feature that counts objects that cross a virtual tripwire in a defined direction and Occupancy feature that allows the user to define an area to count selected objects, providing an estimate of occupancy levels in real-time.

AI is advancing so fast that it's hard to imagine what these tools will look like six months from now, much less 12 months, Callis notes.

"Sundar Pichai, Google's CEO, has called AI the most profound technology, more profound than fire or electricity. And I think we'll see profound changes at all levels of business and society in 2024 due to AI," he says. "I encourage integrators to continue to pay attention. And don't fear AI — understand it. Turn your fear into curiosity, and your curiosity into results, to help you grow." ▲



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