

entertainment **m**erchants **a**ssociation

2018 ANNUAL REPORT

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Technology and innovation have transformed home entertainment in more ways than any of us could have imagined 40 years ago, when the first videocassette rentals came on the market. No longer bound by network schedules, consumers had their first taste of choice: they could watch their favorite movies on demand, whenever they wanted to.

Today, there are more choices than ever. Consumers can watch their movies and TV programs at home, on giant TVs, or on the go, on tablets or smartphones. They can game on consoles or over the Internet.

For those who prefer to purchase and own the latest motion picture and television content, options abound. They can buy new movies on physical discs for the best possible viewing experience, particularly on the dazzling new 4k Ultra HD format – or they can buy digital copies and keep them safely stored in their own Movies Anywhere “locker.”

For those who just want to watch movies and television shows, they can rent digitally as well as physically, with a vast assortment of content available for viewing on the Internet, thanks to a broad spectrum of retailers, as well as on disc, courtesy of a still-growing army of Redbox kiosks and thousands of remaining video rental stores.

The surge in subscription streaming continues to revolutionize (and from a business-model perspective, challenge) home video, with its appealing all-you-

Welcome to the Entertainment Merchants Association's 2018 annual report on the business of home entertainment.

can-watch buffet of movies, TV shows, and a growing roster of high-quality original content. Consumers spent an astonishing \$14.6

billion on subscription streaming in 2017, according to IHS Markit data – a 46% jump from the prior year. And a Deloitte study released in March 2018 shows that 55% of U.S. households now subscribe to at least one video streaming service, a 450% increase since 2009.

This proliferation of platforms and devices, and shift from physical to digital, is mirrored on the video game side of the business, which in the United States alone generated a record \$36 billion in revenue in 2017, up 18% from 2016, according to data from the Entertainment Software Association (ESA) and The NPD Group.

This report provides a comprehensive overview of the home entertainment business and closely examines the home video, video game, and retail components. In the following pages you will read about the proliferation of delivery options in both video and gaming, the surge in streaming and the push toward original content, the changing face of retail, and the latest on new technologies like VR.

The Entertainment Merchants Association is proud to represent an outstanding group of retailers, distributors, content providers, service and technology companies, and others involved in bringing entertainment, both passive and interactive, directly to the consumer.

Mark Fisher

President and CEO
Entertainment Merchants Association

Overview

The home entertainment industry turned 40 in 2017. It was in 1977 that a Detroit businessman named Andre Blay licensed 50 movies from 20th Century Fox and released them on videocassette under the Magnetic Video banner. He offered them for sale to the public through a direct-mail sales operation he named Video Club of America, and ran ads in TV Guide.

VCR prices had just dropped below \$1,000, and a feeding frenzy ensued. Blay's club, spurred by interest in films like "The Sound of Music," "Patton," and especially "The French Connection," quickly grew to more than 9,000 members, and by the end of the year he had sold upwards of 250,000 videocassettes.

Within three years, most major studios were releasing their own films on videocassette, but their attempts to sell them at prices as high as \$75 were trumped by savvy entrepreneurs who were buying cassettes and then renting them to the public for a few dollars a day. The first video rental store is believed to have been operated by George Atkinson in Los Angeles. Atkinson charged \$50 for an annual membership, which provided the opportunity to rent videos for \$10 a day.

The studios tried to clamp down on rentals by placing restrictive warning labels on cassettes, and even presented the issue to Congress for resolution through a series of bills that would have made the rental of prerecorded copyrighted videotapes an infringement of copyright law. Video rental dealers protested, citing the so-called "first sale"

provision to the Copyright Act of 1976, which gives the owner of a copyrighted work the right to "distribute copies of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending." And none of the bills ever made it into law.

The video rental business soared throughout the 1980s and early 1990s. At one point there were more than 50,000 separate video rental stores, most of them independents, generating billions of dollars from consumer rentals. Over time, the indies were gobbled up by fast-growing chains like Erol's and National, although ultimately an outfit out of Texas called Blockbuster Video would conquer much of the country with its ubiquitous blue-and-yellow motif and "Make It a Blockbuster Night" tagline.

All the while, studios kept their eye on "sellthrough," the concept of selling movies directly to consumers. Videos were sold to retailers for upwards of \$100 each, and then re-priced to \$30 or \$20 six months later for sale to the public. But sales were modest until the 1997 launch of DVD. The DVD's size was more compact, the picture and sound were better, but most importantly the price was low. With the DVD, studios took square aim at the sellthrough business by pricing movies at \$20 or \$30 out of the gate, not six months down the road.

The DVD was successful beyond anyone's wildest expectations. For nearly ten years, the DVD powered the sellthrough business to record heights – with studios striking up direct sales deals with big national chains like Best Buy, Target, and

Walmart, and consumers switching from renting movies for the night to buying them. Meanwhile, the videocassette rental business was in a state of decline. Blockbuster and other retailers cut "revenue-sharing" deals with the studios so they could bring in more copies of the hits at a lower price and then share the spoils with the studios on the back end, satisfying more customers.

But with consumers now able to buy movies at an affordable price, the DVD sellthrough business flourished. By 2004 consumer spending on DVDs hit \$15.5 billion, a whopping 33% gain from the year before.

Eventually, however, the novelty wore off – just as it had, in the early 1990s with video rental. And with the advent of high-definition TVs studios realized they needed a high-definition disc to compete. Unfortunately, two competing formats came to market, and while Blu-ray Disc ultimately trounced HD-DVD, consumer confusion – as well as reluctance by movie collectors to rebuy their home libraries – stifled disc sales growth.

Adding to the slowdown in disc sales was the emergence of digital delivery options. Consumers had become accustomed to buying their music over the Internet – so why not movies? Then, in 2007, Netflix augmented its discs-by-mail business by offering its subscribers the chance to "stream" movies and TV shows over the Internet – and, as they say, the die was cast.

Today's home entertainment business is no longer dominated by a single format or business model – or a single device, for that matter. Streaming is in the lead, but disc sales – both DVD and Blu-ray

Disc – remain an important component, as is rental, both disc and digital. So, too, are digital sales of movies, spurred by early release windows. And whereas consumers once watched movies and other filmed content exclusively on their TVs, thanks to Internet connectivity content today is consumed on a variety of devices, including PCs, smartphones, and tablets.

Accordingly, the definition of home entertainment has changed. It's no longer just physical content consumers bring into their homes. Home entertainment today encompasses the entire spectrum of personalized, on-demand content delivery – any business involved in bringing entertainment to the consumer, from the traditional transactional model to Netflix and its fellow OTT streaming services and, down the road, premium video-on-demand (PVOD).

Content

Home entertainment spending in 2017 came in at an estimated \$25.3 billion, up 17.6% from 2016, according to figures compiled by IHS Markit.

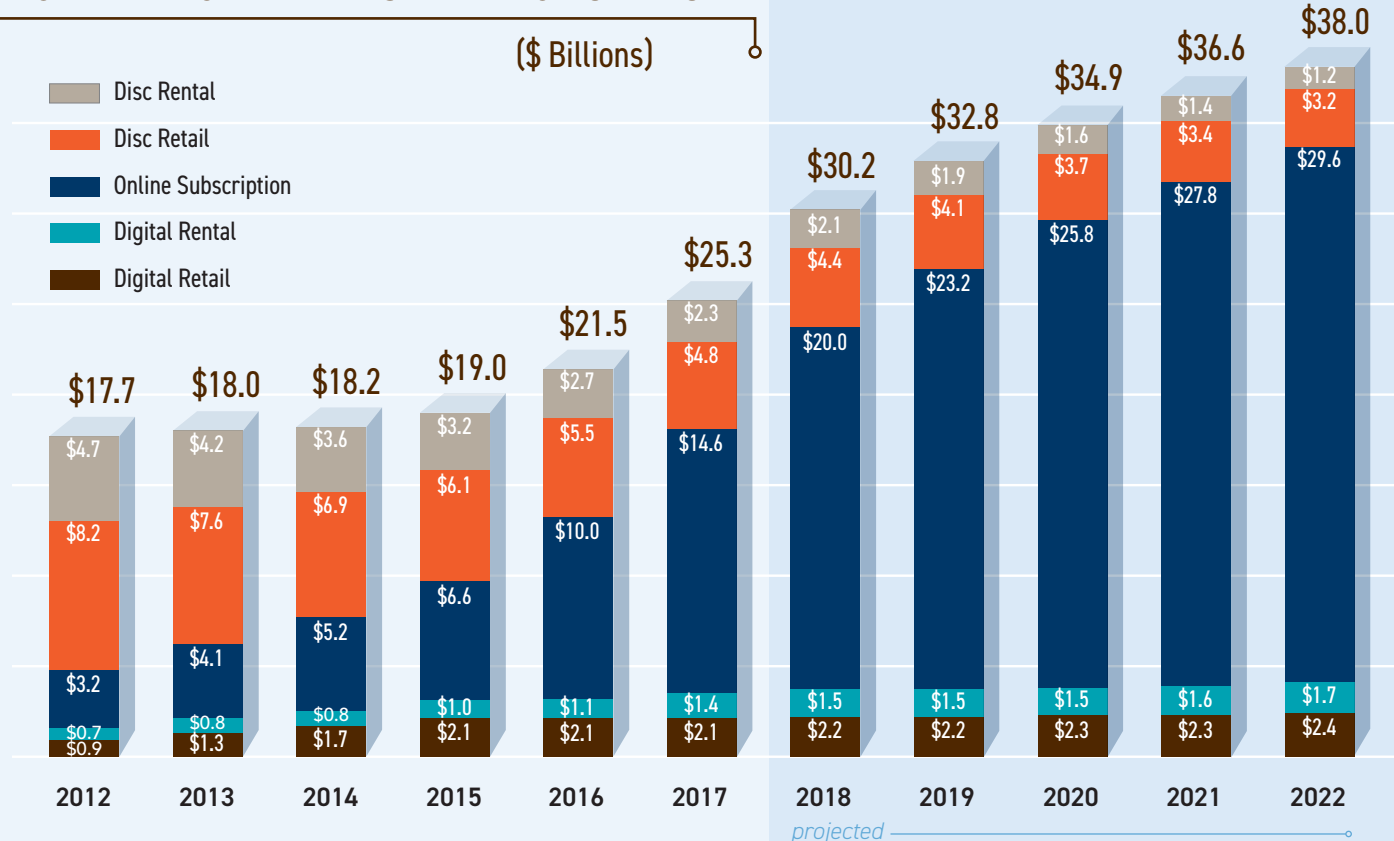
As expected, the gains came largely on the digital side, with total digital spending up 37% to \$18.1 billion – but with a caveat.

The majority of digital spending growth came from subscription streaming, or subscription video-on-demand (SVOD), with consumer spending spiking 46% to an estimated \$14.6 billion – although IHS Market cautions that one reason for the big jump is that it is now including a broader spectrum of OTT services, including Amazon Prime, whereas in the past the streaming revenue figure was based primarily on Netflix.

For the third consecutive year, digital spending has outpaced spending on physical media. Total digital spending came in at an estimated \$18.1 billion, or more than 70% of total consumer home entertainment spending. In 2016 digital spending came in at an estimated \$13.2 billion, 61% of the total home entertainment spend of \$21.5 billion.

Digital spending is dominated by SVOD, whose growth is fueled by so-called “cord cutters,” consumers who are pushing back on the high cost of traditional cable and satellite service by canceling their subscriptions. A March 2018 report from Leichtman Research Group (LRG) says the largest U.S. pay TV providers lost nearly 1.5 million net subscriptions in 2017, almost twice as many as they lost in 2016.

HOME VIDEO MARKET SPENDING 2012-2022



PHYSICAL DISCS

IHS Markit estimates that consumer spending on DVDs and Blu-ray Discs continued to drop in 2017, coming in at \$7.1 billion – down 13% from 2016.

But while disc sales may be down, the format is far from out. While worldwide disc sales are expected to shrink to \$9.1 billion by 2020 – from \$18 billion in 2016, the latest year for which estimates are available, according to Futuresource Consulting – that's still a significant amount of revenue and suggests packaged media will continue to live alongside streaming media.

Among the best-selling titles overall for 2017 were: "Moana" (Walt Disney Studios); "Rogue One: A Star

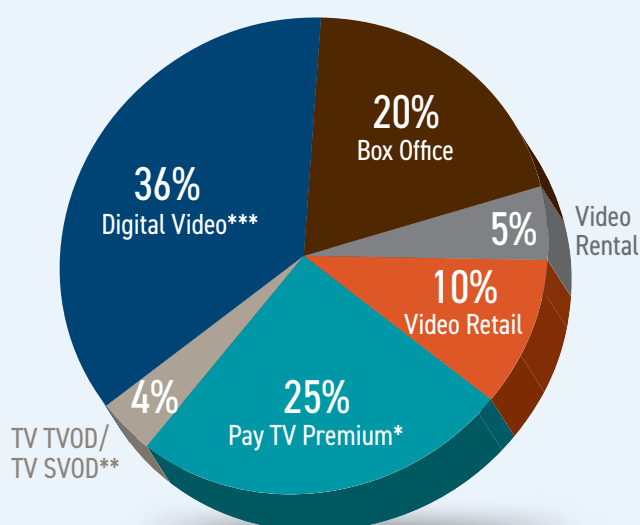
Wars Story" (Walt Disney Studios); "Beauty and the Beast" (Walt Disney Studios); "Wonder Woman" (Warner Bros. Home Entertainment); "Trolls" (DreamWorks Animation, Twentieth Century Fox Home Entertainment); "Sing" (Universal Pictures Home Entertainment); "Guardians of the Galaxy Vol. 2" (Walt Disney Studios); "Fantastic Beasts and Where to Find Them" (Warner Bros. Home Entertainment); "Logan" (Twentieth Century Fox Home Entertainment); and "Doctor Strange" (Walt Disney Studios).

Experts also agree that, outside of theaters, Blu-ray Disc remains the optimum way to watch movies or other programs in terms of picture and sound quality. Streaming can provide nearly as good a picture

and sound as Blu-ray Disc, but only if the bandwidth is available. During times of high viewing demand, and in regions of the country where bandwidth is still limited, streaming viewers still have to contend with lower quality – sometimes even lower than that of the VHS videocassette.

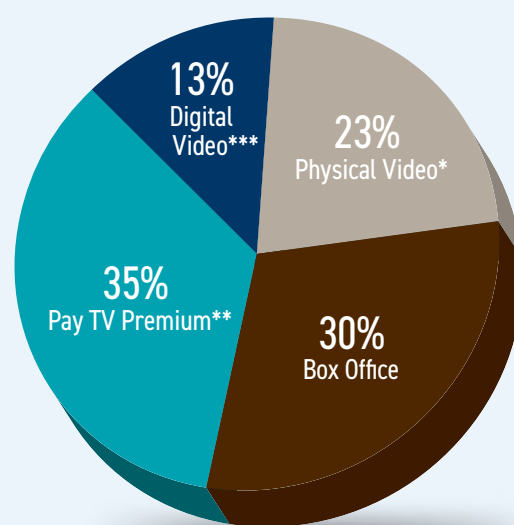
The steady decline in disc sales also is being driven largely by DVD, which unlike Blu-ray Disc is not a high-definition format. The IHS Markit does not break out numbers, but observers believe the drop in Blu-ray Disc sales is much smaller than the overall disc-spending decline. Indeed, as recently as the first nine months of 2016, Blu-ray Disc sales actually nudged upward by an estimated 8%, according to NPD VideoScan point-of-sale data.

2017 CONSUMER VIDEO SPENDING



Total Spending (\$m) = \$50,310

2017 DISTRIBUTOR VIDEO REVENUES



Total Revenues (\$m) = \$17,462

Notes: *Pay TV Premium includes Cable/IPTV/Satellite.

**Includes cable, satellite, and telco VOD (TV TVOD) as well Pay TV subscription VOD (TV SVOD).

***Digital Video includes Digital rental (iVOD), Digital retail (EST), and Digital Subscription (SVOD).

Source: IHS Markit

Notes: *Physical Video includes disc retail and disc rental.

**Pay TV Premium includes Cable/IPTV/Satellite.

***Digital Video includes Digital rental (iVOD) and Digital retail (EST).

Source: IHS Markit

4K ULTRA HD BLU-RAY DISCS

The decline in disc sales also may be mitigated by the arrival of the 4K Ultra HD Blu-ray Disc, which came to market in 2016. Initial sales outpaced those of Blu-ray Disc a decade earlier, according to estimates from DEG: The Digital Entertainment Group.

And by the end of 2017, the number of 4K Ultra HD titles in the market had grown to 267 titles, representing some \$147 million in sales – a growth rate of 187% over the prior year.

4K Ultra HD Blu-ray Discs also include high dynamic range (HDR), which gives them even sharper pictures and more realistic colors than standard high-definition – and an even greater edge over the limitations of streaming

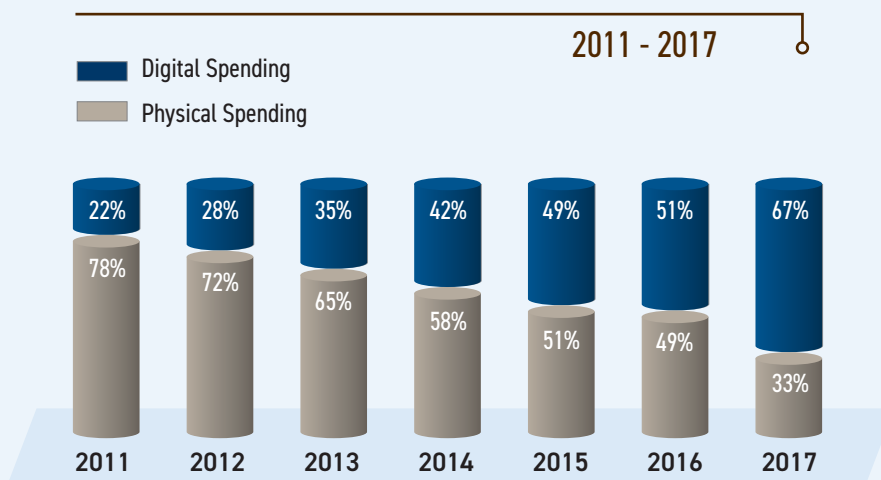
"We can expect to see the number of 4K UHD Blu-ray titles to expand considerably in 2018, as content companies continue to release new and catalog titles in the premium format," Universal Pictures Home Entertainment president Eddie Cunningham told Media Play News in January 2018. "As well, 4K movies, TVs and players are selling units in record numbers. There is a clear groundswell around consumer demand and the industry is highly optimistic about the format's future prospects."

DISC RENTAL

With the growing popularity of streaming, the traditional video rental business continues to suffer even more drastically than disc sell-through. According to IHS Markit's year-end 2017 report, total consumer spending on video rental dropped 15% in 2017 to \$2.3 billion.

Rentals at brick-and-mortar video rental stores took the biggest hit, dropping 20% in 2017 to an estimated \$390.4 million, according to DEG.

VIDEO SPENDING - PHYSICAL vs. DIGITAL



Based on data from DEG: The Digital Entertainment Group

In 2017, consumer spending on disc rentals at kiosks, a market dominated by Redbox, slipped 16% to an estimated \$1.3 billion, although the decline may be arrested by a rejuvenated push by the Seattle-based vending machine operator to boost its fleet of bright-red rental kiosks. During 2017, Redbox added 1,800 kiosks, bringing the total number up to more than 41,000.

Redbox's fortunes also may be helped by new content deals with Lionsgate, Paramount Pictures, Sony Pictures Home Entertainment, 20th Century Fox, Universal Pictures, and Warner Bros. The deals call for same-day availability of new releases – a big break from the recent past, when Fox, Universal, and Warner imposed a 28-day holdback because they feared rental kiosks outside big disc sellers like Walmart would cannibalize sales.

Subscription disc rentals, the business that got Netflix off the ground two decades ago, also remains a significant business, despite steep and steady declines. DEG estimates that in 2017, subscription disc rental revenue slipped 17%, to \$455 million.

In a January 2018 fourth-quarter earnings release, Netflix revealed it

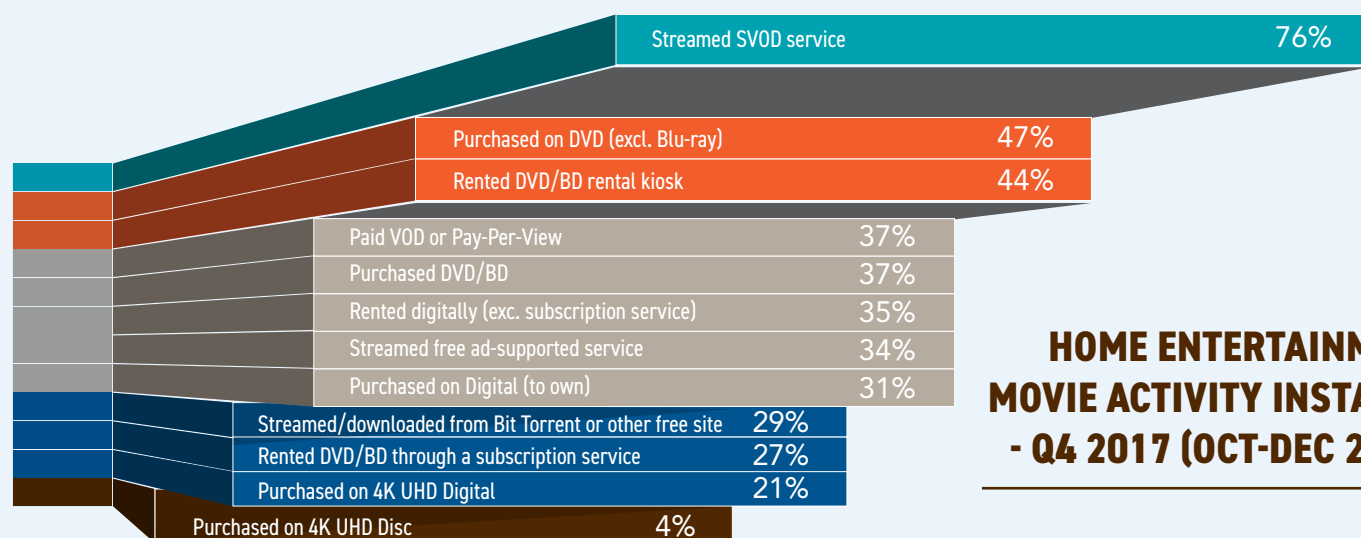
still has about 3.4 million subscribers to its disc-rental-by-mail business – down 186,000 since the third quarter, 731,000 from Q4 2017, and a whopping 16.6 million from its 2010 peak of about 20 million.

The company has 17 DVD distribution hubs around the U.S., down from 50 in mid-2016, and a former employee told CNBC that internal projections see DVD.com, the Netflix division that delivers rental discs by mail, surviving until 2025.

DIGITAL

With two-thirds or more of consumer spending now directed toward the digital delivery of movies, TV shows, and other filmed content, it is clear that a growing number of consumers prefer the ease and simplicity of accessing content over the Internet. This is especially true when this ease of use is also the least expensive way to go, as is the case with subscription streaming, with consumers able to watch as much content as they want for pennies a day.

But there are limitations to streaming, most notably the lack of newly released hit movies, which studios are keeping for transactional sales or rentals, and the lack of catalog breadth.



HOME ENTERTAINMENT MOVIE ACTIVITY INSTANCE - Q4 2017 (OCT-DEC 2017)

Source: Screen Engine

◦ ELECTRONIC SELLTHROUGH (EST)

Electronic sellthrough is the most promising bulwark the studios have against soaring subscription streaming growth, but there are challenges. The chief one is explaining the value proposition. Consumers accustomed to spending around \$10 a month for unlimited Netflix viewing might be hesitant to spend the same amount, or more, for a single movie or TV show, even if they would own it.

The EST market has been flat the past several years. Total spending on digital content sales for 2017 is pegged by IHS Markit at \$2.1 billion, the same as in 2015 and 2016. Notably, the EST market was less than 15% of what consumers spent on Netflix and other streaming services during the year.

Studios for years have given titles an early exclusive release window, with the digital version becoming available up to three weeks before the DVD and Blu-ray Disc. They've also begun offering extra content and special features, previously available only on physical disc.

So far, however, there's been no magic bullet – until the launch last fall of Movies Anywhere, a digital content storage service backed by five of the six majors that observers believe may be the badly needed catalyst to really drive EST.

MOVIES ANYWHERE

Will Movies Anywhere be the spark that finally brings digital movie sales to the masses? The digital movie sales and rights-locker storage service launched in October 2017 with support from five of the six major studios (all but Paramount), four of the biggest online retailers, and an opening library of more than 7,300 movies.

Two months later, at the January CES in Las Vegas, GM Karin Gilford announced that consumers' accounts have accumulated nearly 80 million movies. In March 2018 Gilford updated that figure to 100 million movies.

One reason there's so much optimism for Movies Anywhere is the coalition behind it. The service launched with support from four of the biggest digital retailers, Amazon Video, Google Play, iTunes, and Walmart-owned Vudu, with movies from Disney (including Lucasfilm, Marvel Studios, and Pixar), Sony Pictures, 20th Century Fox Film, Universal Pictures, and Warner Bros. In March 2018, Movies Anywhere added a fifth retailer, FandangoNow, which is available on more than 200 million connected devices.

"It's great to have so many of the major studios and digital retailers participating in a shared entitlement system, which fulfills the promise of making digital ownership easier and more accessible to consumers," Jim Wuthrich, president of the Americas and global strategy for Warner Bros. Home Entertainment, told Media Play News in February 2018. "Because of its wide availability and ease of use, Movies Anywhere has quickly and successfully been adopted by consumers and we look forward to the system's continued growth."

Ease of use is another reason for Movies Anywhere's success. The service is centered on an app, which takes consumers to a simple and visually appealing interface that lets them buy movies – or redeem codes included with Blu-ray Discs – from their selected digital retailer's store with the touch of a finger. Purchased films pop up instantly, and stored in the cloud, are available for immediate viewing on any connected platform, from the phone to the home TV. Movies can also be downloaded for offline viewing when there is no Internet connection available.

◦ **SVOD: SUBSCRIPTION VIDEO-ON-DEMAND, OR SUBSCRIPTION STREAMING**

Subscription streaming, or subscription video-on-demand (SVOD), is home entertainment's dominant force – and undisputable growth engine. The unique over-the-top (OTT) distribution practice, made possible by greater bandwidth, allows streaming content providers to sell their services directly to consumers over the Internet, bypassing traditional cable service providers.

Netflix birthed the business in 2007 as an outgrowth of its popular disc-by-mail rental service, in which consumers could watch as many movies as they want for a monthly subscription price. Moving this model over to the Internet eliminated the costly shipping and handling expenses of mailing physical product. And it appealed not just to movie renters, but also to cable customers who were becoming tired of expensive bundles with hundreds of channels, only a few of which they really wanted.

Netflix got its foot in the door by paying generous prices for movies, and when studios realized streaming was eating into the disc business it was too late. Netflix had a perch from which to grow, and grow it did, shifting focus to TV series and original episodic content when the movie pipeline began to dry up.

In 2017, subscription streaming generated an estimated \$14.6 billion in consumer spending, a 46% jump from the prior year, according to IHS Markit data. The big jump is due in part to IHS Market now factoring in Amazon Prime Video and other OTT service providers, but even a year earlier, when SVOD estimates were primarily Netflix numbers, IHS Markit reported a 52% gain in spending over 2015.

Households worldwide paying for streaming video services exceeds 250 million, according to data from Strategy Analytics released in February 2018. The firm predicts the number of homes paying for SVOD services such as Amazon Prime Video and Netflix will reach about 300 million by the end of 2018 and more than 450 million by 2022.

Strategy Analytics says average monthly household spending on SVOD increased 5% in 2017 to \$9.46, with total number of subscriptions reached 345 million by the end of 2017.

Households paying for streaming video used on average 1.39 services, with the United States having the highest penetration of SVOD, as 59% of households reported using at least one service at the end of 2017.

Parks Associates in November 2017 said there are now more than 200 OTT services in the United States, twice as many as 2014, with 87% of them offering some type of subscription option. In March 2018, Parks Associates said its research finds more than one-third of U.S. broadband households subscribe to multiple OTT video services, including 15% subscribing to three or more.

In March 2018, TiVo revealed that, in a survey of 3,000 individuals during the fourth quarter of 2017, 68.2% of respondents said they use an SVOD service. Also in March, a study from Deloitte revealed that 55% of U.S. households now subscribe to at least one video streaming service, a 450% increase since 2009. The Deloitte study also found that the average streaming video subscriber is paying for three services, resulting in U.S. consumers collectively spending \$2.1 billion per month on SVOD services.

◦ **TVOD: TRANSACTIONAL VIDEO-ON-DEMAND**

Transactional video-on-demand (TVOD) is the a la carte option to the all-you-can-consume buffet that is streaming and is equivalent to digital rental. Instead of paying a monthly subscription fee for unlimited viewing of whatever's available, consumers pay for access to a certain title, which they can then watch within 24 or 48 hours of initiating viewing.

IHS Markit estimates that consumer spending on TVOD grew 27% in 2017 to \$1.4 billion. With Redbox, the leading disc rental service, entering the TVOD market last December with its Redbox On Demand transactional service, the segment's prospects look even brighter for 2018.

In March 2018, new data from TiVo suggests better times may lie ahead for TVOD. A survey of 3,000 respondents found that 37.3% purchased from TVOD services in the fourth quarter of 2017, an increase of 4.6% from Q3. Of these TVOD users, 79.6% said they spend money on a transaction monthly, up 3.1% from Q3 – and 79% watch content on a weekly basis, an increase of 8.7% from the prior year.

◦ **AVOD: ADVERTISING-SUPPORTED VIDEO-ON-DEMAND**

Some OTT service providers look to advertisers rather than subscribers for revenue. YouTube is the best-known, with 1.5 billion monthly active users, according to an October 2017 infographic from Filmora, which specializes in film editing.

Another popular site is Sony Crackle (prior to January 2018, just Crackle), a free, ad-supported video streaming service owned by Sony Pictures Home Entertainment. It offers original web shows, movies, and TV shows, including the series "Damages," "Rescue Me," "Seinfeld," and "The Shield."

Walmart in late 2016 launched a free, ad-supported VOD service, Vudu Movies on Us, that offers high-definition movie and TV titles in 1080p high definition with pre- and mid-roll advertising. The move was triggered by internal research that showed more than half of Walmart shoppers prefer free ad-supported video-on-demand to subscription services.

Hulu used to offer a free ad-supported option to its SVOD service, but discontinued it in August 2016.

◦PVOD: PREMIUM VIDEO-ON-DEMAND

Premium Video-on-Demand (PVOD) generated a big buzz in 2016, as studios began talking about a premium home video window in which movies air shortly after, or even on the same day, they open in theaters. PVOD employs a pay-per-view model that would let consumers pay perhaps \$30 to \$50 per movie to see films three months or more before they would normally become available for home consumption on digital or disc.

An August 2017 report from Morgan Stanley estimates that PVOD could boost studio revenues by \$2 billion annually - with minimal incremental costs. Benjamin Swinburne, who covers media for Morgan Stanley, said, "The desperation level in Hollywood is at new highs and a broader attempt at driving PVOD seems almost inevitable."

This desperation comes, in part, from steadily declining movie-theater admissions and revenues. Bloomberg, citing the latest estimates from Box Office Mojo, in January 2018 reported that 2017 was the worst year for ticket sales since 1992, with admissions dropping from 1.32 billion to 1.24 billion - and domestic box-office revenues falling from \$11.4 billion to \$11.1 billion.



Moana, from Walt Disney Studios, was one of 2017's top-selling home entertainment releases. (Photo courtesy Walt Disney Studios)

Studios also like PVOD because they believe it would reduce piracy, due to the immediate availability of films for home viewing.

And yet resistance from theater owners to PVOD remains high, despite offers of revenue-sharing. Observers say the concession factor is a big reason - movie theaters generate up to 85% of their profits from sales of popcorn, super-sized Cokes and other snacks. In January 2018, Celluloid Junkie reported that AMC Entertainment Group, the nation's largest theater chain, had backed off talks with studios about PVOD. "To date, nobody has found a model that works," the article said, "and to hear [AMC CFO Craig] Ramsey tell it, we shouldn't expect a PVOD breakthrough anytime soon."

Two months later, in March 2018, AMC CEO Adam Aron effectively pronounced PVOD dead. On an earnings call, he said PVOD could only happen if "our shareholders' interests" were fully compensated. AMC is looking at PVOD alternatives with studios to grow the fiscal pie for all parties involved.

ORIGINAL CONTENT

Much like the home video industry in its early days began looking

toward direct-to-video and made-for-video originals to complement its core diet of theatrical movies, digital distributors are on an original-content feeding frenzy.

Fueled by escalating competition in the SVOD arena, service providers are either buying up existing product or producing their own programming, mostly episodic series designed to keep viewers hooked.

Netflix got the proverbial ball rolling five years ago with "House of Cards," the intense political drama that debuted in February 2013. Since then, virtually every digital distributor has been stepping up its original content offerings, with Netflix last year vowing to ultimately air 50% original programming. Netflix released an estimated 126 original series or films in 2016, more than any other network or cable channel. And in March 2018, CEO Reed Hastings said the company will spend \$8 billion on original content this year.

Netflix is hardly alone.

Amazon Prime Video, No. 2 in the subscription streaming arena, is expected to spend \$5 billion on original content this year, according to JPMorgan's Doug Anmuth. In March, Zacks Equity Research said Amazon is "reportedly planning to expand

its reach in India, particularly in the Southern part, by offering original regional content in Tamil and Telugu languages.”

In September 2017, Hulu CEO Mike Hopkins said the streaming service’s content budget for 2017 was around \$2.5 billion. Hulu also won eight Emmy Awards for its original series “The Handmaid’s Tale.”

CBS All Access also has its eye on original programming, with the Hollywood Reporter saying the CBS-owned OTT service is promising six or seven new original programs over the next 12 months. CBS COO Joseph Ianniello, speaking at the Deutsche Bank Media & Telecom Conference, said CBS is “doubling down” on its investments in originals.

YouTube Red and the PlayStation Store also have original content available.

NEW TECHNOLOGIES

◦ARTIFICIAL INTELLIGENCE

Artificial intelligence might not have an impact on what you see on your screen, but it is already influencing what you watch. Artificial intelligence is the ability of a computer program or a machine to mimic human cognition, to “think” and “learn.”

The concept has been glorified in films ranging from “The Terminator” and “Total Recall” to “Blade Runner” and “WarGames,” but in practical terms it has effectively made Hollywood smarter. Fueled by big data and analytics – the discovery, interpretation, and communication of meaningful patterns in data – big entertainment companies like Netflix have built algorithms that predict what you’ll want to watch next.

Venture Beat observed in October 2017, “Netflix’s algorithms are enormously complex, offering selections

based on your viewing history, the time of day, and even the places on your screen that get clicked most frequently when you search for your next binge-watch. When you click through the ‘Because You Watched’ row, a video-to-video similarity algorithm compares everything in the Netflix library. Scrolling through specific genres automatically ranks titles based on a personalized video-ranking algorithm.... Each person’s Netflix landing is unique, and the more you browse, the smarter your personal Netflix robot gets. Netflix’s AI uses your viewing profile data to enhance future suggestions, which helps with retention; the company estimates that its algorithms save over \$1 billion a year by keeping customers hooked. This kind of revenue generation has launched the tech world into a veritable arms race to improve AI functionality, bringing us closer and closer to true artificial intelligence.”

◦ALTERNATE ‘REALITIES’

Virtual reality (VR) and its sister technologies, augmented reality (AR) and mixed reality (MR), are generating the biggest buzz in the world of gaming. With VR, you can fight alongside Batman or drive the Batmobile. With AR, the Batmobile crashes out of your living room wall. VR is more immersive, but AR provides more freedom, largely because it doesn’t require a headset. And MR is a mix of reality and virtual reality, encompassing both augmented reality and augmented virtuality via immersive technology.

At the Sundance Film Festival in January 2018, the New Frontier experimental section – which featured its first VR experience in 2012 – included more than 20 virtual and augmented reality entries, ranging from simple mobile 360-degree video to multi-person performance art installations. They came from newcomers

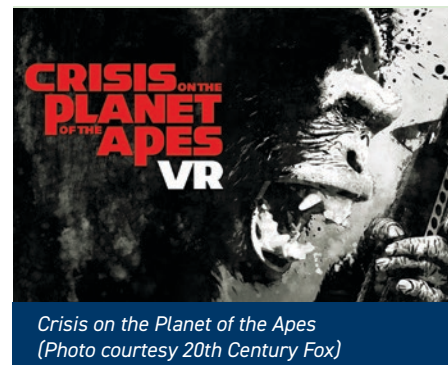
as well as established studios like Felix & Paul, Oculus, and Within. There was even an element of star power, including Rosario Dawson and Maria Bello.

On the home entertainment front, the focus isn’t so much on creating new “experiences” as it is on enhancing the overall consumer home entertainment experience. FoxNext, a new division at 20th Century Fox, in February 2018 announced its first virtual reality game, “Crisis on the Planet of the Apes” VR, set between the “Rise of the Planet of the Apes” and “Dawn of the Planet of the Apes” movies, with the user cast as an intelligent ape.

“Crisis on the Planet of the Apes” VR launched April 3 on PlayStation VR, Oculus Rift, and HTC Vive for \$14.99.

“VR has always held the promise of bringing together the cinematic storytelling of film and the deeply immersive interactivity of games,” said Brendan Handler, SVP and GM of the FoxNext VR Studio. “Crisis on the Planet of the Apes VR takes this potential to the next level.”

Danny Kaye, who runs the studio’s Fox Innovation Lab, told Media Play News in March 2018 that his focus “is on the living room experience, the mobile experience, of filmed entertainment” – and in using new technologies such as VR and AR to improve and enhance that experience.



"One of the things we try to work on, for example, is how do you use a mobile device in AR to increase the value of the experience. Let's say, for example, that you're watching a NASCAR race on TV, and you're not just seeing what you're looking at on the TV, what the cameras are showing, but if you have a tablet or phone you can have a whole different experience – a different perspective on the race. You could have the perspective of being in the pit, with an overlay of all kinds of interesting data about the driver, about the car, and just by pointing the device at different objects on the screen that data will pop up.

"And we have to think of similar things in filmed entertainment, and that's where things like mixed reality come in – where you have the potential to have an experience similar to virtual reality, but instead of being completely in a virtual world, isolated from your surroundings, you're also seeing your own environment and overlaying other environments through the lens of a headset."

Hardware

With the divide between the living room and the computer ancient history, consumers are enjoying their home entertainment on a wide variety of devices, from lavish home theater setups to PCs, smartphones, and tablets.

Streaming has given birth to a whole new industry of streaming media devices, with Amazon, Apple, Google, and Roku in the lead.

Interconnectivity is the key word, and most devices now may be used for multiple purposes. The Sony PlayStation and Microsoft Xbox can be used not just to play games, but also to play Blu-ray Disc movies and stream media. Set-top Blu-ray Disc and 4K Ultra HD Blu-ray Disc players also double as streaming media players.

And smartphones, viewing devices in their own right, are a convenient way to redeem digital movie codes through the Movies Anywhere service, with purchased movies instantly popping up on the home TV or any other connected device.

SCREENS

Consumers may be cutting the cord with Pay TV, but they still prefer the big screen to any other viewing device. Data released by Nielsen in May 2017 found 92% of all viewing among U.S. adults (18 and older) still takes place on the TV screen.

Nielsen measured viewing minutes in the fourth quarter of 2016, comparing TV screen-based viewing to viewing on PCs, smartphones, tablets, and other TV-connected devices.

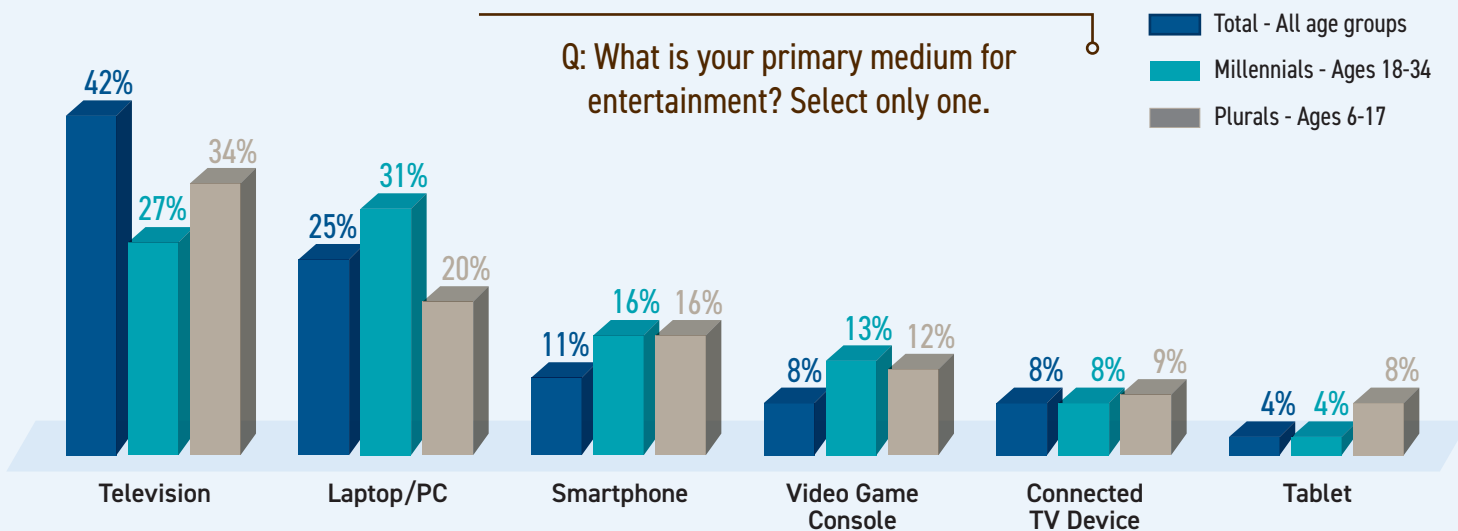
PCs accounted for just 5.1% of video-watching minutes, with smartphones and tablets trailing at 1.8% and 0.7%, respectively.

In March 2018, Netflix said 70% of its streams end up on connected TVs instead of PCs, phones, or tablets.

Research from the Consumer Technology Association (CTA) released in January 2018 projects that unit sales of total digital displays in 2018 will reach 44.2 million units and \$22.1 billion in revenue, a 2% gain over 2017.

PRIMARY ENTERTAINMENT DEVICE

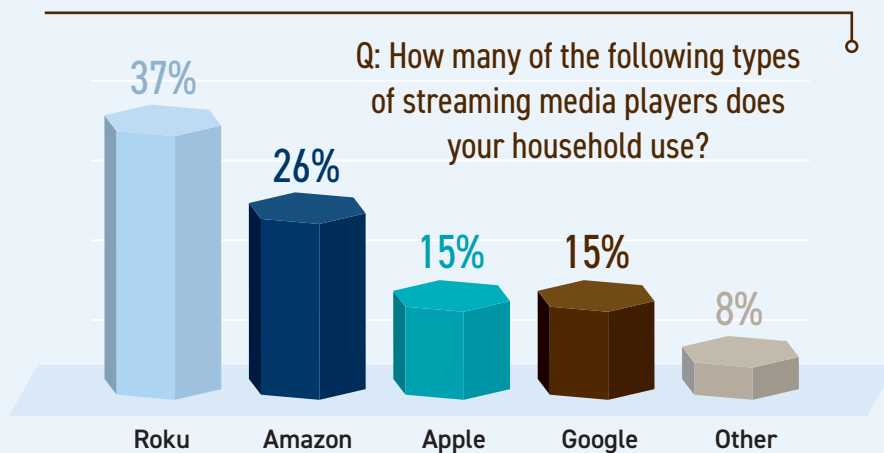
Q: What is your primary medium for entertainment? Select only one.



Source: Frank N. Magid Associates

ema 2018 Annual Report

STREAMING MEDIA PLAYERS BRAND SHARE BY INSTALLED BASE - Q3-2017



Source: Multiple surveys: American Broadband Households and Their Technologies.
Source: Parks Associate

4K ULTRA HD TVS

When it comes to quality, nothing beats 4K UHD technology, with pictures four times clearer than standard high-definition. But 4K's trump card isn't just more pixels, but also better pixels. High Dynamic Range (HDR), Wide Color Spectrum and Immersive Audio now combine with 4K resolution to deliver to home viewers a movie-watching experience closer to the theatrical experience than ever.

For the first time, 4K UHD TVs will make up half of all total digital displays sold in 2018, with unit sales forecast to hit 22 million units — a 27% increase from 2017 — and revenue generated from 4K UHD TV sales is projected to hit \$15.9 billion in 2018, up 14% from 2017, according to research from the Consumer Technology Association (CTA).

And more content is becoming available for consumers to watch in 4K UHD. 4K UHD Blu-ray Disc remains the optimum delivery method for this content, but streaming and digital download services such as Amazon, Apple, Netflix, and others are now also offering 4K with HDR content for streaming and purchase. During Oscar season, Warner Bros., the studio that produced "Dunkirk," even offered Academy of Motion Pictures Arts and Sciences voters a 4K UHD screener of the movie so that they could get the best experience while reviewing the film.

In its year-end report, DEG in January 2018 said more than 14.6 million 4K UHD TVs were sold in 2017, bringing the total households life to date to more than 30 million. In addition, there are approximately 8 million households with 4K UHD Blu-ray playback devices (including set-top players and game consoles).

THE CONNECTED TV

With Netflix and other OTT services using the Internet rather than cable or satellite to deliver content, connectivity has become the rule rather than the exception.

According to Nielsen's Q2 2017 Total Audience Report, released in November 2017, nearly 70 million U.S. TV households have their screens connected to the Internet, a 12% spike from June 2016 to June 2017, when the Nielsen measurement was taken. Smart TVs, which due to built-in connectivity don't need a secondary device to link to the web, "are increasingly approaching ubiquity and becoming more accessible to the average consumer," Nielsen says, noting Smart TVs are now found in one-third of all U.S. TV households.

Smart TVs typically come with a variety of apps that allow access to content from Amazon, Google, HBO, Hulu, Movies Anywhere, Netflix, Showtime, and YouTube, as well as various online offerings from broadcast and cable networks.

For those TVs that don't connect directly to the Internet, there are various devices that can be used to link to the web, including Blu-ray Disc players, game consoles like Sony's

PlayStation and Microsoft's Xbox, and a growing number of streaming media players that range from set-top boxes to portable "sticks" that are plugged into the TV.

Among the most popular are Amazon's Fire TV and Fire TV Stick, the Apple TV, Google's Chromecast, the NVIDIA Shield TV 16 GB Streaming Media Player, and Roku's Streaming Stick and Express Streaming Media Player.

According to Nielsen, 58.7% of TV homes in the U.S. now own at least one Internet-enabled device capable of streaming to a TV set.

The report says video game platforms "have become a key platform through which consumers can stream the latest SVOD content." Game consoles connected to the Internet can now be found in at least 39 million TV homes, Nielsen says — over one-third of all TV homes.

More than a quarter of all TV homes (about 31 million) have at least two devices with the ability to stream content to TVs.

And of the 69.5 million TV homes with at least an enabled multimedia device, game console, or Smart TV, Nielsen says, 6.5 million of them have access to all three.

Fully 84% of US households now get some type of Internet service at home, up 10% points over the past decade, according to a Leichtman Research Group (LRG) study released in January 2018. Broadband now accounts for virtually all (98%) of home Internet service. As a result, 82% of U.S. households now have a broadband Internet service, up from 76% in 2012.

DISC PLAYERS

Dedicated disc players – DVD, Blu-ray Disc, or 4K Ultra HD Blu-ray Disc – remain a staple of the typical U.S. home. As of May 2017 the Consumer Technology Association (CTA) reported disc players are found in 70% of all U.S. households, making them the third-most-owned consumer technology product, behind TVs (96%) and smartphones (80%).

Still, the CTA says, the installed base of dedicated disc players slipped from an estimated 164 million in 2016 to 142 million in 2017, a decline of 14%.

In addition, there are approximately 8 million households with 4K UHD Blu-ray Disc playback devices (including set-top players and game consoles), the DEG said in its annual year-end 2017 report.

Experts agree that 4K UHD Blu-ray Disc is the optimum way to watch true 4K Ultra HD content, despite advances in bandwidth that permit 4K streaming. As recently as January 2018 Tech Radar noted that 4K UHD Blu-ray is the only way “to get a true 4K experience.” [o](#)

PIRACY

Piracy remains a big problem for both the movie industry and the home entertainment sector. Carnegie Mellon University researchers, in a report issued in February 2016, concluded that box office revenues alone would rise by 15% if there were no piracy.

And as the home entertainment business has shifted from packaged media to streaming, pirates have followed suit, shifting from discs and peer-to-peer file-sharing sites to unlawful streaming sites.

As a result, it's no longer just the studios that are the victims. According to a Digital TV Research study published in October 2017, the cost of piracy to Amazon, Netflix, and other legal streamers will top \$50 billion between 2016 and 2022.

The research company measured the effect of piracy on legal streaming across 138 countries, and across TV and movie output. It pegged lost subscription and ad revenue at \$52 billion between 2016 and 2022.

In June 2017, Netflix and Amazon were announced among the members of a new anti-online piracy industry coalition, the Alliance for Creativity and Entertainment.

Speaking in February 2018 during a meeting with the German Producers Alliance at the 68th Berlin International Film Festival, Motion Picture Association of America (MPAA) Chairman and CEO Charles Rivkin blasted “the creeping rise of piracy,” according to Deadline.

He said there were over 20 billion visits to streaming piracy sites in 2017 and called piracy an “existential threat” to the industry. Rivkin also talked up the Alliance for Creativity and Entertainment. “This global collaboration has already seen important victories against illicit streaming devices like Tickbox in the United States, and the elimination of apps that enable access to pirated content, here in Europe and in other parts of the world,” he said.

In its latest annual Global Piracy Report, MUSO – a London-based technology company that works with the global content industry – chalked up 191 billion global piracy visits in 2017, led by nearly 108 billion visits to illegal streaming sites. Popular piracy sites include kinogo.co, primewire.ag, and putlocker.is.

And a survey published in February 2017 by Irdeto, a provider of digital security technologies, found that 74% of U.S. consumers acknowledged that producing or sharing pirated video content is illegal – and yet 32% of the survey's respondents said that they watch pirated content. Only 19% said the financial hit inflicted on content owners and providers by piracy would stop them from watching pirated content.

According to the study, 24% of consumers who watch pirated content are most interested in watching TV series; 24% are most interested in watching current theatrical films; and 18% are most interested in pirating movies on DVD and Blu-ray Disc.

Overview

The video game business, like the home video industry, has expanded from physical into the digital and mobile realms, with a proliferation of platforms.

And, like home video, gaming really began in the 1970s, when video arcade games moved beyond pinball and other mechanical contraptions into the computer age. The release of "Space Invaders" was a pivotal moment, with the introduction of vector display technology – computer graphics on a screen – paving the way for such other iconic arcade games as "Donkey Kong" and "Pac-Man."

At the same time, game makers began targeting the home, at first with clones of the popular arcade ball-and-paddle game "Pong." The September 1977 introduction of the Atari VCS (later known as the Atari 2600), along with nine launch games, popularized the use of microprocessor-based hardware and ROM cartridges with game code. In 1980, "Space Invaders" was released for the Atari 2600 game console and became the first "killer app" for video game consoles, quadrupling sales of the system.

The game business soared, with Japanese game maker Nintendo pegging the U.S. home video game market as a \$3.2 billion-a-year business by 1983. But that same year came the celebrated crash, fueled by oversaturation, a lack of quality games, and the growth of the home computer market. Game makers went bankrupt and even market leader Atari posted a huge loss. Recovery took a few years, but ultimately came.

thanks to the launch of the Nintendo NES console and the September 1985 release of "Super Mario Bros.," which eventually sold 40 million copies and quickly became the top-selling video game of all time – a record it held for 23 years.

The gaming industry's rebirth also saw the rise of computer gaming, with the Commodore 64 leading the way, the arrival of Sega as a competitor to Nintendo in the console market, and the emergence of handheld LCD games, particularly Nintendo's Game Boy, which debuted in 1989.

The video game industry's next major milestone was the 1995 (U.S.) launch of Sony's PlayStation, the outgrowth of what had initially been a joint venture between Sony and Nintendo. It was, in essence, a better mousetrap, and was soon outselling the latest consoles by Nintendo and Sega. The device's popularity was aided by Sony reaching out to third-party developers with programming and technical support, in sharp contrast to Nintendo and Sega's isolationist approach.

By the end of the decade Sega had exited the console market and Sony had launched its PlayStation 2, with games on discs rather than cartridges. It was an even bigger success than the original PlayStation and spurred Microsoft to enter the market a few years later with its Xbox.

Since then, PlayStation (now in its fourth incarnation) and Xbox have continued to dominate the set-top market, with the latest generation of each featuring high-definition graphics, large hard disk-based storage, integrated networking, and online gameplay and sales networks (the

PlayStation Network and Xbox Live, respectively). And Nintendo staged a comeback with its Wii. Computer gaming and mobile gaming have achieved new heights of prominence, with the computer market yielding such best-selling games as "Minecraft," which has since crossed over to consoles and as of early 2018 racked up total worldwide sales of 144 million copies, making it the second-best-selling game of all time.

In a February 2018 report, Futuresource Consulting reported that global software spending across all gaming platforms (console, mobile, and PC) and regions reached \$116 billion in 2017, with mobile accounting for \$46 billion.

The U.S. video game industry generated a record \$36 billion in revenue in 2017, up 18% from 2016, according to new data released in January 2018 by the Entertainment Software Association (ESA) and The NPD Group.

The 2017 figure includes software revenue from physical and digital sales, which includes in-game purchases and subscriptions, and hardware revenue, which includes peripherals.

"The spectacular growth of our industry in 2017 proves video game developers, artists, and storytellers are the brightest lights in the U.S. economy, finding more ways to delight the world's 2.6 billion gamers each year," said Michael D. Gallagher, president and CEO of ESA.

According to ESA's 2017 Essential Facts About the Computer and Video Game Industry report:

- Sixty-five percent of American households are home to someone

who plays video games regularly, and 67% of American households own a device used to play video games.

- Gamers age 18 or older represent 72% of the video game-playing population, and the average gamer is 35 years old.
- Adult women represent a greater portion of the video game-playing population (31%) than boys under age 18 (18%).
- Sixty-seven percent of parents play video games with their children at least once a week.
- Seventy-one percent of parents feel video games positively impact their child's life.
- Fifty-three percent of the most frequent video game players report playing video games with others.
- Eleven percent of U.S. households own a virtual reality (VR) headset, and one-third of the most frequent

video game players say they will buy a VR headset in the next year.

- Seventy-four percent of PC/console VR headset owners use their device to play single player video games.

Content

U.S. consumers in 2017 spent a total of \$24.03 billion on video game content, up from \$21.95 billion in 2016, according to IHS Markit. Physical video game software accounted for \$4.53 billion, according to IHS Markit data, while digital content revenue came in at \$10.44 billion and mobile at \$9.06.

DISC-BASED GAMES

The NPD Group says consumer spending on packaged console and portable games and full game digital formats for the two leading platforms, PlayStation and Xbox, totaled \$6.39 billion in 2017, up 6.3% from \$6.01 billion in 2016.

"Call of Duty: WWII" was the top-selling game of the year, generating more than \$1 billion in global sales, physical and digital combined, according to publisher Activision. The franchise's move away from the futuristic warfare of 2016's "Call of Duty: Infinite Warfare" and back to its Second World War roots was a good one – according to Activision, "WWII" sold 500,000 copies its first three days on the market, twice as many as "Infinite Warfare" in the same period.

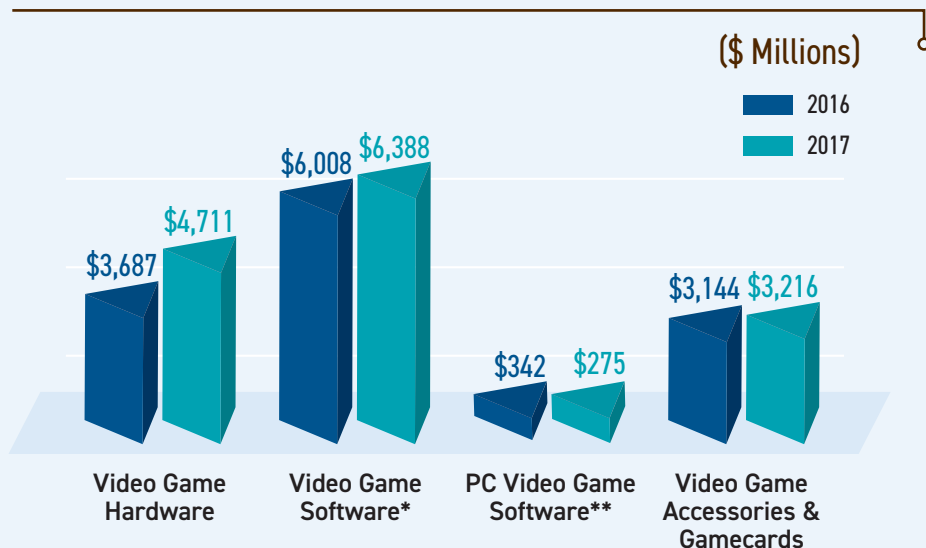
Other top sellers include "NBA 2K18," from Take Two Interactive, which NPD has ranked at No. 2, followed by Activision's Destiny 2 at No. 3, Electronic Arts' "Madden NFL 18" at No. 4, and Nintendo's "The Legend of Zelda: Breath of the Wild" at No. 5.

NPD reports a total of 314 physical games were released into the market in 2017, up 16% from 271 the year before and 36% from 2015, when just 230 packaged releases hit the market.

Bundling additional content with the base game became a more widespread practice in 2017, NPD analyst Mat Piscatella wrote in a recap of how well his predictions for the year fared. Many games, he notes, held their average prices "at higher levels for longer periods of time than has been seen in past years. Of the games in the top 10 for all of 2017, more than half offered [bundled] editions, a ratio I expect may rise higher in the future."

Piscatella also highlighted the success of racing games, which saw launches like "Forza Motorsport 7," "F1 2018," and "Dirt 4." Overall, the genre saw 68% higher sales compared to 2016.

VIDEO GAME HARDWARE, SOFTWARE, ACCESSORIES & GAMECARD SPENDING 2016-2017



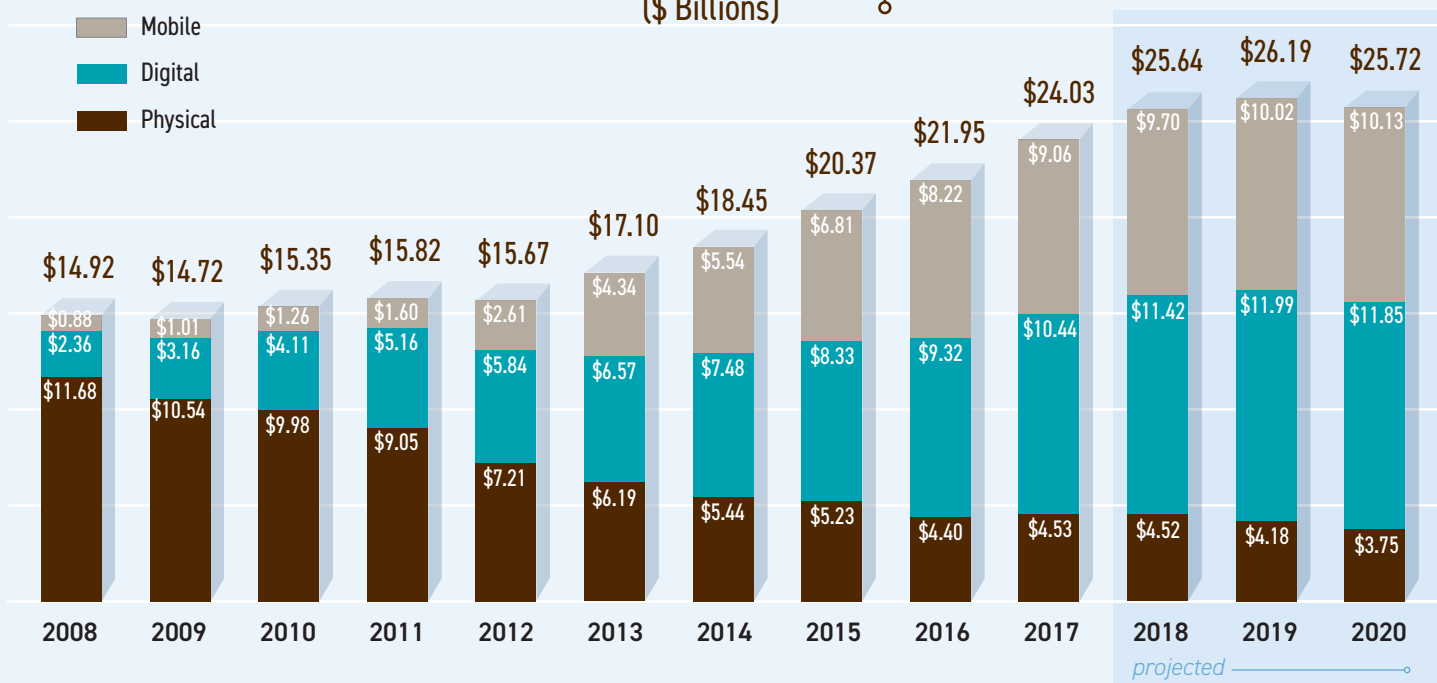
*Video Games Software (Console and Portable; Physical and Full Game Digital Formats from PlayStation and Xbox platforms)

**PC Games Software (PC; Physical and Full Game Digital Formats from the STEAM platform)

Source: The NPD Group, Inc.

VIDEO GAME CONTENT SPENDING - 2008 - 2020

(\$ Billions)



Digital: PC multiplayer online game subscription and microtransactions, casual, social network, download to own, online TV and handheld game console transactions and subscriptions, on-demand games. Mobile: all data is for smartphone, tablet, featurephone and mobile web, data excludes advertising revenues; includes all mobile application stores, operator portals, browser-based, and social network services.

Source: IHS Markit

"Sales of racing games showed the highest growth among all genres in 2017," Piscatella said in The NPD Group's year-end report, issued in January 2018, "while shooter games generated the most overall consumer spend."

DIGITAL

As in the home video industry, the shift from physical to digital products is accelerating. On a November 2017 earnings call, Activision executives said that more than 50% of sales of the best-selling "Destiny 2" came from downloads rather than physical discs. That's significantly higher than the 20% to 25% of "Call of Duty" console game sales that come from downloads. Activision CFO Spencer Neumann on the call noted that "historically, we've been seeing that digital mix increase at about five points a year." With "Destiny 2's" digital majority, Neumann said, "we believe

we're seeing some acceleration in that digital shift."

This prompted ArsTechnica to observe, "On the PC, games distributed on discs in physical boxes have been a practical market rounding error for years now. And Destiny 2's sales distribution highlights how the console game market may finally (and inexorably) be heading toward that point as well.... It's not hard to envision 60% to 70% (or more) of all sales for major console games coming from downloads by 2021, when Sony and Microsoft will probably be thinking about releasing new consoles. That's probably not enough to allow those consoles to go completely free of the standard disc drive, but it could push console-makers to offer cheaper, disc-free versions as an option."

But the digital revolution in gaming is by no means limited to downloads commanding a bigger and bigger share of the console game market.

The PC game market is virtually 100% digital – and a fast-growing business, thanks to Steam and other platforms. Subscription gaming services, similar to Netflix on the home video side, are on the rise. So are sales of downloadable content (additional content released for an existing video game in the hopes of keeping gamers interested in continued playing). Microtransactions – the sale of "virtual goods," like extra weaponry, that gamers can buy while playing a game – are also gaining in popularity. And then there's the mobile video game market, a huge industry in itself.

Retailers have adapted to the transition to digital by selling cards that contain codes that can be redeemed online for full-game downloads, downloadable content, in-game currency, online game subscriptions, and Nintendo eShop, PlayStation Store, and Xbox Live purchases. Online

stores, including Amazon, BestBuy.com, GameStop.com, Target.com, and Walmart.com, sell digital codes that allow the purchaser to install and activate video games, access downloadable content, and obtain digital currency.

All are growth areas, and all are digital.

PC GAMING

The PC video game market continues to be flooded with video games, prompting PC Gamer in January 2018 to observe, "with more games than ever releasing on a daily basis, there's no way we, let alone anyone, can possibly keep up with them all."

Games for the home computer began to catch on after the big video game crash of 1983 led to a several-year-long slump on the console side of the business. Consoles soon retook a dominant position in the market, but beginning about a decade ago PC games began to experience a resurgence due to digital distribution, which in turn was enabled by a steady, and rapid, increase in cost-effective broadband Internet access.

PC games are generally a lot cheaper than console games, and many are free. The NPD Group estimates consumers spent \$280 million on PC game software in 2017, down from \$340 million in 2016.

The PC game market is dominated by Valve's Steam distribution service, which by early 2018 had more than 150 million registered accounts. Steam provides users with installation and automatic game updates, as well as social features such as friends lists and in-game voice and chat.

The NPD Group notes that in 2017, more than 7,600 games were released on Steam, compared to just



Subscription gaming is becoming increasingly popular. (Photo by Magnus Fröderberg)

314 physical games. "This equates to a ratio of 24.4 Steam games for every console or portable game released," NPD says. Steam was launched in 2003 and a year later had just seven games; as of December 2017, the total number of games available was upwards of 18,000.

SUBSCRIPTION GAMING

That subscription gaming services continue to gain ground isn't surprising, given the massive success Netflix has had in the on-demand home video viewing market. Consumers have gotten used to an unlimited buffet of content for a low monthly subscription fee. So what if most of it isn't new?

Two of the most popular subscription services are tied to the two leading video game console formats, Sony's PlayStation and the Microsoft Xbox.

PlayStation Now is a cloud gaming service developed by Sony Interactive Entertainment, with more than 600 PS3 and PS4 games that are streamed directly to users' PS4s or PCs. Sony in 2017 discontinued PlayStation Now on PlayStation 3, PlayStation Vita, PlayStation TV, Sony Bravia televisions (2013–15), Sony Blu-ray Disc players and all Samsung TVs. "We decided to shift our focus

and resources to PS4 and Windows PC to further develop and improve the user experience on these two devices," Sony said at the time. PlayStation also has the PlayStation Plus, which lets gamers access features for their consoles, from free games to playing online with friends.

Xbox Game Pass is a subscription service from Microsoft for use with its Xbox One game console. Users have access to a catalog of games from a range of publishers. The service was launched in June 2017 with about 100 games. In September 2017, Game Pass expanded globally and is now available in 40 countries. In January 2018, Microsoft announced plans to release all new Xbox One exclusive games from Microsoft Studios into Xbox Game Pass on the same date as their global release, beginning with "Sea of Thieves" on March 20.

Game maker Electronics Arts has two subscription services, EA Access for Xbox One and EA Origin Access for the PC. Both services function as digital storefronts for EA games. In March 2018, EA announced that it is opening its Origin Access PC gaming subscription service to other publishers, with games from Warner Bros. Interactive Entertainment and other publishers set to join the service. First up are several Batman



Batman: Arkham Asylum is one of several Warner Interactive games now available on EA's Open Access subscription service. (Photo courtesy Warner Bros.)

games from Warner Bros., including "Batman: Arkham Asylum," "Batman: Arkham City," "Batman: Arkham Origins," "LEGO Batman," "LEGO Batman 2," and "LEGO Batman 3."

Also in the race to become the Netflix of the gaming world is Utomik, a streaming service that's been in beat mode since 2015. Utomik currently hosts more than 600 games from big publishers like Take Two Interactive and indies from Team17. Its main draw is the way it hosts games on the cloud, meaning its customers won't have to download an entire game to begin playing it.

Late last year, Utomik began a push to add new titles on their launch day, beginning with Neckbolt's "Yono and the Celestial Elephants," which came out on the Nintendo Switch, Steam, and Utomik at the same time on October 12. Utomik offers unlimited play and costs \$6 per month for a single player and \$10 for a family plan that supports up to four players.

Various other subscription gaming services also are available. Jump focuses on award-winning indie games, but as of the end of 2017 only had about 60 games available. The service offers a 14-day free trial that turns into a \$9.99 monthly charge if you don't cancel.

GameFly offers a subscription streaming service that works through certain smart TVs and Amazon Fire. The cost is less than \$10 a month for a growing list of games and unlimited access. (GameFly also offers a subscription service for console games by mail.)

And OnePlay, for \$9.99 a month, offers an extensive roster of PC and Android video games (more than 2,000 titles), with new games added weekly.

Waiting in the wings: Google. The Information website in February 2018 reported that Google is developing a subscription-based game streaming service that could work on either its Chromecast or a Google console, which is still being developed. "The service, code-named Yeti, would put Google at the forefront of a new part of the video game business that lets people play games as they're being streamed, rather than using downloads or discs," Reuters said, quoting from the Information report.

◦ **DOWNLOADABLE CONTENT, MICROTRANSACTIONS, AND LOOT BOXES**

Downloadable content (DLC) is additional content created for already-released video games, designed to extend the life of game

play. DLC ranges from new levels and challenges to aesthetic content, such as outfit changes.

Microtransactions refers to in-game purchases that unlock certain features or give users special abilities, characters, or content to enhance game play. Microtransactions are often found in free-to-play games and provide gamers with the opportunity to gain a competitive advantage – at a cost, of course, which helps developers monetize their otherwise free games.

But microtransactions aren't limited to free games.

In December 2017, Intelligent Economist noted the controversy that erupted when a Reddit poster remarked that it cost him \$80 to unlock Darth Vader on Electronic Arts' "Star Wars Battlefront II." EA introduced a "loot box" system in the game, which encourages gamers to spend real money on the game to unlock particular fan favorites like Darth Vader or Luke Skywalker or other in-game rewards, the Intelligent Economist reported. "Keep in mind that this game already retails for \$60 to \$80.... Traditionally, such games allow you to play and complete the game entirely without spending any more money.... EA [stated] that you didn't have to spend money to unlock these rewards, you could do so by playing the game and grinding away. Redditors compiled a spreadsheet of how long certain things would take, and it's mind-blowing that EA thinks people would spend 40 hours to unlock a single popular character.... EA has since removed in-game purchases from 'Battlefront II', but I suspect this monetization strategy is far from over."

Indeed, other games such as "Need For Speed: Payback" and "Destiny 2" had their own pay-to-win controversies. "Eventually, loot boxes

unsettled enough constituents to rile their representatives,” Engadget observed in February 2018. “Legislators in Hawaii, Washington and Illinois have introduced bills to either study loot boxes or restrict access to young players.”

MOBILE GAMING

The mobile video game market, birthed with the advent of the smartphone in 2007, is a huge and growing business. Futuresource Consulting pegs global software spending on mobile gaming in 2017 at \$46 billion and expects that figure to grow to \$60 billion by 2022, fueled by consumers in China.

“Ten years ago, the launch of the iPhone ignited a revolution in the industry,” Newzoo said in a November 2017 update to its quarterly Global Games Market Report. “Today, we are witnessing a new phase of

accelerated growth driven by the empowering nature of games and the impact gaming is having on the media and entertainment landscape as a whole.”

The Newzoo report maintains mobile gaming (smartphone and tablet) is the largest segment of the video game industry, accounting for 42% of the total global market. The segment also has the most gamers with 2.1 billion, the majority of whom are gaming on smartphones.

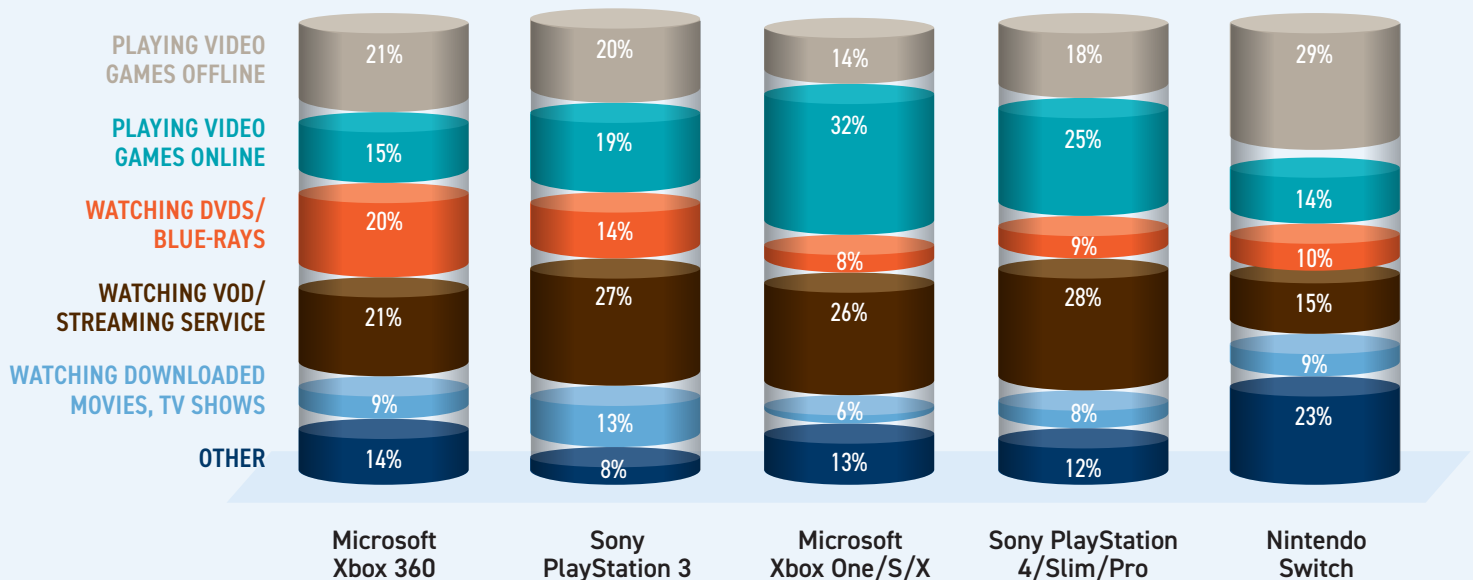
In March 2018, a new report from market researchers App Annie and IDC put the worldwide spending total on mobile games even higher, at \$70 billion. “Mobile games first overtook home game consoles and PCs in 2014,” the report says. “But now mobile gaming’s lead in consumer spending has widened even more. In 2017, overall mobile gaming spending was 2.3 times more than

overall PC and Mac games, and overall mobile game spending was 3.6 times higher than home game consoles.”

The report says the \$70 billion estimate includes both money paid to publishers (70%) and to platforms (30%). That compares to \$34 billion for PC and Mac games, \$22 billion for game consoles, and \$3 billion for handheld game devices.

All of the totals include both digital and physical spending, but they do not include ad revenue. Mobile gaming figures include all app stores: Amazon, Google Play, iOS App Store, Samsung Galaxy, Windows Phone Store, and third-party Android stores. The home game console total includes discs, digital games, and gaming-related subscription services (PlayStation Plus and Xbox Live).

SHARE OF CONSOLE TIME AMONG USERS: AGES 13+



Notes: Totals may not equal 100% due to rounding.
Source: Nielsen 360 Gaming Report 2017

Hardware

U.S. consumers in 2017 spent a total of \$6.9 billion on video game software, up nearly 19% from \$5.8 billion in 2016, according to figures released in January 2018 by ESA and The NPD Group. NPD gaming analyst Mat Piscatella said the growth in hardware sales was driven primarily by the Nintendo Switch, which he maintains has sold more in its first 10 months on sale than any other platform in history "on a time-aligned basis."

The Sony PlayStation 4, however, remained the best-selling game console in 2017. "Combined sales of PlayStation 4 and Xbox One continue on a record-setting pace," Piscatella said. "Over the first 50 months in market for each console, the combined hardware installed base of the PlayStation 4 and Xbox One now exceeds that of the PlayStation 3 and Xbox 360 by 18%, and that of the PlayStation 2 and Xbox by 4%."

CONSOLES

The console market saw continued strong sales of the PlayStation 4 and Microsoft Xbox One as well as a very successful launch of a new console, Nintendo's Switch, which debuted in March 2017 at a suggested retail price of \$299.

◉ MICROSOFT XBOX ONE

Microsoft's Xbox One staged a significant comeback in 2017, fueled by the November 2017 launch of Xbox One X. The new console, priced at \$499, shipped with 6 teraflops of graphical power, more than the PS4 Pro, which has 4.2 teraflops. Microsoft is using a custom GPU engine that runs at 1172MHz, a big increase over the Xbox One's 853MHz and the PS4 Pro's 911MHz. Microsoft also shipped the Xbox One X with an Ultra HD Blu-ray drive for 4K movies and entertainment, and 1TB of storage.

Microsoft reported \$96.7 billion in revenue in the fiscal year ended June 30, 2017, up 5% from the prior fiscal year. Of that, about \$9.26 billion came from Xbox sales, according to Securities and Exchange Commission filings.

In 2017, Xbox hardware sales slipped 21% from a year earlier, primarily because of lower console prices and sales volume, according to The Street.

But in its most recent quarterly report for the three months ended Dec. 30, 2017, Microsoft reported an 8% spike in gaming revenue driven by Xbox One X hardware sales growth following the launch. For the quarter, hardware revenue increased 14% and software and services revenue grew 4%.

"With even more sales time under its belt and more games available for a wider range of consoles, Microsoft could tee up further gaming revenue to bolster an anticipated 11% year-over-year sales growth," according to The Street.

In March 2018, Microsoft announced a trio of major new features for Xbox One X console "that together substantially increase the technological lead the console enjoys" over the PS4 Pro, Forbes observed. "The most exciting of these Microsoft announcements was the revelation during the latest episode of Inside Xbox that both the Xbox One X and Xbox One S would be getting support for FreeSync. As AMD's Antal Tugler explains in the Inside Xbox video, adding FreeSync support via an upcoming software update will enable the S and X consoles to harmonize games' fluctuating frame rates with the frame rates being produced by AMD's FreeSync capable Radeon displays. This is a huge deal, as it can essentially eradicate the tearing and stuttering you normally get when



Xbox One X (Photo courtesy of Microsoft)



PlayStation 4 Pro (Photo courtesy of Sony)



Switch (Photo courtesy of Nintendo)



screens (which are usually locked at 60fps) have to try and cope with varying frame rates within game engines. This literally game-changing feature has been available on PCs for some time, but expanding its use to consoles is a major deal. Especially as it seems it may also work with some of Samsung's 2018 TVs."

○ SONY PLAYSTATION 4

Sony's PlayStation 4 has been the market leader in the console game business since it was introduced in November 2013. As of December 2017, 70.6 million PlayStation 4 consoles have been sold, Sony declared at that time.

Two new versions of the PS 4 were introduced in 2016 and helped drive sales in 2017: the PS4 Slim and the PS4 Pro. The former is lighter than the original and boasts better Wi-Fi and Bluetooth performance. The Pro, on the other hand, supports 4K gaming and streaming and has an additional USB port.

The continued success of the PlayStation 4 is due to several different factors, Business Insider observed in December 2017: "The PlayStation 4 was the less expensive console when it launched in 2013, coming in at \$100 less than Microsoft's Xbox One. The PlayStation 4 is an attractive box that easily fits into your home, and using it as more than a game console is a snap. A lineup of killer blockbuster games, from 'Uncharted 4: A Thief's End' to 'Horizon Zero Dawn' to 'Bloodborne,' made the PlayStation 4 a must-have console. All three of those games are only playable on PS4. And success begets success — the PlayStation 4 has overtaken the zeitgeist as 'the' game console to own if you're going to buy a game console.

"Though Sony's exclusive game lineup isn't full of bangers in the



*Mario Kart 8 is one of several hit games that have fueled Switch sales.
(Photo courtesy Nintendo)*

coming months, an impressive array of major exclusives are currently in the works. And if you're looking for a way to enjoy more 4K content on your new 4K TV, the PlayStation 4 Pro offers an upgrade path to even prettier games. All of which is to say one thing: Sony's PlayStation 4 isn't showing any signs of slowing down."

○ NINTENDO SWITCH

Nintendo's highly anticipated Switch hit the market in March 2017 at a suggested list price of \$299. In January 2018, Nintendo said that Switch was the fastest-selling console ever in the United States after 10 months, with 4.8 million units sold. The NPD Group subsequently reported that the Switch racked up higher first-year sales than any other U.S. console in history.

The Switch is a versatile hybrid game console that easily "switches" between a big-screen TV and a handheld device. According to Engadget, "The Switch is, in a word, wonderful. It's not the most powerful gaming console available today ... nor does it support 4K, the most apps or the widest variety of games. Still, the Switch is everything Nintendo promised it would be, and then

some: It's a hybrid console, capable of playing titles up to 1080p on a television or up to 720p on its portable, 6.2-inch display."

Engadget notes that the Switch exclusively features some of the year's best games, including "The Legend of Zelda: Breath of the Wild," "Mario + Rabbids Kingdom Battle," "Mario Kart 8," "Splatoon 2," and "Super Mario Odyssey." Third-party developers, too, have been "largely happy with the company's approach to publishing," Engadget notes, with such indie favorites as "Rime," "Shovel Knight," "Stardew Valley," "TowerFall," "TumbleSeed," and others.

The Switch comes with two small Joy-Con controllers, which double as full gamepads, complete with Nintendo's new HD Rumble technology. A full-size Switch Pro Controller costs \$70, and the Charge Grip accessory, which lets the Joy-Cons recharge while connected, costs \$30.

In a March 2018 corporate management "policy briefing," Nintendo said a paid subscription service "that expands the online functionality of the Nintendo Switch" is in the works. "We reported previously that the service would launch in 2018, and now the official start time has been set to

September 2018," the company said. "Work is progressing on ways to further heighten the gaming experience for consumers. Details will be made available as they are finalized."

◉ NES AND CNES CLASSIC

For retro-gamers, Nintendo in November 2016 resurrected the original Nintendo Entertainment System – which first brought "Super Mario" into the public consciousness more than 30 years ago – with the NES Classic Edition, a miniature replica of a vintage machine that includes a static library of 30 built-in games from the licensed NES library.

Nintendo produced and sold about 2.3 million NES Classic Editions from November 2016 through April 2017, with shipments selling out nearly immediately at upwards of \$200 a pop. In April 2017, Nintendo announced it was discontinuing the product, but shortly after announcing the Super NES Classic Edition (\$80) in September 2017, Nintendo affirmed it will produce more NES Classic Editions starting in mid-2018.

In March 2018 Nintendo said, "Super NES Classic Edition has reached 4 million units in global sellthrough.... We plan to continue selling NES Classic Edition and Super NES Classic Edition this year. We view them as an opportunity to garner interest in Nintendo Switch from those who have not interacted with video games in a long time, or ever."

HANDHELDS

Nintendo dominates the handheld market. The reigning champ: the Nintendo 3DS, which is capable of displaying stereoscopic 3D effects without the use of 3D glasses or additional accessories. Nintendo officially unveiled the console at the E3 video game event in June 2010 and vows continued support, despite

the arrival of Switch, which also has a handheld gaming option. Several updated versions have since come on the market, with prices around \$200 or less.

The new Nintendo 2DS XL, launched in July 2017 and selling for about \$150, is a new portable gaming system that gives players access to a huge library of games, including past DS, NES, and SNES classics.

The Nintendo 2DS is a low-priced (under \$80) portable system for younger gamers launched in October 2013 as an entry-level version of the 3DS. It includes a 4GB SD card and gives players access to the 3DS library of cartridge-based and downloadable games.

In its March 2018 corporate management "policy briefing," Nintendo said, "The Nintendo 3DS characteristics, price points, and play styles differ from Nintendo Switch, and we intend to continue the Nintendo 3DS business separately and in parallel. We will continue to use its installed base and rich software library in our business.... The affordability of the Nintendo 3DS family of systems places it in a critical position as the first dedicated video game platform for children who have no prior experience with dedicated video game systems. It is also positioned as an affordable product for budget-conscious consumers. We will continue working to promote Nintendo 3DS to these consumers."

Sony also has skin in the handheld game with its PlayStation Vita (\$200). The successor to the PlayStation Portable was released in Japan in December 2011 and in the United States, Europe, and other worldwide regions in February 2012. "While it might not be as popular as Nintendo's handhelds, Sony's PlayStation Vita is still a strong contender in the handheld gaming space,"

Tom's Guide reported in November 2017. "Home to big-name exclusives like 'Uncharted: Golden Abyss' and 'Killzone Mercenary,' Vita has also accrued a wealth of beloved indie games. Japanese visual novels and role-playing games are plentiful on the system, as are Western indie titles like 'Don't Starve' and 'Rogue Legacy.' The system also lets you access many downloadable PS One and PSP classics. On the hardware side, Vita uses a 5-inch capacitive touch screen and a unique, rear-mounted touchpad... Thanks to the Vita's Remote Play functionality, you can even use this device to play your PS4 games when you're away from your TV."

MICROCONSOLES

Microconsoles are mostly low-cost Android devices that are designed to connect to TVs and play video games downloaded from Google Play and other app stores. Microconsoles began to appear in 2010 with OnLive and proliferated over the next few years with the GamePop, GameStick, MOJO, Nvidia Shield, Ouya, Razer Switchblade, and the PC-based Steam Machine. The WhatGamesAre website proclaimed 2013 "the year of the microconsole," but excitement has since been tempered by the emergence of game streaming services and freshened up or new consoles like the Microsoft Xbox X and the Nintendo Switch.

Accessories

Accessories are big business in the video game market. Joysticks and other controllers, charging stations, headsets, game cards, gaming chairs, and for PC gamers, keyboards constitute a growing segment of video gaming, The NPD Group says.

In its year-end 2017 report, NPD says total spending on video game

accessories grew 2% in 2017 to \$3.2 billion. The top-selling accessory was the PS4 Dualshock 4 Black Gamepad, aimed at younger gamers, with a touchpad.

Alternate 'Realities'

As noted earlier in the Video section, virtual reality (VR), augmented reality (AR) and mixed reality (MR) are primarily aimed at the video gaming rather than the passive video-viewing market.

VR creates an entirely new, 360-degree computer-generated world and brings the user inside it. VR games require the use of VR headsets, or goggles, such as the Sony PlayStation VR, the Facebook-owned Oculus VR system and the HTC Vive. Alternatively, a headset adaptor and mobile app software can turn a smartphone into a VR display. The cheapest are handheld smartphone adaptors made of cardboard, available at a nominal cost or given away at events or through promotions.

AR, in contrast, overlays the real world with virtual characters or scenes, as in "Pokemon Go," perhaps the biggest pop cultural craze of 2016. And MR is a mixture of the two. Using devices like Microsoft's much-ballyhooed HoloLens, mixed reality brings people, places, and objects from the physical and digital worlds together. With the HoloLens, the user's view can be controlled by dragging the mouse cursor over the image or by using keyboard keys to pan left, right, up, and down.

VR is getting the lion's share of the attention – and the investment dollars. The world's leading technology companies – including Apple, Facebook, Google, Microsoft, Samsung, and Sony – are spending heavily to develop VR equipment and applications.

Sony in December 2017 announced that it has sold 2 million PlayStation VR headsets since the device was introduced a year earlier – and six months after Sony announced the sale of 1 million VR headsets. Sales figures for competitors like HTC and Oculus are not available, but Sony is the likely market leader, since it has sold more than 70 million PS4 consoles capable of powering the PlayStation VR headsets, along with a steady supply of games like "Batman: Arkham VR," "Moss," "Super-HyberCube," and "Resident Evil 7," which Digital Trends in March 2018 called "a fantastic game [that] has (hopefully) paved the way for longer, more intense VR experiences, akin to the AAA games we're used to playing on PS4 and Xbox One."

But don't expect VR to be the Next Big Thing in gaming. As Forbes warned in a March 2018 article titled "5 Reasons Why You Shouldn't Buy An HTC Vive Pro For \$800": "VR isn't ready for prime-time. VR can be fun. I've played some games I really enjoyed. But mostly it's still very rough around the edges. Buying an \$800 headset is basically just an incredibly expensive way to sign up as a guinea pig. Even with a boosted resolution and the convenience of built-in headphones, the Vive will still have a very real problem: The games still don't justify the cost. Until there are better games out there for VR, I don't think you should buy an headset, even much cheaper ones like the PSVR."

In its January 2018 VR report, Futuresource Consulting observes, "At the beginning of 2017, VR was on course to enjoy widespread adoption. However, during the year device sales fell short of expectations [and] the industry has (since) adopted a more conservative viewpoint with regards to the speed of uptake. Many factors have

conspired to limit widespread adoption of VR. Notably, these include high hardware pricing for PC based VR and to a lesser extent PlayStation-VR (PSVR). While the VR platforms have pushed ahead with hardware development, the creative community has lagged behind in its ability to generate a sufficient amount of compelling content."

"A key issue for the industry is the lack of killer applications for VR that are essential to drive consumer adoption, and this has proved to be a major limiting factor that has impacted growth," Michael Boreham, Market Analyst at Futuresource Consulting said in the report. "The slow rate of consumer adoption of VR hardware has also impacted on the content community, with games and video publishers being wary of funding VR productions until the installed base of hardware has reached a level where they can guarantee a healthy return on investment."

This has resulted in major games publisher Electronic Arts suspending VR related projects for the foreseeable future and CCP closing its VR production operation, Futuresource Consulting noted. Still, the report said, "games continue to be the key application for VR. There has been a continued roll out of games titles across the mobile, console and PC platforms throughout 2017, with popular franchises such as 'Minecraft' moving to VR."

By 2021, the total value of the VR gaming market is forecast to increase, reaching \$8.8 billion from almost \$350 million during 2017, Futuresource Consulting says.○

RETAILING & STREAMING

While content is the core of the home entertainment business, it has to somehow get to the consumer, and that's where retailers – both traditional brick-and-mortar and digital – come in. Retailers add value through merchandising and promotion of individual titles, promotional themes, and marketing home entertainment consumption generally. Additionally, retailers play a key role in not just getting content to consumers, but also in helping consumers discover programs that might appeal to them. Back in the old days of videocassette rental, cardboard signs advertised new releases or “suggested picks.” Today, discovery often comes through a complex maze of algorithms and data analytics.

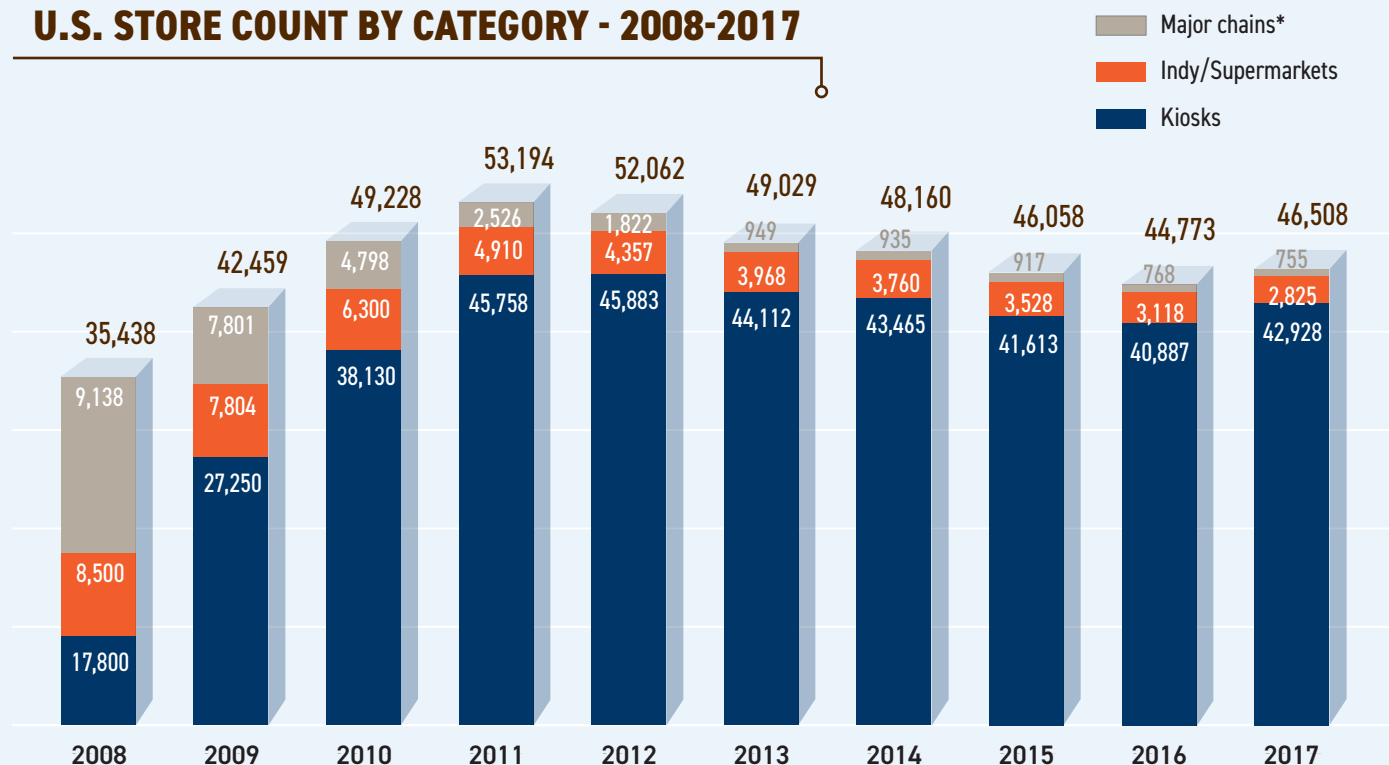
Distribution channels over the last few years have changed significantly, with digital-only retailers like FandangoNOW, Google Play, and iTunes carving out bigger and bigger chunks of the sell-through market. Meanwhile, SVOD – led by Netflix, Amazon, and Hulu, in that order – has become the “new” rental model, with consumers paying a flat monthly or annual fee to watch as much content as they want, on demand.

If home entertainment is defined as that segment of the market that delivers content directly to the consumer for on-demand viewing, then the home entertainment retailer landscape has become increasingly diverse. Lines have blurred between

digital and physical, and some of the top retailers are eager to differentiate themselves by acquiring their own proprietary content. That's not a new concept – way back in 1998, when video rental was still generating the bulk of home entertainment revenues, Blockbuster Entertainment Corp. launched its own film acquisition company, DEJ Productions – but never has this drive been as powerful as it is today, with Netflix setting an ultimate goal of 50% original content and Amazon expected to spend \$5 billion on original content in 2018.

The following is an overview of today's home entertainment retail landscape, focusing on the key players:

U.S. STORE COUNT BY CATEGORY - 2008-2017



*Major chains include: Blockbuster, Blockbuster Franchisees, Hollywood Video, Movie Gallery, Family Video, Hastings, and Other Chains (AAFES, V. Warehouse, etc.)
Source: comScore Retail Essentials

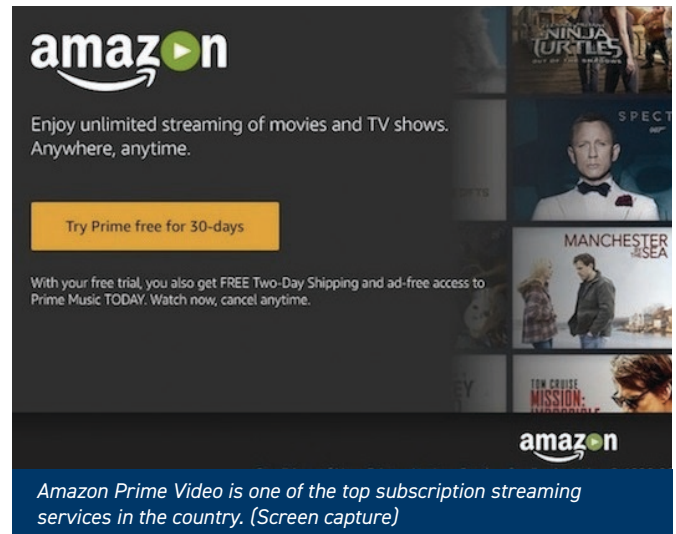
◦ **AMAZON** Amazon.com, the largest Internet retailer in the world, is also one of the leading sellers of both home entertainment and video game product, physical as well as digital. And its Amazon Prime Video service is a strong No. 2 to Netflix on the streaming front, giving subscribers unlimited access to thousands of movies, TV shows, and other filmed content. Amazon Prime Video is included with Amazon Prime memberships in the U.S. and select other territories, which give members free two-day shipping, and is also available as a standalone subscription service throughout the world (except notably China).

Amazon doesn't break down its numbers by product category, but the company reported total 2017 sales of \$177.9 billion, a 31% spike from the prior year. In July 2017, the Wall Street Journal reported that Amazon had about a 20% share of the digital sellthrough and streaming business, thanks to both its Amazon Prime Video subscription service and its standard Amazon Video catalog.

Amazon has promised an even bigger push into original content as it competes globally against Netflix and other SVOD platforms. In early 2018, JPMorgan's Doug Anmuth estimated the company will spend \$5 billion on video content this year, keying in on big-budget original shows and sportscasts.

In 2017, Amazon's most popular original content included the Oscar-winning "Manchester by the Sea," the motor-sport-themed "The Grand Tour," featuring the cast of BBC's "Top Gear" franchise, the Emmy-winning series "Transparent," and Amazon Studios' "Paterson." Original series include "Le Mans: Racing is Everything," which chronicles the 24-hour French car race; kids series "An American Girl Story: Summer Camp," "Friends for Life" and "Danger & Eggs"; and original unscripted series "All or Nothing," which chronicles the NFL's Los Angeles Rams' return to Southern California in 2016. "We're going to continue to invest in video and increase that investment in 2018," CFO Brian Olsavsky said on an October 2017 earnings call. "We're very bullish on what we're seeing both with how customers are responding and the quality of the [original] content."

In March 2018, internal documents obtained by Reuters said Amazon Prime Video generated 26 million initial viewers for original programs in early 2017, including 5 million viewers for top shows such as "The Man in the High Castle," "Mozart in the Jungle," "The Grand Tour," and "Transparent."



Amazon this year will have to contend with the loss of HBO, which is not renewing its groundbreaking licensing agreement with Amazon Prime Video when it expires in 2018. The agreement did not include current HBO shows "Game of Thrones," "Insecure," "Silicon Valley," "The Night Of," "True Detective," "Veep," and "Westworld," and pre-dated Amazon Channels, the upstart platform showcasing (to Prime members) third-party SVOD services — including HBO Now.

Amazon also continues to place a lot of faith in the video game business. In addition to selling physical video games, Amazon offers video game streaming through Twitch Prime, which also sells PC games and downloadable content (DLC). Last summer Amazon acquired GameSpark, an Irish video game developer tool, for \$10 million. "Amazon is increasingly proving that they view gaming as a very serious industry," WCCF Tech observed in March 2018, noting the company's 2014 acquisition of Twitch for nearly \$1 billion, its third-largest acquisition ever, behind last year's Whole Foods and 2009's Zappos. Both GameSpark and Lumberyard, a free-to-use game engine Amazon launched in early 2016, feature tight integration into the Twitch platform. "Amazon continues to apply its strategy of vertical and horizontal integration everywhere it can," WCCF Tech observes. "Just looking at video games; Amazon can now offer the tools to build the client game, the tools for server-side features, the AWS cloud to function as the game servers, and finally, even Twitch to allow streaming and viewing of those games."

Amazon also is plowing ahead with virtual reality, despite pullbacks by some large players, like Nokia. In November 2017, Amazon debuted software tools called



Amazon Sumerian to help coders more easily build virtual reality and augmented reality apps using 3D computer graphics. Amazon frames Sumerian as a way to build 3D-powered apps and games capable of running on some VR headsets as well as on Apple products like the iPhone or iPad.

◉ **APPLE ITUNES** More than a decade ago, Apple's iTunes Store launched the digital sellthrough/rental market when its revolutionary digital music store, which opened in 2003, began offering video content. Today, the iTunes Store features more than 112,000 movies and 300,000 TV shows for sale or rent, playable across a broad swath of Apple devices.

In July 2017 the Wall Street Journal reported that Apple's share for selling and renting movies, TV shows, and other video content has dropped to between 20% and 35% — down from over 50% as recently as 2012. Apple responded to requests for comment by the Journal by saying it focuses on providing users with content from HBO, Netflix, and other subscription services through the App Store. Apple also told the Journal that its movie rentals and purchases had risen over the last year and had reached their highest level in more than a decade.

Despite revolutionizing digital media consumption, Apple until recently hadn't put much focus on original content. Speaking at Re/code's tech confab in Dana Point, Calif., Eddy Cue, SVP of Internet software and services at Apple, suggested that mindset is changing, Home Media Magazine observed in June 2017. Apple hired Sony Pictures Television executives Jamie Erlicht and Zack Van Amburg — co-producers of "Sneaky Pete" for Amazon Prime Video, "The Crown" (Netflix),

and "Breaking Bad" and "Better Call Saul" for AMC Networks and Netflix. Apple is co-creating "Carpool Karaoke: The Series" with James Corden ("The Late, Late Show") and "Planet of the Apps" (Apple's first original series), which rates contestants' app potential. Both programs will stream on Apple Music, the digital music service with more than 20 million subscribers. "We've been working with television for a long time and we'll continue to work with television partners for a long time, whether it's Netflix or DirecTV or ABC," Cue said, adding distribution of video via Apple Music represents a "differentiating" factor. "With Apple Music, we saw there was an opportunity to do new and creative things that hadn't been done before," he said.

◉ **AT&T DIRECTV NOW** The giant telecom's entertainment's division includes TV streaming service DirecTV Now, in addition to pay-TV units DirecTV and AT&T U-verse. Both DirecTV and U-verse offer digital sales of movies to subscribers. In its year-end report for 2017, AT&T said DirecTV Now tallied 368,000 net adds to reach nearly 1.2 million DirecTV subscribers. DirecTV Now offers linear channels from major media companies such as A&E, AMC, CBS, Discovery, Disney, Fox, MLB, NBCUniversal, Turner, Univision, and Viacom. The service also allows users to add on Cinemax, HBO, Showtime, and Starz for an extra charge, giving them access to HBO Go, Showtime on Demand, and Starz on Demand, respectively.

Meanwhile, AT&T's acquisition of Warner Bros., which a year ago seemed a sure bet, is now in limbo, with the U.S. Justice Department seeking to block the merger on the grounds that the combined companies would force rivals to pay more for "must-have" content from the Turner Networks, including CNN, TBS, and TNT, and that the result would be higher prices for consumers, according to Variety.

◉ **BARNES & NOBLE** The physical disc continues to command a significant chunk of store space at Barnes & Noble, the national bookstore chain that as of October operates 778 retail stores in all 50 states.

Both in stores and on its e-commerce site, Barnes & Noble frequently partners with studios to promote new releases. Last year Disney partnered with the retailer on "Beauty and the Beast," with Barnes & Noble locations nationwide hosting giveaways, themed activities, readings of Cynthia Rylant's Beauty and the Beast picture book and sing-alongs to the movie's soundtrack. Warner Bros. also looked to Barnes & Noble to ratchet

up attention for "The Lego Batman Movie," with a series of events culminating with Lego building areas for kids, giveaways and special merchandise.

Barnes & Noble also holds a bi-annual 50% off sale on the high-brow Criterion Collection each July and November.

◦ **BEST BUY** Since the launch of DVD in 1997, Best Buy has been a key player in home entertainment software sales. The company was founded by Richard Schulze in 1966 and called Sound of Music before the name changed to Best Buy in 1983. Best Buy generates nearly \$40 billion annually. Best Buy has more than 1,500 stores in the United States, Canada, and Mexico, and says more than 70% of the population lives within 15 minutes of a Best Buy store.

In February 2018, Best Buy announced plans to close all of its roughly 250 smaller-format mobile phone stores by the end of May. Around the same time, Best Buy announced it will no longer sell CDs as of July 2018. But while observers fear cutbacks in DVD and Blu-ray Disc may be next, there has been no indication of this. Five years ago, CEO Hubert Joly said store floor space optimization mandated shrinking packaged media and redoubling emphasis on growth areas. But when asked about DVD and Blu-ray Disc, he said, "I love these categories."

Today, the nation's largest CE retailer continues to sell packaged media in stores and online — including 4K Ultra HD Blu-ray. And in March 2018 Best Buy reported a 16.8% increase in fourth-quarter (ended February 3) same-store entertainment revenue, compared to a 18.6% decline in the previous-year period.

The entertainment segment, which includes products such as DVD/Blu-ray Disc movies, video game hardware and software, books, music CDs, and computer software, generated 10%, or \$1.39 billion, of domestic revenue. The segment generated 9% (\$1.1 billion) in the previous-year period.

◦ **BRITBOX** The BBC's U.S. subscription service was launched in March 2017 and features mostly British movies, TV shows, and other content. Some series, including "Coronation Street," have new episodes available the day after their British premiere. Britbox in February 2018 announced that it will expand its service to Canada.

◦ **CBS ALL ACCESS** Celebrating its second birthday in January 2018, CBS All Access is a subscription streaming service operated by the CBS Network. Its marquee title is "Star Trek: Discovery," available only to subscribers, who also gain access to CBS broadcast content one day after it airs on the network.

CBS All Access is "doubling down" on its investment in original content, CBS COO Joseph Ianniello said at the Deutsche Bank Media & Telecom Conference in March 2018, promising six or seven new originals in the coming year.

In August 2017 CBS announced plans to expand All Access streaming service on an international basis, beginning this year in Canada before heading to other markets.

CBS All Access, which costs \$5.99 monthly with limited ads and \$9.99 without, will launch upwards of seven original series in 2018, including a new season of



Best Buy remains a key retailer of Blu-ray Discs and DVDs. (Photo courtesy Best Buy)



Netflix is the dominant streaming service. (Photo courtesy of Netflix)

"Star Trek: Discovery" and the pending reboot of "The Twilight Zone" from Oscar-winner Jordan Peele ("Get Out") – in addition to select live TV, NFL game telecasts, and catalog programming, Media Play News reported in March 2018.

◦ **CHARTER/SPECTRUM ON DEMAND** In addition to offering its own online TV subscription service — Spectrum TV Stream — to its broadband-only customers (\$13 a month for a basic channel package), Charter Communications also is pushing toward more original content. In January 2018, Charter said it has created a new SVP position to oversee original content and filled it with Katherine Pope, who will oversee all original programming initiatives, including the creation and launch of a planned lineup of new shows available first on Charter-carried channels. Her portfolio will include Charter's original-content partnerships with AMC (struck in April 2017) and Viacom (November 2017). Pope joined Charter from Studio 8, where she was head of TV and helped launch the company's independent TV unit.

◦ **COMCAST** Comcast Corporation, the country's largest cable TV company, also is a key player in digital movie sales, with an estimated 15% share of the market, according to a July 2017 report by the Wall Street Journal.

Comcast in 2013 became the first pay-TV operator to sell subscribers digital movies with the launch of its Xfinity X1 platform. As Michael Bonner, EVP, Digital Distribution, for Universal Pictures Home Entertainment told Home Media Magazine in January 2017, "Comcast's 2013 entrée into EST was an unequivocal game

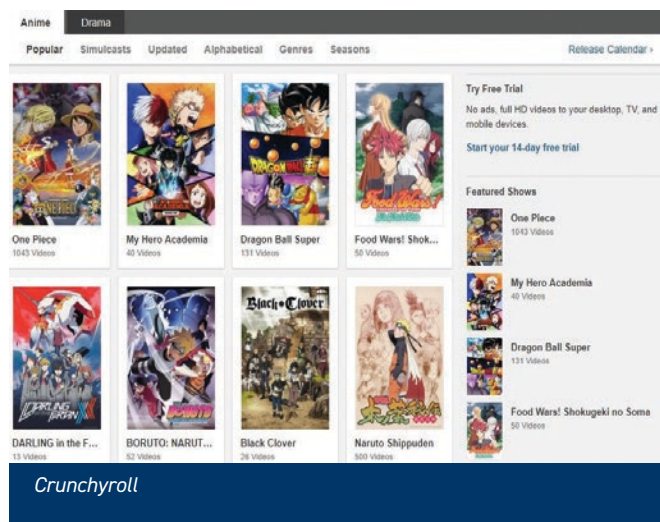
changer for the digital sell-through market. Overnight, Comcast took its place among the industry's top digital retailers." In December 2016, Comcast inked pacts with Lionsgate, Paramount Pictures, Sony Pictures and Universal Pictures to include bonus material and related movie extras long associated with packaged media. Access to the digital store is promoted through Comcast's cloud-based X1 settop. X1 upgrades include a so-called "smart" keyboard, a simplified transactional VOD folder, a personalized screensaver, a power saver, and a DVR.

Earlier this year, ABC News observed, "Comcast has turned its X1 TV set-top box into something resembling a Roku or Apple TV streaming player, complete with app-like menus and a voice-activated remote. During the Olympics, X1 merged both TV and online videos to give viewers a one-stop experience."

Comcast also has embraced Netflix, with the streaming service launching on Comcast's X1 cable set-top box in November 2016. Philly.com at the time said the launch "broadens consumer appeal for their respective services and helps Comcast with federal regulators who say that pay-TV companies should integrate traditional TV and streaming services on set-top boxes."

◦ **CRUNCHYROLL** Crunchyroll is a subscription video streaming site focused on Japanese and other East Asian media—including anime, manga, drama, music, and electronic entertainment—and content. Founded in 2006, Crunchyroll's distribution channel and partnership program delivers content to more than 35 million online community members around the world.

Crunchyroll offers over 900 anime shows, more than 200 Asian dramas to users, and 50 manga titles,



although not all programming is available worldwide due to licensing restrictions. In February 2017, Crunchyroll passed one million paid subscribers.

◉ **DISH CINEMA/SLING TV** Sling TV, the streaming TV service owned by Dish Network, was launched in January 2015, marking the first time a multichannel video programming distributor (MVPD) offered non-subscribers access to both live TV channels and on-demand content. Dish in February 2018 said Sling TV had 2.2 million subscribers as of the end of 2017, putting it well ahead of such rivals as DirecTV Now (1 million subscribers as of December 2017), PlayStation Vue (455,000 as of December 2017), Hulu with Live TV (450,000 as of January 2018), and YouTube TV (300,000 as of January 2018).

Like other virtual MVPD services, Sling TV allows users to choose between various tiers, with prices that start at \$20/month for a small amount of channels and then go up as more channels are added.

◉ **FAMILY VIDEO** Family Video Movie Club Inc. is the last surviving national video rental chain. Based in Glenview, Illinois, Family Video has more than 775 stores in the United States and Canada, concentrated in the Midwest. The chain also operates an e-commerce site where customers can buy video games as well as used DVDs and Blu-ray Discs.

Family Video was founded in 1978 by Charlie Hoogland and remains a privately held, family-owned business. The company owns the land on which its stores sit and also operates several sister companies, including Marco's Pizza and Stay Fit 24 fitness centers.

"The world of entertainment is growing more and more complicated," the chain says on its website. "Consumers have a lot of confusing choices and troublesome technology to overcome just to watch a movie. We see it very simply: rent a Blu-ray, purchase some popcorn, save some money, and enjoy your evening."

Family Video does not participate in revenue-sharing, preferring to buy movies outright and keep 100% of the rental proceeds. Total sales for 2016, according to Forbes, are estimated at \$400 million. And if a store's sales decline, Family Video has been known to shrink its footprint by putting up drywall and leasing out the extra space to such other companies as Subway or H&R Block.

◉ **FANDANGONOW** Owned by Fandango, one of the three big movie-ticket services, FandangoNow is

1	<i>Moana</i>	Disney
2	<i>Wonder Woman</i>	Warner Bros.
3	<i>Rogue One: A Star Wars Story</i>	Disney
4	<i>Trolls</i>	Fox
5	<i>Guardians Of The Galaxy: Vol. 2</i>	Disney
6	<i>Spider-Man: Homecoming</i>	Sony
7	<i>Logan</i>	Fox
8	<i>Fantastic Beasts And Where To Find Them</i>	Warner Bros.
9	<i>Doctor Strange</i>	Disney
10	<i>The Boss Baby</i>	Fox

*Excludes NBC Universal. Ranked by transactions
Source: comScore's Digital Download Essentials Industry Service

1	<i>Moana</i>	Disney
2	<i>Rogue One: A Star Wars Story</i>	Disney
3	<i>Wonder Woman</i>	Warner Bros.
4	<i>Sing</i>	Universal
5	<i>Spider-Man: Homecoming</i>	Sony
6	<i>Guardians of the Galaxy Vol. 2</i>	Disney
7	<i>Fantastic Beasts and Where to Find Them</i>	Warner Bros.
8	<i>Trolls</i>	Fox
9	<i>Despicable Me 3</i>	Universal
10	<i>Beauty and the Beast</i>	Disney

*Title sales are ranked by estimated units sold through the USA brick-and-mortar channel and excludes units sold into the rental and online channels. Ranked by sales revenue.
Source: comScore's Home Video Essentials

1	<i>The Accountant</i>	Warner Bros.
2	<i>Moana</i>	Disney
3	<i>Wonder Woman</i>	Warner Bros.
4	<i>Beauty and the Beast</i>	Disney
5	<i>Logan</i>	Fox
6	<i>Deepwater Horizon</i>	Lionsgate
7	<i>The Boss Baby</i>	Fox
8	<i>Passengers</i>	Sony
9	<i>Trolls</i>	Fox
10	<i>Why Him?</i>	Fox

* Title rentals are ranked by the estimated number of rentals by consumers in the U.S. brick-and-mortar, subscription-by-mail, kiosk and digital rental channels.
Source: comScore's Home Video Essentials

a transactional VOD service that was known as M-GO prior to its acquisition by Fandango in 2016. FandangoNow made quite a bit of waves in 2017. An early February distribution deal with HBO Home Entertainment gave the service individual current and catalog episodes of the network's original series, from \$2.99 an episode in standard-definition, to as little as \$38.99 for a full season. "Games of Thrones," "Silicon Valley," "True Detective," and "Westworld" are among the more recent HBO series included. Also in February, FandangoNow debuted its first original program, "Extreme Home Theaters," a series of short-form videos looking at standout home theater set-ups. The series is aimed directly at the home entertainment enthusiast.

Not surprisingly, given its ownership, FandangoNow is more aggressive than most sites in offering sales and rentals of on-demand titles tied to new theatrical releases. When "Blade Runner 2049" opened in October 2017, "Blade Runner: The Final Cut," the definitive edition of the 1982 sci-fi classic, was made available for rent at just \$1.99.

In March 2018, digital movie collection service Movies Anywhere added FandangoNow as its fifth digital retail partner. Amazon Prime Video, Google Play, iTunes and Vudu were partnered with the service at launch last year.

Parent Fandango was founded in 2000, with backing by a group of movie exhibitors. It was subsequently bought by Comcast; Warner Bros. Entertainment has a minority ownership as well. Also part of the Fandango family is the movie-review aggregator Rotten Tomatoes.

◦ **FLIXFLING** FlixFling is a streaming movie, TV, and music service that lets viewers watch content either through monthly subscription streaming or on demand, with a purchase option as well. The Philadelphia-based company has a catalog of more than 4,000 titles. Monthly subscriptions are \$7.99. Consumers also can go to the Channels page and subscribe to a select group of movies at various price points, such as Hollywood After Dark (romantic and "arousing" films like "Bikini Pirates," \$3.99 a month).

◦ **GAMEFLY** GameFly was founded in 2002 as the game industry's answer to Netflix: a video game-by-mail subscription service that currently offers games for PlayStation 4, PlayStation 3, PlayStation 2, PlayStation Vita, PSP, Xbox One, Xbox 360, Xbox, Wii U, Wii, GameCube, 3DS, DS and Game Boy Advance consoles.

GameFly's library contains popular new releases as well as older back-catalog games. Subscription pricing ranges from \$15.95 per month (one game) to \$36.95 per month (four games).

GameFly also sells new and used games and offers DVD rentals. And through the acquisition of Playcast Media Systems in June 2015, GameFly offers a game streaming service in 55 countries around the globe. In the United States, GameFly streaming is available on Samsung Smart TVs and the Amazon Fire TV. GameFly Streaming employs a patented compression engine to stream video games from such brands as Capcom, Disney, Sega, Square Enix, 2K, Ubisoft, and Warner Bros.

As a private company (the company filed for an IPO in 2010 but never went public), GameFly does not release financial information, but Hoover's estimates the company's 2017 revenue at \$34 million.

◦ **GAMESTOP** GameStop is the country's top video game retailer. Headquartered in Grapevine, Texas, a suburb of Dallas, the company operates 7,117 retail stores throughout the United States, Canada, Australia, New Zealand, and Europe. The company's retail stores primarily operate under the GameStop, EB Games, ThinkGeek, and Micromania brands.

GameStop traces its roots to Babbage's, a Dallas-based software retailer founded in 1984 by former Harvard Business School classmates James McCurry and Gary M. Kusin. In February 2018 GameStop announced the appointment of a new CEO: Michael K. Mauler, a 16-year veteran of the company. He replaced J. Paul Raines, who stepped down due to health issues. Raines died in March.

GameStop in November 2017 reported a total global sales increase of 1.5% to \$1.99 billion, resulting in consolidated comparable-store sales growth of 1.9% (+0.6% in the U.S. and +4.6% internationally). New hardware sales increased 8.8%, led by demand for Nintendo Switch, and new software sales increased 5.4% driven by a strong title lineup. Pre-owned sales declined 2.4%. Worldwide omnichannel sales increased by 38.6% on the strength of new hardware sales.

In January 2018, the company said that total global sales for the nine-week holiday period ended December 30, 2017 grew to \$2.77 billion, a 10.6% increase from the 2016 holiday period. Total comparable-store sales increased 11.8%, growing 13.7% in the U.S. and 7.9% internationally. Worldwide omnichannel sales increased 21.5%.

◦ **GOOGLE PLAY** Google Play is an online media store considered one of the big four digital sellthrough dealers, along with Amazon, iTunes, and Walmart's Vudu. The store sells and rents movies, TV shows, and other filmed content, as well as video games, digital music, magazines, and newspapers, and various Android apps.

Google Play was launched in March 2012, bringing together the Android Market, Google Music, and Google eBookstore under one brand. The services operating under the Google Play banner are: Google Play Books, Google Play Console, Google Play Games, Google Play Movies & TV, Google Play Music, and Google Play Newsstand. Google Play is available globally (except notably China).

Google's biggest success has been in app sales, with a January 2018 report from the App Annie research firm claiming that worldwide app downloads from the Google Play store came in at over 19 billion during the fourth quarter, 145% more than the number of apps downloaded from iOS App Store.

Google in March 2018 released ARCore 1.0, the first full version of its toolkit to let any developer easily make Pokemon Go-like augmented reality apps that place virtual objects into the real world. It also allows developers to publish those apps to its Google Play Store for the very first time. Google says ARCore apps will give users the chance to pretend to be a Ghostbuster and chase down ghosts lurking in their neighborhood, or step into a soccer stadium. An official Ghostbusters game called Ghostbusters World is in the pipeline, as is a look inside FC Barcelona's Nou Camp stadium, thanks to a partnership between Google and Snapchat.

◦ **HBO NOW** HBO Now is a premium subscription service launched in 2015 that provides consumers with HBO programming for \$14.99 a month, without a cable package. HBO Now offers on-demand access to HBO's entire library of original series, as well as original films and documentaries, along with acquired films from its library through the cable channel's content partners (such as 20th Century Fox, Universal Pictures and HBO sister company Warner Bros. Pictures).

As of February 2018, HBO Now has 5 million subscribers, according to Bloomberg.

◦ **HULU** Hulu is one of the big three streaming giants, behind Netflix and Amazon. The SVOD service is jointly owned by Comcast Corp., Time Warner, 21st Century

Fox, and The Walt Disney Co. It offers two streaming subscription plans: one with limited commercials for \$7.99 a month, and a commercial-free plan for \$11.99.

Hulu has a big library of art-house and foreign films, although its strength lies in TV series. Hulu offers next-day streaming of network TV shows and also is developing a growing number of original series, including "The Path," with Aaron Paul of "Breaking Bad" fame, and the teen soap opera "Runaways." In 2017 Hulu won eight Emmy Awards for "The Handmaid's Tale," a web television series about a dystopian future following a Second American Civil War in which women, called "Handmaids," are forced into sexual and child-bearing servitude.

In May 2017 Hulu launched a virtual MVPD platform, offering access to more than 50 channels for \$39.99 per month. Those channels include ABC, CBS, FOX, NBC and local affiliates, along with Cartoon Network/Adult Swim, CNN, ESPN, FX, USA Network and many more. At the same time Hulu announced that it has signed a deal with Scripps Networks Interactive to bring their channels – including Food Network, HGTV, and Travel Channel – into the on-demand and live TV service.

In March 2018, Hulu launched a personalized March Madness experience that included push notifications for game start times.

◦ **HUMBLE BUNDLE** Humble Bundle Inc. sells downloads of popular video games, with a portion of the proceeds going to charity. Five percent goes to the American Red Cross, and another 5% goes to whichever charity the buyer chooses. Initially the store sold only "Humble Bundles," collections of independently developed games offered to customers at whatever price they chose to pay. Several of the bundles, available for just two weeks, surpassed \$1 million in sales. Bundles now include games from established developers and AAA publishers, with a regular store front for individual game sales.

The Humble Bundle concept was initially run by Wolfire Games in 2010, but by its second bundle, the company was spun off to manage the promotion, payments, and distribution of the bundles. In October 2017, the company was acquired by Ziff Davis through its IGN Entertainment subsidiary, though will continue to operate as a separate subsidiary.

By September 2017, the total amount of money raised for charity through Humble Bundle sales exceeded \$100 million across 50 different charities.

1	<i>Call of Duty: WWII</i>	Activision Blizzard
2	<i>NBA 2K18</i>	Take Two Interactive
3	<i>Destiny 2**</i>	Activision Blizzard
4	<i>Madden NFL 18</i>	Electronic Arts
5	<i>The Legend of Zelda: Breath of the Wild</i>	Nintendo
6	<i>Grand Theft Auto V</i>	Take Two Interactive
7	<i>Tom Clancy's Ghost Recon: Wildlands</i>	Ubisoft
8	<i>Star Wars: Battlefront II 2017**</i>	Electronic Arts
9	<i>Super Mario Odyssey*</i>	Nintendo
10	<i>Mario Kart 8*</i>	Nintendo

PC Games Software only includes full games downloads from Steam and excludes other PC digital retailers such as Origin and Uplay.

*Digital sales not included. **PC digital sales not included.

Source: The NPD Group, Inc.

1	<i>League of Legends</i>	Tencent
2	<i>Honour of Kings</i>	Tencent
3	<i>Dungeon Fighter Online</i>	Nexon
4	<i>Fantasy Westward Journey</i>	NetEase
5	<i>Crossfire</i>	Neowiz Games
6	<i>Monster Strike</i>	Mixi
7	<i>Clash Royale</i>	Supercell
8	<i>Clash of Clans</i>	Supercell
9	<i>Fantasy Westward Journey Online II</i>	NetEase
10	<i>Fate/Grand Order</i>	Aniplex Inc.

Source: SuperData Research, Inc.

○ **MICROSOFT XBOX GAME STORE** The Microsoft Xbox Game Store is an online store where gamers can buy consoles, games, VR headsets, and accessories. Members who sign up for Xbox Live Gold - \$9.99 a month or \$59.99 a year – get benefits such as free games and demos as well as discounts on a weekly group of featured games.

Microsoft last year launched Xbox Game Pass, a video game subscription service with 100 Xbox One and Xbox 360 games, all fully downloadable. In February 2018 Microsoft announced that all Xbox One exclusive games would be heading to Xbox Game Pass.

○ **MICROSOFT MOVIES AND TV** Microsoft Movies and TV is an online video service that offers movies and TV shows for rent as well as purchase. Purchased content can be viewed on any Windows 10 or Xbox device or downloaded for future offline viewing. It is available in more than 20 countries.

In October 2017, Microsoft updated Microsoft Movies and TV with support for 360-degree video (via Aggionamentilumia). This new feature is part of Microsoft's Mixed Reality efforts in Windows 10, and will use a motion controller to be able to move around the 360-degree content.

Microsoft's Movies & TV isn't currently available on the web, iOS, or Android, but in March 2018 a company spokesman said it may join Movies Anywhere, a digital movie service backed by five of the six major

studios as well as Amazon, FandangoNow, Google Play, iTunes, and Walmart/Vudu. "Microsoft is committed to delivering rich entertainment experiences to our customers," a Microsoft spokesperson told Thurrott.com. "And we're in discussions with Movies Anywhere about bringing their service onboard."

○ **NETFLIX** Netflix is the 800-pound gorilla of the streaming world. Originally a disc-by-mail video rental service aimed at consumers frustrated with late fees and return trips to video stores, Netflix took the monthly subscription model to the nascent streaming world in 2007 and never looked back.

Based in Los Gatos, California, Netflix expanded its rapidly growing subscription streaming business internationally, beginning with Canada in 2010, and within six years was operating in 190 countries. Netflix began producing original content in 2013, with its first series, "House of Cards," and now vows to ultimately produce 50% of the content it airs. Netflix released an estimated 126 original series or films in 2016, more than any other network or cable channel.

As of January 2018, Netflix has nearly 118 million paying subscribers worldwide, nearly 55 million of them in the United States. Overall, Netflix generated net income of \$185.5 million on revenue of \$3.3 billion in 2017 – up from income of \$66.7 million on revenue of \$2.5 billion in 2016.

Founder Reed Hastings in March 2018 said the company expects to generate \$15 billion in user fees in 2018 – almost twice the \$8 billion it will spend on original content. Netflix now has more domestic subscribers than all of cable television combined. Speaking at a Los Angeles tech event, he reiterated Netflix has no desire to pursue live sports – unlike rival Amazon Prime Video – focusing instead on original episodic programming and feature films. Also in March, Netflix announced its first original (and local language) programs for SVOD services in Turkey and Poland.

◦ **NINTENDO ESHOP** The Nintendo eShop is a digital distribution service powered by the Nintendo Network for the Nintendo 3DS, Wii U, and new Nintendo Switch, and by a dedicated online infrastructure for Nintendo Switch. It was founded in June 2011.

◦ **PLAYSTATION** The Sony-owned PlayStation Store is a digital media store aimed at users of Sony's PlayStation 3, PlayStation 4, PlayStation Vita, and PlayStation Portable game consoles via the PlayStation Network. The store has five divisions and is available in approximately 70 countries.

The PlayStation Store (also known as PlayStation Games) offers a wide range of downloadable content both for purchase and for free. This content includes full games, add-on content, playable demos, themes, and game/movie trailers.

PlayStation Video sells and rents digital movies and sells digital TV shows. The service in 2015 premiered its first original series, "Powers," based on the Marvel comic book.

PlayStation Vue (PS Vue) is a streaming TV service owned by Sony. Launched in March 2015 as a multi-channel video programming distributor, PlayStation Vue combines live TV (various cable-originated television channels), on-demand video, and cloud-based DVR to stream movies, TV shows, and sporting events directly to a PlayStation console or other supported device – including smart TVs, digital media players, and apps – without a subscription to a cable or satellite television provider. As of December 2017, the service had approximately 455,000 subscribers.

PlayStation Music is an on-demand music streaming service powered by Spotify. Subscribers get free and premium access to over 30 million tracks. The service is available in 41 markets via the PlayStation Network on PlayStation 3, PlayStation 4, Xperia tablet, and mobile devices.

And PlayStation Now is a video game streaming service with more than 600 PS3 and PS4 games that are streamed directly to users' PS4s or PCs.

◦ **REDBOX** Redbox is the country's leading video rental dealer, operating not a chain of physical stores but, rather, a fleet more than 40,000 bright-red video rental kiosks outside Walmarts, supermarkets, and drug stores. Consumers can rent DVDs, Blu-ray Discs, video games, and in a growing number of kiosks, 4K Ultra HD Blu-ray Discs.

The Seattle-based company for years was at odds with studios that claimed its low-cost rentals cannibalized movie sales, prompting three of the six majors to institute month-long holdbacks. But those battles are now largely over, with all studios selling new product to Redbox-direct and on time-with the exception of The Walt Disney Co., which is suing the kiosk operator over the sale of digital movie codes.

A little more than three years after abandoning a failed SVOD venture with Verizon, Redbox in December 2017 launched Redbox On Demand, a digital distribution service with more than 6,000 movie and TV show titles available for on-demand streaming or purchase and digital deals with all major studios except for Disney.

"Our customers come to us for that transactional experience - it's Friday night, and they want to watch a specific movie," Redbox CEO Galen Smith told Media Play News in January 2018. "We try to satisfy them with our kiosk network, but there are occasions where you might not want to go out and rent a movie from a kiosk. So rather than lose that transactional occasion, we're giving them the chance to get it online."

Redbox in January 2018 rolled out a revamped loyalty program, Redbox Perks. Replacing Redbox Play Pass, Redbox Perks gives customers more opportunities to earn points, which can then be redeemed for free rentals and other rewards, through a tiered VIP program.

Under Redbox Perks, instead of just earning points per rental, customers will now earn points per night. Additionally, customers now have the opportunity to earn higher point values when renting Blu-ray Discs and video games.

In March 2018, new data from TiVo said the percentage of consumers renting or purchasing movies from Redbox increased in the fourth quarter 2017 from Q3. In a survey of 3,000 respondents, TiVo found that 12.5%

of respondents used Redbox in Q4 compared to about 10% in Q3. Redbox usage topped iTunes (7.9%), Google Play (7.2%), YouTube Movies (4.8%), Vudu (3.7%), CinemaNow (2.2%), Flixster (1.5%), and other (1.4%).

◦ **SHOWTIME ANYTIME** The Showtime network's premium subscription service launched in July 2015. For \$10.99 a month, subscribers get instant and unlimited access to commercial-free Showtime original series, movies, documentaries, comedy specials, sports and more. Subscribers also can download full episodes and movies to their favorite mobile devices and watch them offline, whenever and wherever they want to. Showtime Anywhere is one of the few streaming services to offer this option.

◦ **SONY CRACKLE** Sony Crackle (prior to January 2018, just Crackle) is a free ad-supported video streaming site owned by Sony Pictures Home Entertainment. The site was founded in the early 2000s as Grouper and rebranded to Crackle in 2007. It offers original web shows, movies, and TV shows, including many Columbia Pictures, Funimation Films, Screen Gems, Sony Pictures Classics, and TriStar Pictures films and

Sony-distributed TV series such as "Damages," "Rescue Me," "The Shield," and "Seinfeld."

In January 2018 Sony Crackle released a virtual reality experience as it headed into production of season two of the original series "Snatch." The Snatch VR Heist Experience is a six-minute experience designed to transport the viewer into the middle of a diamond heist. Initial availability was limited to the Sony PlayStation VR, which connects to PlayStation 4 gaming consoles.

◦ **STEAM** Steam is the largest digital distribution platform for PC gaming. By early 2018, the service had more than 150 million registered accounts, with a peak of 18.5 million users online at the same time. The success of the Steam platform has led to the development of a line of Steam Machine microconsoles, as well as the SteamOS operating system.

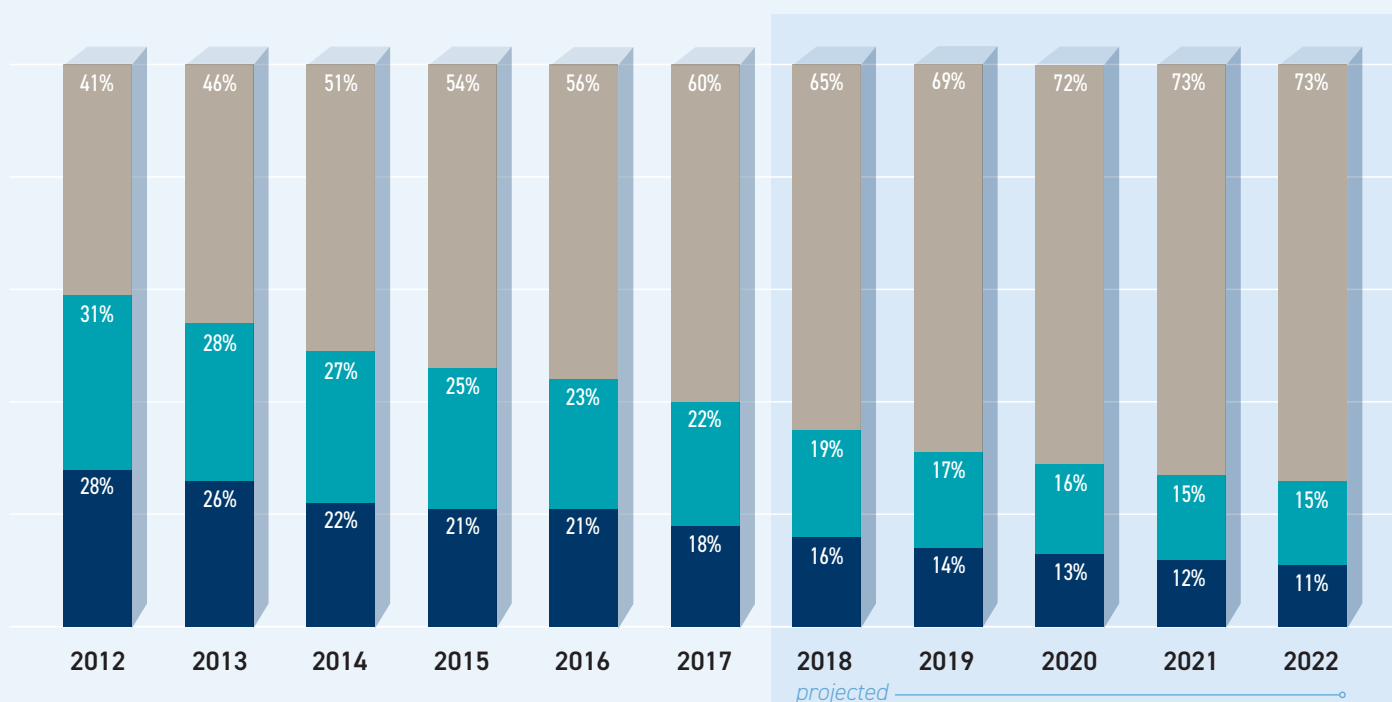
The served launched with seven games in 2004 and as of December 2017 now sells over 18,000 games, nearly 8,000 of which were added in 2017. It also offers a selection of movies for rent.

Steam is available in most countries and 26 languages. The site's games can be accessed on PC, Mac, Linux box, mobile devices, and connected TVs.

DISC RENTAL BUSINESS MODELS 2012-2022

(% of Consumer Revenues)

■ Kiosk
■ Subscription
■ Traditional



Source: IHS Markit

ema 2018 Annual Report

◦ **TARGET** Target Corporation is the second-largest discount store retailer in the United States, behind Walmart. The Minneapolis chain, with 1,812 stores as of 2017, has long been a big seller of DVDs and Blu-Ray Discs and along with Walmart was a key player in driving mass adoption of DVD, using discs as a loss leader to drive traffic into its stores.

In February 2018, Billboard reported that in the fourth quarter of last year Target informed music and video suppliers that it wants to switch to scanned-based trading. As of February 1, the chain only pays for DVDs after they are scanned while being rung up at the register or sold online, Billboard says, with music suppliers slated to go the same route in Spring 2018.

◦ **TOYS “R” US** The long-struggling toy store chain filed for Chapter 11 bankruptcy protection in September 2017 but was unable to successfully reorganize and decided to liquidate on March 15, 2018. The veteran toy retailer sold family-friendly DVDs and Blu-ray Discs, as well as video games, in its physical stores and on its website. The chain as of March 2018 had 881 Toys “R” Us and Babies “R” Us stores in the United States, Puerto Rico and Guam, and in 840 international stores and over 265 licensed stores in 38 countries and jurisdictions.

◦ **TRANS WORLD ENTERTAINMENT** The last of the big music chains, Trans World Entertainment sells CDs, DVDs, Blu-ray Discs, and video games through its nearly 260 U.S. stores – which operate under various brands, primarily F.Y.E – and their websites. In 2016, Trans World Entertainment acquired etailz Inc., an independently operated digital marketplace retailer across all product categories. etailz uses a data-driven approach and proprietary software to grow brands on Alibaba, Amazon, eBay, Jet, and Walmart in the U.S. and internationally.

In January 2018, the company reported that sales at its flagship F.Y.E. chain in its latest fiscal year declined 15% to \$248 million from \$291.7 million. etailz.com revenue topped \$158 million. “The F.Y.E. segment continues to be impacted by declining mall traffic, the general accelerated decline in the physical media business and the specific lack of strong franchises resulting from the lowest summer box office in 25 years,” CEO Mike Feurer said in an earnings release.

◦ **TWITCH** Owned by Amazon, Twitch ventured beyond video game streaming in April 2017 when it began selling PC games and in-game content on its site. As of



Redbox CEO Galen Smith (Photo courtesy Redbox)

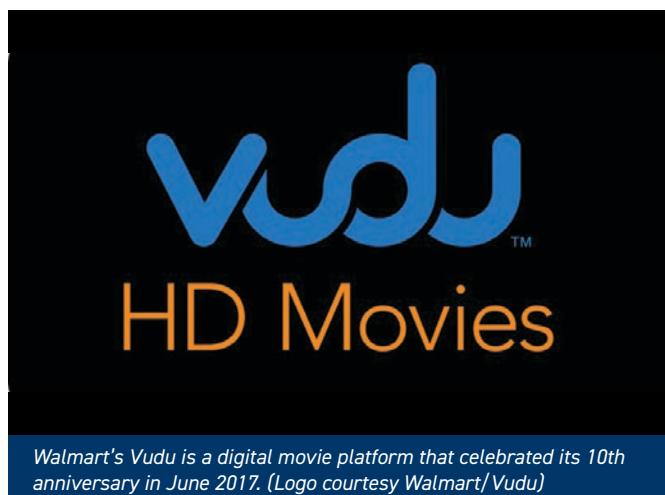
February 2018, it has 2 million broadcasters monthly, and 15 million daily active users.

In February 2018, Amagi, a global leader in cloud-based technology for TV and OTT broadcasters, announced that Cinedigm, a leading independent content distributor, has deployed the company's cloud-based channel playout platform, CLOUDPORT, to bring its CONtv channel to Twitch. CONtv is a premier digital network devoted to the fan space, offering an original slate of programming, as well as a vast digital catalog of over 2,800 film and TV titles, encompassing sci-fi, horror, fantasy, anime, cult, grindhouse, and comic con coverage. The 24/7 linear offering on Twitch features a variety of the fan-centric content aligned with the streaming service's audience.

◦ **VERIZON** In the wake of its June 2017 acquisition of Yahoo! for \$4.5 billion, Verizon is looking to leverage the billion-plus combined users of Yahoo and AOL (which Verizon acquired for \$4.4 billion in 2015) to launch a new over-the-top service, targeting digital-only consumers.

Nomura in December 2017 reported that, after a series of delays, the company will launch its platform by the end of 2018. Also in December, Verizon announced a partnership with the NFL to distribute live football games on Monday, Thursday, and Sunday nights – putting it in direct competition with AT&T's DirectTV Now service.

According to a January 2018 Tech Crunch report, Verizon's service will bundle content together in themed “channels,” each its own standalone app and with a focus on a specific topic like news, sports, or entertainment. All this would still be separate from the company's existing Go90 mobile video service as well.



◉ **WALMART/VUDU** Unlike its fellow mass merchant, Target Corporation, Walmart shows no signs of cutting back on packaged media sales. The footprint devoted to product has shrunk a bit over the years, but the company remains one of the top retailers of DVDs and Blu-ray Discs, as well as video games.

Based in Bentonville, Arkansas, Walmart was founded by Sam Walton in 1962 and as of January 31, 2018, has 11,718 stores and clubs in 28 countries, operating under 59 different names. Of those stores, 4,761 are in the United States, accounting for more than 62% of total sales.

Walmart in February 2018 reported a low single-digit increase in same-store entertainment sales during the fourth quarter (ended January 31), driven by the winter holidays. It was the strongest entertainment quarter in the fiscal year. (Walmart doesn't disclose actual revenue figures.) "Entertainment" includes electronics, toys, cameras and supplies, photo processing services, cellular phones, cellular service plan contracts and prepaid service, DVDs, Blu-ray Disc movies, music CDs, video games, and books.

Walmart also owns Vudu, a digital movie platform that celebrated its 10th anniversary in June 2017 by offering 10-cent movie rentals on select catalog titles. Other special offers included \$4.99 weekend movie rentals and \$10-and-under TV weekends. Vudu in March 2017 upgraded its app, giving users — for a fee — access to cloud-stored digital versions of their DVD/Blu-ray Disc collections from a smart phone or mobile device. Converting discs to standard-definition costs \$2 each, while converting them to HD (1080p) costs \$5. The app effectively extends Walmart's in-store disc-to-digital service, which was launched with studio support in



2012. Consumers can also convert discs from a computer at Vudu.com.

In August 2017, Vudu arrived on Apple TV. The new app allows users to watch the movies and TV shows saved to their Vudu libraries, but like its iOS counterpart, the Apple TV version of Vudu doesn't allow them to rent or buy videos through the app directly. Instead, they have to make a purchase through the browser or another device first.

◉ **YOUTUBE RED** YouTube Red is a subscription streaming service launched by YouTube as a paid, premium alternative to its free service. YouTube Red provides advertising-free streaming of all videos hosted by YouTube, offline play and background playback of videos on mobile devices, access to advertising-free music streaming through Google Play Music, and access to "YouTube Red Original" series and films.

The service was originally launched in November 2014 as Music Key, offering only ad-free streaming of music and music videos from participating labels on YouTube and Google Play Music.

Engadget in February 2018 reported that, while Facebook and Netflix are spending billions on new programming, "YouTube is said to be holding its investments at current levels. Google's video wing is only spending 'a few hundred million' on original shows for Red this year.... Unlike the competition, YouTube also has a live TV service that's expanding in reach. Google could just be taking a 'wait and see' approach to its investments this year."



MARK FISHER

Q&A

Q. How would you sum up the current state of the home entertainment business?

In a word, evolving. We are seeing consumers continuing to transition from traditional physical media by supplementing it or replacing it with digital. Hardware is evolving, with even higher quality video and audio thanks to 4K, UHD, and HDR. The business models are changing, with SVOD, EST, TVOD, and AVOD.

And that evolution is happening in video games as well. Digital is growing, new hardware like the Nintendo Switch and VR headsets are changing the experience, and code cards have created a new revenue source for retailers.

The evolving industry obviously creates some challenges. The industry is still trying to figure out how to change the old dynamics to better meet the 21st century consumer's expectations for access to content. But we're figuring it out and as we do so it's an exciting time in our industry.

Q. What were the most significant trends we saw develop in 2017?

First and foremost, content, content, content. There is more content available in more places than ever before. And original content has really transformed the OTT ecosystem – there's a tremendous amount of really good original content out there. I can't keep up with it all! It's axiomatic, but content truly drives consumer engagement.

Related to that is shared entitlements for content. Movie Anywhere was able to offer more content, from more studios, through more retailers. The result is that it is now more attractive for people to store their content in the cloud, access it on a variety of devices, and view it either online or offline. That's transformational.

The third trend is the growth of 4K, UHD, and HDR, increasing the quality of the presentation of the content.

In the video game sector, the dominance of mobile gaming continued to expand. That shows that it is engaging all consumer segments.

Q. What do you foresee happening in 2018?

I expect to see four things in 2018: growth in TVOD, broad embrace of Movies Anywhere, more consumers owning 4K devices, and industry consolidation.

Regarding TVOD, I suspect that some consumers will start to look for new release features that are not available on SVOD, but won't necessarily want to purchase them. TVOD provides an excellent option in the middle between SVOD and EST.

I'm sure we are going to see more content providers and retailers engage with Movies Anywhere. I think the potential for Movies Anywhere is tremendous and everyone will want to participate.

As more consumers are exposed to the quality leap of 4K, and as prices continue to decline, they will switch to 4K devices just like what happened with HDTVs a few years back.

The pending Disney acquisition of Fox and the liquidation of Toys 'R' Us are two examples of industry consolidation. It's important to keep in mind that industry consolidation creates opportunities for others to expand or enter the market to fill any voids that may be created.

Q. The shift toward same-day home release of movies appears to have stalled. What is the future of PVOD – will it ever happen?

It will happen when the consumer makes it happen. The continued improvement in the in-home viewing experience, in terms of hardware and 4K, makes consumers desirous

of viewing the latest hit movies at home at the earliest possible date. And consumers will find a way to get the content they desire one way or the other - including, unfortunately, by piracy - in that window between theatrical and home video release. Eventually, those in a position to make PVOD happen will realize it's best to meet that consumer demand by providing a PVOD option.

But PVOD is disruptive, so there is an institutional bias against it from those who benefit most from the current windowing - movie theaters. They will eventually have to yield. If the current softness in the theatrical box office continues, the studios will become more willing to experiment to find ways to replace the lost revenue.

Q. With the continued surge in streaming, are we seeing a fundamental shift in our entertainment habits? Are we less inclined to watch new movies simply because of streaming's low price and convenience?

Perhaps, but I view it as more of a transient phenomenon. SVOD certainly has an attractive value proposition and has gotten the consumer to embrace digital home video. The trade-off for consumers is to accept what's available through streaming services as "good enough" to meet their entertainment needs, given the price and convenience.

I think there is going to come a time when "good enough" will not be good enough anymore. Then consumers will look elsewhere for their desired content, including new release product on EST, TVOD, or discs.

Q. So you think movie sales, physical and digital, and the TVOD model in general can compete with the lure of an all-you-can watch buffet for \$10 a month?

Absolutely. It's all about the quality of the content. Look, how does a \$60,000 Mercedes compete with a \$24,000 Ford Fusion? They both serve the same basic function, but there is still a demand for the Mercedes. Likewise, discs, EST, and TVOD are not competing on the basis of price, but rather on the quality of the content, the selection, and when it can be accessed.

Q. All the major SVOD services seem to have their own original content. Do you think that's cannibalizing the market for studio features?

Not at all. With their original content, the SVOD services are following a well-traveled path of retail of providing exclusives to differentiate themselves in the marketplace. The ability to watch "The Man in the High Castle" on Amazon doesn't make me any less likely to purchase or rent "The Shape of Water."

Q. After a lot of attention in 2016, VR seemed to stall in 2017. Do you foresee an uptick, or are we looking at a niche business, like 3D?

There are a number of areas where VR is being used effectively, including video gaming to a degree. But VR has not gotten the traction I would have expected in home video. No one has yet to figure out how to make it a compelling experience rather than, and I hate to use this word, a gimmick in home video. I expect that someone will figure out the formula for transforming VR in home video into a compelling experience.

Q. Do physical goods retailers still have a role to play in the video game market?

Yes, they do. There remains a significant segment of video game consumers that prefer discs, and the physical goods retailers have expanded their offerings, through code cards and the like, to service those

who value the digital versions of games. The physical goods retailers, both brick and mortar and online, also serve an important function in the video game ecosystem by providing a venue for consumers to explore and discover the breadth of video game offerings.

Q. What's on EMA's agenda for 2018?

EMA is focusing on four key initiatives in 2018.

First, we are increasing and enhancing our support for creating efficiencies in the digital supply chain, both for video and for video games. We have increased our human resources investment in this area and are increasing the scope and frequency of our activities.

Second, we are building a bigger, broader, and better Los Angeles Entertainment Summit, the industry's premier annual business-to-business get-together. We are going to accommodate more market segments to make sure the full spectrum of industry business models can participate.

Third, and related to the second, we are growing our representation to additional segments of the OTT market, specifically SVOD and AVOD. Historically, EMA developed from a transactional business model, and we're breaking out of that mindset to be representative of home entertainment today.

Finally, to fill a need in the video game sector, we are launching our first-ever Game Summit. Similar in format to the Los Angeles Entertainment Summit, the EMA Game Summit will consist of two days of one-on-one business meetings between video game publishers and key retailers.

We've got a lot on our plate, but we realize we need to invest in these areas to support the industry.○

Overview of the
ENTERTAINMENT
MERCHANTS
ASSOCIATION

EMA

Overview



The Entertainment Merchants Association (EMA) is a not-for-profit international trade association whose mission is to:

- *Protect the rights of,*
- *Foster the health and vitality of, and*
- *Provide a forum for those engaged in the sale, rental, and/or commercial delivery of video or video game content to consumers through physical media or over-the-top Internet-based delivery.*

EMA-member companies operate physical and digital retailing, digital platforms, and streaming services around the world, offer content for retailers and streaming services, and provide service and technology for the industry. Membership comprises the full spectrum of retailers, distributors, the home video divisions of major and independent motion picture and television studios, video game publishers, and other related businesses that constitute and support the \$55 billion home entertainment industry.

EMA's activities include presenting conferences, networking, and information sharing opportunities, developing and promoting industry standards, specifications, and best practices, engaging with government entities, and providing education assistance.

EMA was established in April 2006 through the merger of the Video Software Dealers Association (VSDA), founded in 1981, and the Interactive Entertainment Merchants Association (IEMA), organized in 1997. [o](#)

Events



Digital EMA Annual Forum at CES

(January, Las Vegas) – An overview of the latest industry trends, presentations by thought leaders, and an update on EMA's digital activities that advance the digital supply chain, digital retailing, and the distribution of movies and TV content.



NAVD Business Sessions

(Spring, Los Angeles) – Key video distributors discuss business issues in one-on-one meetings with major motion picture studios.



Digital EMA Annual Forum at NAB

(Spring, Las Vegas) – A discussion of topics related to OTT delivery of video content.



Video Game Summit

(Varies, Texas and Minneapolis) – Two days of one-on-one business meetings between video game publishers and key retailers.



Digital Media Pipeline

(Spring, New York City & Fall, Los Angeles) – One-day conferences for digital entertainment content owners, retailers, and service & technology providers focusing on business-to-business opportunities, consumer trends, and the latest technologies in the digital delivery of home entertainment to consumers.



Los Angeles Entertainment Summit

(Summer, Los Angeles) – The premier business-to-business forum for retailers, distributors, motion picture studios, and other home entertainment industry suppliers. The Summit is comprised of three days of one-on-one meetings, research presentations, and networking events. This event has also provided a platform for fundraising by the Cystic Fibrosis Foundation, and to-date LAES has raised more than \$1.5 million for CFF.



Digital EMA Annual Forum at LAES

(Summer, Los Angeles) – An overview of the latest industry trends, presentations by thought leaders, and an update on EMA's digital activities that advance the digital supply chain, digital retailing, and the distribution of movies and TV content.



Digital EMA Salons

(Quarterly) – Casual evening get-togethers featuring networking and roundtable discussions for those engaged in digital entertainment. Salon events are held throughout the year in California and New York City.

Supply Chain and Retailing Activities

Video Retail and Game Retail Councils – These councils of retailers and distributors explore, evaluate, and employ opportunities to grow and sustain the health of these industries. These councils also meet with the industries' key product suppliers.

Digital EMA – EMA's community of retailers, distributors, content providers, and service & technology providers identifies and pursues opportunities to develop a growing and healthy business of digital video and video game distribution.

Digital Supply Chain Initiatives – Within the Digital EMA community, the Digital Supply Chain Committee and associated workgroups seek solutions that enable innovation and increase efficiency, reliability, and scalability in the digital distribution of home entertainment:

- **Digital Supply Chain Committee** – Oversees and prioritizes the initiatives undertaken by the digital supply chain workgroups in order to optimize the delivery of digital content and its associated components from the content providers through service providers and ultimately, through retailers/distributors, to the consumer.
- **Asset Ordering and Tracking Workgroup** – Currently in the process of drafting and publishing best practices and specifications for digital asset ordering and tracking.
- **Avails Workgroup** – Developed and evangelizes a standard structure for the communication of content availability metadata via both Excel and XML from content providers to digital retailers and distributors.
- **Media Manifest/Metadata Workgroup** – Jointly developed with MovieLabs and promotes the Media Manifest Delivery Core, which is used to identify assets – such as video and audio files, trailers, subtitles, closed captions, and images – that are delivered to an online distributor for a video title, thus organizing the “packaging” of the multitude of files needed for online video; developed and promotes EMA's Metadata Structure.
- **QC Nomenclature Workgroup** – Standardized the terminology for 116 errors commonly encountered in onboarding and provided a description for each; currently updating and expanding the terms, creating error codes for each, and developing an error code information model.
- **SVOD Rights Communication Workgroup** – Identified retailer requirements for communication of rights to titles licensed for subscription VOD; currently coordinating with content providers to determine their needs.

Public Policy Advocacy

EMA is engaged at the federal, state, and local level on issues of importance to the home entertainment industry. EMA's public policy priorities are to:

- *Protect retailers' right to sell and rent lawfully made copies without restraint (the First Sale Doctrine).*
- *Support strong laws against video piracy and vigorous enforcement of those laws.*
- *Support voluntary enforcement of entertainment ratings.*
- *Oppose restrictions on entertainment based on violent content.*
- *Oppose discriminatory taxation of home entertainment products.*
- *Support efforts to combat Organized Retail Crime.*
- *Ensure that secondhand goods laws do not unduly interfere with the market for used videos and video games.*

EMA Scholarship Foundation



The Scholarship Foundation awards scholarships to undergraduate and graduate students.

Employees and families of employees of all member companies are eligible to apply. Since its inception, the Foundation has provided financial assistance totaling more than \$1,000,000.

Board of Directors

The Entertainment Merchants Association is governed by a Board of Directors representing the key retailers and distributors of both physical and digital entertainment content for filmed entertainment and video games and the companies that service the industry. The Board is responsible for the association's policies and strategic direction.

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Acknowledgements

EMA expresses its gratitude to the following companies that contributed data for this report:

App Annie
Carnegie Mellon University
comScore
Consumer Technology Association
DEG: The Digital Entertainment Group
Deloitte
Digital TV Research
Entertainment Software Association
Filmora
Futuresource Consulting
Home Media Magazine
IDC
IHS Markit Technology
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J.P. Morgan
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Frank N. Magid Associates
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DESIGN & LAYOUT

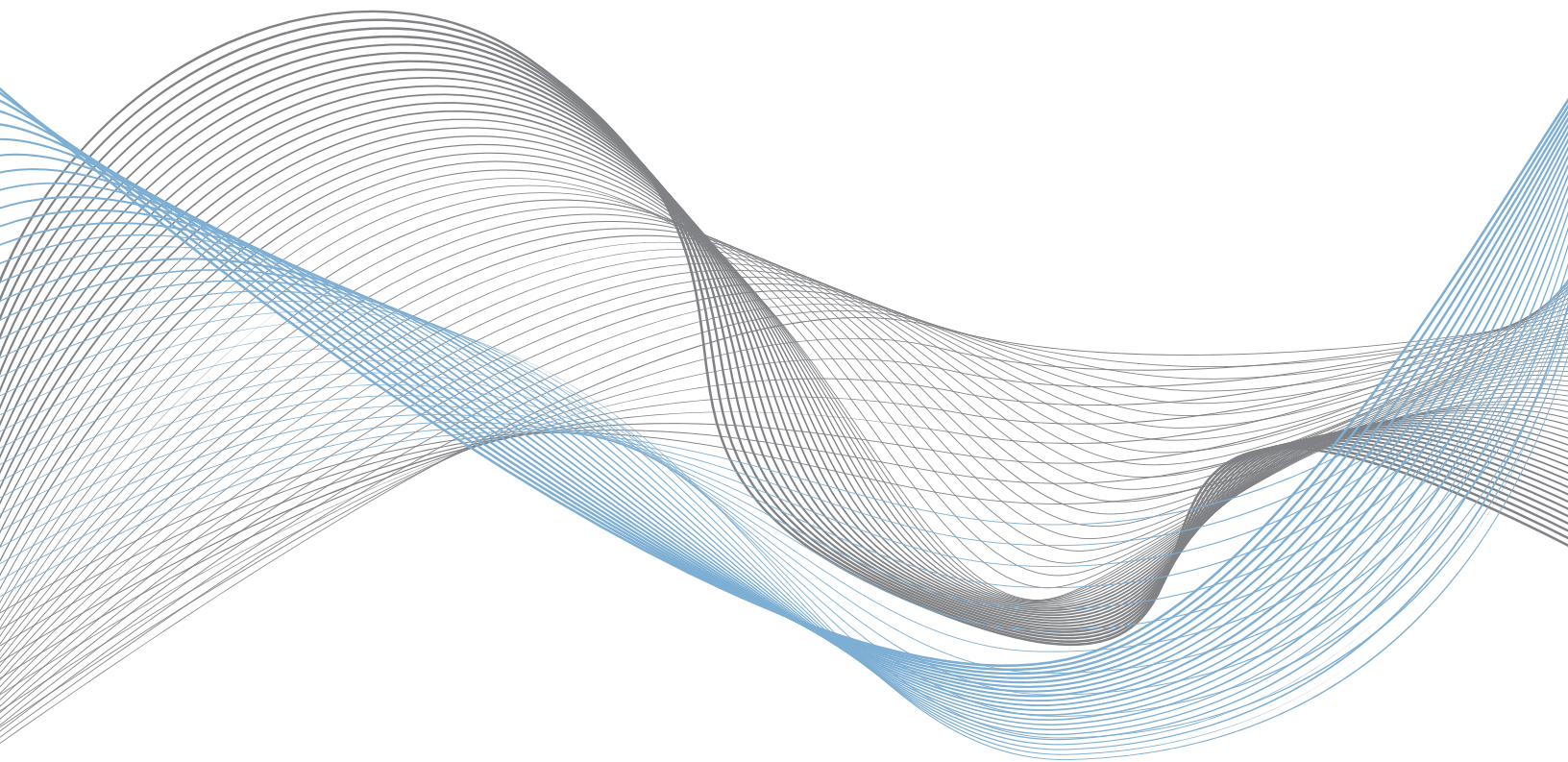
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