

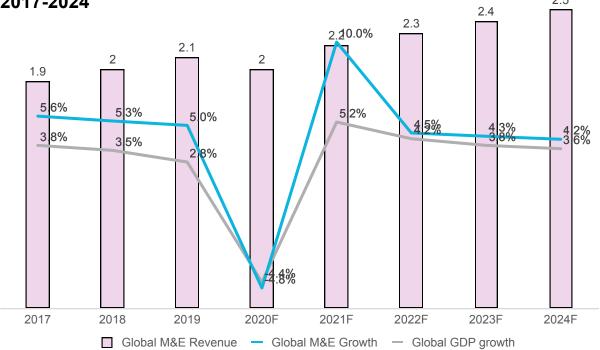
Summary

- COVID-19 has had an unprecedented impact on the media and entertainment industry. It has accelerated many of
 the positive and negative trends that we have seen develop over the last 10 years, and has made the already
 complex ecosystem even more difficult to navigate.
- While the underlying media and entertainment market has declined as a result of the current macro-economic conditions, this is not expected to be long term. Pockets of growth still exist in some sub-segments and there is evidence to suggest the recovery to be swift.
- The virus has touched every aspect of the industry—it has affected the way we produce and distribute content, and
 perhaps given rise to one of the strongest accelerations and disruptions to what content consumers are looking for
 and what formats in which they want to view it in.
- This document is designed to help our community understand and navigate this shifting landscape by:
 - Articulating NAB Amplify's view on the shifting landscape
 - Expert commentary from our industry leading community landscapes
 - Providing a robust evidence and data framework to support you and your businesses growth

Market Overview and Trends

While the global media and entertainment market has felt the impact of COVID-19, forecasts estimate the recovery to be accelerated

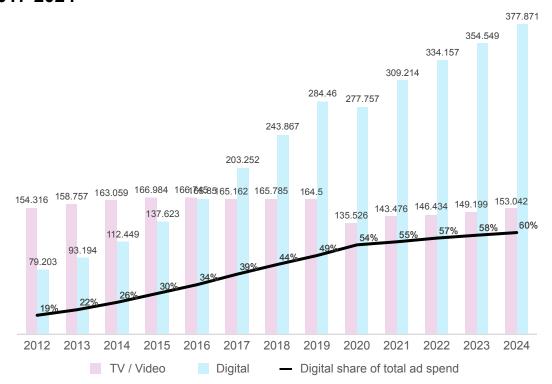
Global Media and Entertainment Market Size USD TRN 2017-2024



- The impact of COVID-19 has led to one of the sharpest declines in the media and entertainment markets history, halting production of TV shows and films as well as impacting the revenue gained from areas such as cinemas (which have had to close temporarily).
- The existing drop is vaguely in line with the impact that the virus has had on the broader economy. However, the bounce back is expected to outperform global GDP. This is expected to be driven by:
 - Sustained consumer demand
 - Technological advancements
 - A large scale return to production
 - Growth in advertising spend
- We have seen COVID-19 accelerate many trends that were already present in the market before the outbreak. Consumers continue to look to build their own media bundles where they will pay for unlimited access of content they want to view. This will continue to drive growth in the digital aspects of the market at the expense of traditional broadcast channels.

Digital ad spend has been taking share from traditional channels since 2016—the current climate has impacted all spend, digital being the least affected

Global TV, Video and Digital Ad Spend USD BN 2017-2024



- Digital spend gaining traction within the advertising space is not news, however the pandemic has shown us that digital ad dollars are more resilient to downturns.
- Digital dollars are expected to decline 2.4% in 2020 with an 11.3% incline going into 2021, while TV/video advertising is expected to fall by 17% in 2020 with an increase of 6% moving into 2021.
- It is no surprise that ad spend has declined across all segments, however as recovery begins there is expected to be an uptick throughout the industry.
- The pandemic has somewhat introduced new behavior to consumers. An already digital savvy audience has become reliant on digital channels and this behavior is expected to continue resulting in digital ad spend accounting for 60% of the ad spend by 2024.

Source: Group M, NAB insight and analysis

Pre-COVID-19, we took a look at trends that were present in the market ...

Digitalization

New Formats

Streaming

Personalization

Ad Market

Cloud

Consolidation: More and more content consolidation in the U.S. is expected as traditional media companies fight for market share against newcomers. This reduces the buying positions at these large consolidated organizations.

New Formats: The U.S. is currently the world's leading VR market, with a 250%+ increase year-over-year. 5G, AI, and the connected home will continue to drive innovation in content consumption.

OTT and Streaming: The prevalence of OTT and streaming has been driven by consumer preferences towards on-demand services and curated personalized content. Growth will be further supported as more devices become app compatible and consumers continue to cut the cord. This will accelerate as larger audiences can access high quality video.

Personalization: Consumers no longer want one-size-fits-all M&E experiences. Data analytics and technology that can support better decision-making with respect to content, distribution & user experience, privacy concerns not withstanding. This is both OTT, as well as OTA, as intelligent feedback and targeted analytics improve.

Cloud: Broadcasters are refocusing their technology spending, with plans to purchase cloud solutions, often building in-house solutions because of security concerns as well as customer data management, accelerating the change from CAPEX to OPEX and disrupting traditional tools.

Ad Market: The advertising market has undergone significant market shifts specifically towards a more data driven targeted approach. A traditional strong revenue generator for broadcasters, these fundamental shifts have led to a softening of the current market and competition intensification as tech giants play an increasingly important role.

Source: PWC, Deloitte, EY, NAB insight and analysis

... the current situation has accelerated these existing trends as well as introducing new ones

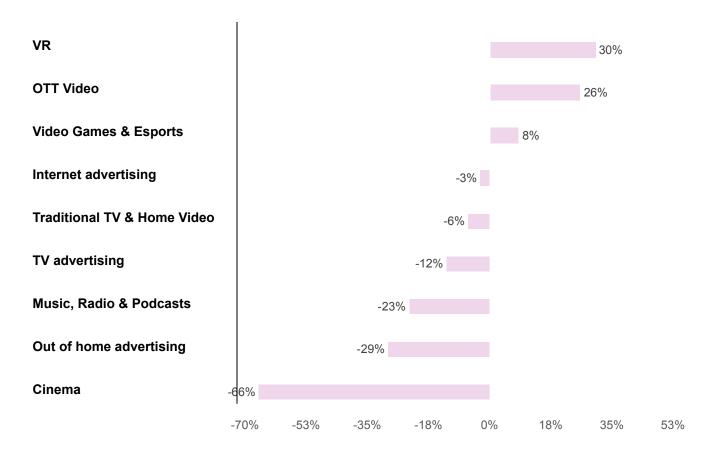
Trend	Impact	
Consolidation	 Overall, the volume of transactions in the space is expected to slow given the underlying macro-economic conditions, pockets of activity still exist in segments which have thrived such as gaming and streaming. 	\Rightarrow
New formats	 Before the pandemic, content creators continued to push the boundaries of content formats and how they could be consumed. The consumer demand for formats that allow consumers to engage with content from their own home has never been higher as a result of the pandemic. This coupled with the roll out of 5G means this area is growing and expected to continue disrupting traditional formats. 	
OTT and Streaming	 Continues to be a core growth segment in the market as consumers continue to demand content on-demand. The global market for OTT and streaming platforms is expected to grow from \$104bn to \$161bn, as the uptick in entertainment at home pays dividends with consumer subscriptions to OTT and streaming services. 	⇧
Personalization	• The pandemic has not halted consumer behavior towards curated content. Consumers—especially Gen X, Gen Z and millennials—continue to build their own media bundles and the cord cutting trend continues to be a prevalent one.	⇧
Cloud	 Tech spend was already being reprioritized in favor of digital and cloud solutions—the pandemic has accelerated this change considerably as crew size reductions have been required and more staff are having to work remotely in order to maintain safe production in line with social distancing. Cloud solutions are a key enabler to maintain a seamless production experience. 	
Ad Market	• The ad market continues to lean towards digital channels due to the ability to make targeted and data-based decisions. Naturally during a financial crisis ad spend has shrunk, however this spend is typically resilient and expected to drive much of the growth of the anticipated market recovery.	\Rightarrow
Creative Production	 Content production is undergoing unprecedented change as crew sizes are reduced and the demand for production has never been higher. Producers, creators, and editors are leaning more on technology in order to engage a new way of executing their workflows. 	\Rightarrow
Quality	 With the difficulties introduced by the pandemic, there is increasing concern around the quality of content being produced. Technology is being increasingly leveraged in order to assess and maintain quality standards. 	\Rightarrow
Business Model NAB insight and a	The pandemic has significantly shifted how consumers get their media. Live venues such as sport and music arenas have been closed as well as cinemas—this leaves a significant gap in existing business models which will have to be shifted to adapt to newer digital focused business models. Inalysis Output Description:	

Source: NAB insight and analysis

Market Segments and Growth Deep Dives

While the underlying market has struggled, the digital aspects of the market have experienced the strongest growth

Media and Entertainment Market sub-segment growth Percentage Change 2019-2020

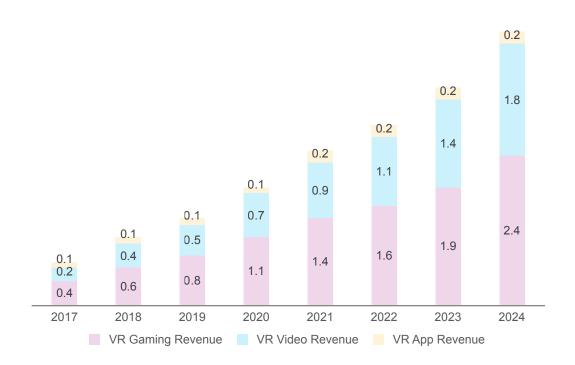


- As is the case in the broader market, the decline and poor performance that has been driven by the pandemic is not equally shared across all segments of the market.
- The pandemic has completely shut down certain aspects of the media and entertainment space such as live music venues and cinemas.
- While the pandemic has encouraged growth or stagnated decline in other areas, streaming and OTT services have seen increased demand.

Source: PWC Media and Entertainment 2020-2024 Outlook, NAB insight and analysis

VR will be one of the strongest performers in the sector driven by renewed investment and a refresh in content

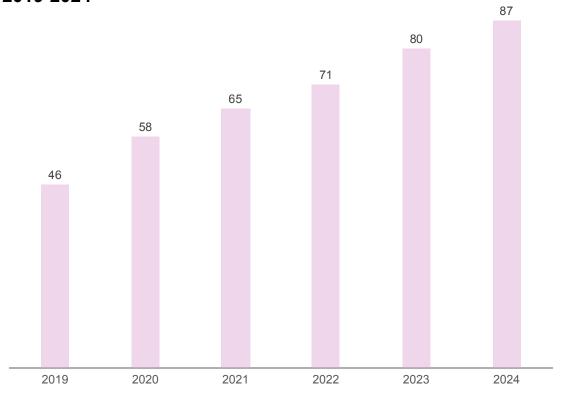
Global VR Market Size USD BN 2017-2024



- The industry is expected to see an influx of investment from the gaming sector as they look to develop applications and games that leverage VR tech. This is a significant shift from previous predictions which relied heavily on mobile device VR headset penetration.
- Video game content is expected to be the strongest contributor to growth accounting for over 50% of revenues.
- Interestingly, with the shift away from mobile and more towards gaming and in-home entertainment, the penetration of headsets is expected to decline.
- More content creators are exploring VR opportunities and the availability of more and higher quality content will drive the growth in the video segment of VR.

OTT sustains its steady growth supported by pandemic trends

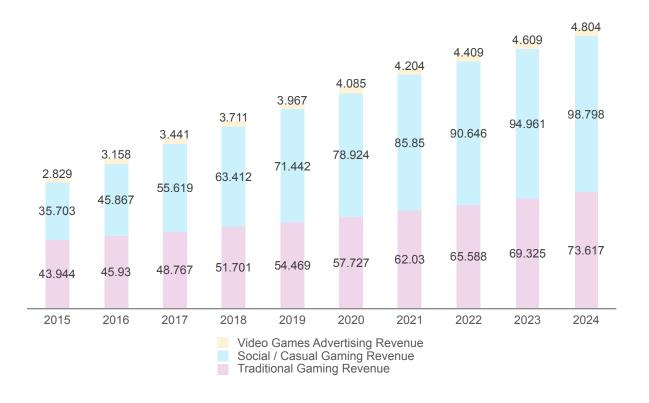
Global OTT Video Revenues USD BN 2019-2024



- The current market conditions support OTT and streaming services revenue growth.
- In mature markets such as the US, growth is expected to slow as new service providers continue to enter the market somewhat fragmenting the current landscape.
 Less mature markets are expected to see accelerated growth reducing mature markets share of the global revenue opportunity.
- Multi-platform viewing is expected to remain a predominant trend in the space, and will only become more predominant as 5G is rolled out.
- The market has hit somewhat of a milestone with VOD purchases set to overtake the physical home video market in 2022.
- Potential threats to the market include rising unemployment and a resulting decline in disposable income, differentiation to competitors, and content production pipelines.

Gaming and esports are continuing their forward trajectory with growth forecasted across all segments

Global Video Game Revenues USD BN 2019-2024



- Gaming companies will look to shift their business models towards subscriptions as a new source of revenue. Historically, there has been limited uptake here from consumers due to poor awareness and tech issues. The recent entries of Microsoft and Google will have a strong impact on adoption.
- Console makers have introduced new systems, however there is limited revenue upside here when compared to social/casual gaming with providers introducing chill game modes to take advantage.
- A further shift for game makers is the continuance of ingame purchases which will offer further revenue potential.
- Growth in emerging markets will almost exclusively be driven by mobile gaming supported by the strong and increasing penetration of smartphones.
- Esports continues to experience growth, passing the \$1BN revenue milestone in 2019. This will continue to be strongly driven by consumer demand.

Growth in action ...



- Facebook's second foray into the VR market has seen significant success and is a strong indicator of the potential in the VR market.
- Facebook addressed problems with its existing hardware which was heavy and limited gamer mobility to create a stand-alone wireless device.
- It sold over 700,000 headsets last year which resulted in over \$100mn in VR content for its Quest this year, equaling the total revenue it had made in the sector previously in a single year through PC tethered VR devices.
- The sales figures suggest that each buyer of the \$400-\$500 headset spent on average a further \$140 on VR content.
- Facebook also revealed that 20 Oculus titles generated at least \$1MN in revenue, demonstrating the demand from consumers for new content and formats.
- Oculus has driven growth in Facebook's 'other' product categories to 80% during Q2 of this financial year.



- Nintendo saw profits soar 209% between April and September of this year as the pandemic fueled gaming purchases and saw its product demand increase.
- Nintendo said sales of its Switch and Switch Lite consoles climbed almost 81% to 12.5 million units in the six-month period. That included nearly 6.9 million from July to September alone, up from 4.8 million in those same months a year ago.
- It has forced console rivals Sony and Microsoft to re-evaluate their product launches with Microsoft releasing a slimmed down version of the Xbox in order to compete.
- Nintendo has also seen growth in the software side of the business selling ~100mn between April and September—up 71% from the same period last year. The leading title was the massively popular "Animal Crossing: New Horizons," which moved more than 14 million units in those six months.



- At launch late last year, the streaming platform attracted ~29mn subscribers making it the third largest SVOD platform in the market over night.
- The pandemic only increased the growth rate with sign-ups allegedly tripling March 14-16 vs. the prior week.
- Disney+ appears to have found a niche in the market by appealing in large part to families with younger viewers — compared with Netflix, Disney+ users are significantly more likely to have children under 18 in their households.
- Library content has been the key driver of Disney+ adoption, with users gaining access to titles like "Star Wars" as well as Disney and Pixar films, TV shows, and shorts, some available in streaming form for the first time ever.
- Disney has fast tracked some of its content straight to the platform in response to the pandemic restriction (e.g. Mulan), however, with production significantly impacted ,production of fresh content could become challenging.

Source: NY Post, LEK, NAB insight and analysis