U.S. House of Representatives Energy and Commerce Committee, Subcommittee on Communications and Technology

“State of the Media Marketplace”

Testimony of

Ian Olgeirson

Research Director

S&P Global Market Intelligence

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Kagan, a media research group within S&P Global Market Intelligence, provides market commentary, industry benchmarks and analysis, with a particular focus on the changing media landscape. S&P Global Market Intelligence integrates financial and industry data, research, and news into tools that help track performance, generate alpha, identify investment ideas, understand competitive and industry dynamics, perform valuation, and assess risk.

I have been analyzing the U.S. multichannel market for nearly 20 years. In that period, I have watched as online distribution has fundamentally altered how consumers access content. Broadband connections and mobile data services have introduced new options, fueling changes in consumption habits and preferences. Alternatives to legacy distribution for video and audio have clearly altered business models as well, and the corporate landscape is shifting in the pursuit of increased scale.

A pair of recent events nicely illustrate the impact. Comcast's premium bid for Sky in the U.K. and Amazon's enhancement of its Fire TV Recast streaming media player, in different ways, offer insight into the direction of media.

Legacy providers are doubling down for increased scale on delivery and content while innovators are giving consumers greater access and control of programming outside of a traditional subscription offer.

While the majority of U.S. households still maintain a traditional multichannel subscription through a cable, telco or satellite service, online alternatives have eroded the value proposition of the classic big subscription package, driving subsequent declines in overall subscribers.

The big channel bundle and its dual subscription and advertising revenue streams is under significant pressure as consumers augment and even replace their services with lower-cost online options.

However, the industry has substantial fortifications, including notable scale, significant interdependencies with networks and content including ownership, and, in the case of wireline services, critical broadband infrastructure.

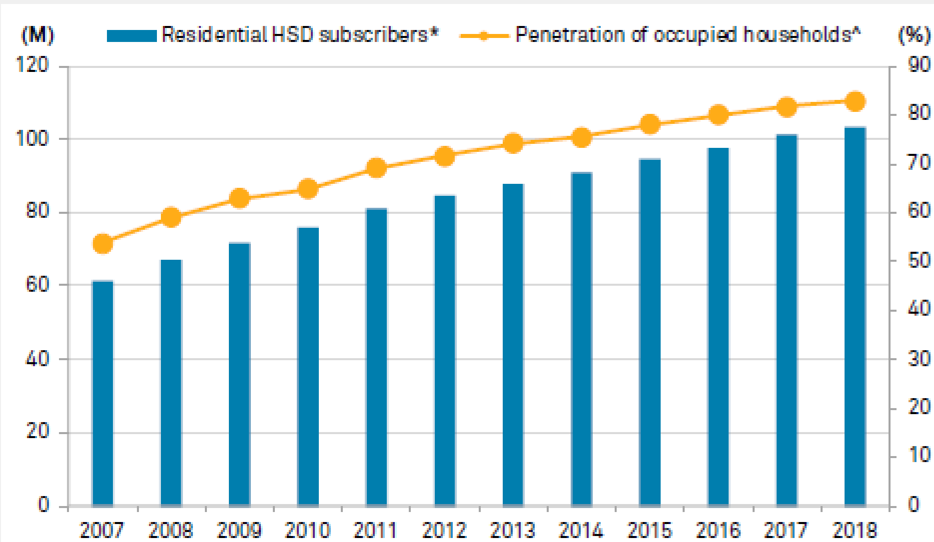
As a result, the video market is still in the early to mid-stages of a complex process that should not be over simplified with a rigid definition of cord cutting.

The audio market illustrates a much more advanced progression. The U.S. radio sector has been affected by secular trends in the advertising market, with competition from streaming audio players.

As more audio is being consumed on mobile devices and smart speakers, the majority of U.S. music industry revenue now derives from digital streaming and download services while radio station advertising revenue has been on the decline since its pre-2008 recession highs.

At the foundation of the disruption is broadband access. We estimate residential broadband subscriptions as a percentage of occupied households, or broadband penetration, will reach nearly 83% by the end of 2018. This is up from 59% 10 years ago and surpasses Kagan's 2018 forecast video penetrations of 69%.

Estimated and projected US residential HSD subscribers, 2007-2018



As of May 2018.
* Includes residential subscribers for cable, telco DSL and FTTH, wireless only and satellite service.
^ Occupied housing units derived from U.S. Census reports including occupied, temporarily occupied and occasional use housing units
Sources: Industry data; Kagan estimates
Kagan, a media research group within the TMT offering of S&P Global Market Intelligence.

Traditional multichannel video subscriptions

The fragmentation of U.S. video delivery is eroding the dominance of traditional multichannel services, sometimes labeled multichannel video programming distributors, or MVPDs.

Consumers are leaving what many traditionally think of as a "cable" subscription for online-only options, choosing to assemble a combination of subscription on-demand and free video sources for their entertainment.

However, the transition of subscribers is complicated by the emergence of virtual platforms, such as Sling TV or DIRECTV NOW, which offer similar but often so-called skinny bundles of live linear and on-demand content delivered over unmanaged broadband connections directly to consumer devices. They share several key components with their traditional predecessors.

Accordingly, the cord-cutting trend has not resulted in a simple mass exodus from subscription video models. Consumers are also moving to virtual platforms, a transition expected to keep the majority of U.S. households in packages of live linear and on-demand content for the foreseeable future, according to the latest outlook from Kagan research.

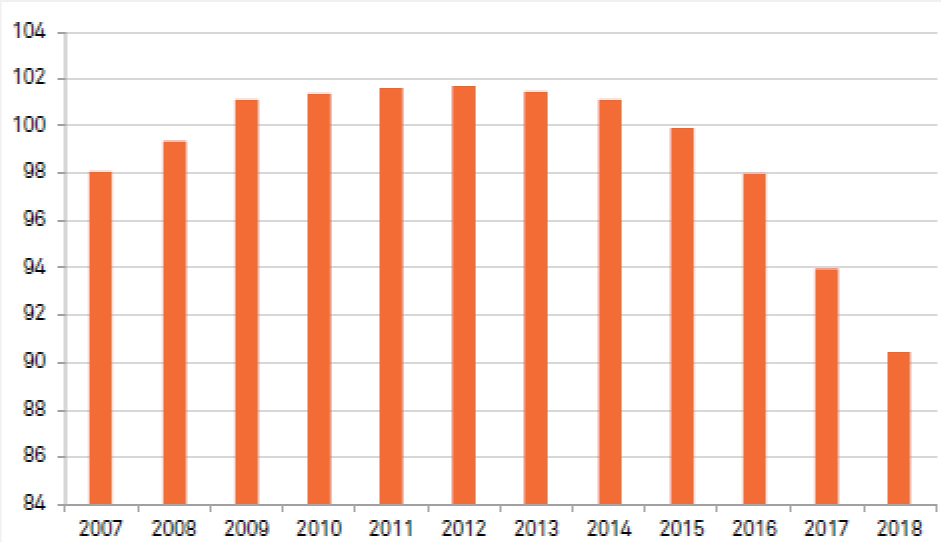
The overall appetite for multichannel product, nonetheless, is expected to contract even after the lift from virtual services. The reduction is the result of growth in online-only households as well as homes that rely on antennas for over-the-air (OTA) reception, neither of which is expected to subscribe to a bundle of live linear channels.

The competitive stresses on traditional multichannel services are increasingly evident. Traditional multichannel subscriptions have fallen from their peak levels of nearly 102 million in 2012 to fewer than 94 million at the end of 2017, according to Kagan estimates. The percentage of occupied households with a traditional subscription has declined to less than 72%, down from a high point of more than 85% recorded in 2009.

The cable, direct broadcast satellite and telco services shed total subscriptions at record levels in 2017. The number of traditional multichannel households, after removing duplicative overlap and commercial customers, dropped by nearly 3.4 million during the year. The decline continued in the first six months of 2018, with the cable, DBS and telco segments losing a combined 1.6 million residential customers, according to Kagan estimates.

The decline was tempered by increases to virtual platforms, but was still notable.

Historical US multichannel subscriptions*, 2007-2018 (M)



As of June 2018.
* Includes commercial and residential multichannel video subscriptions to cable, DBS, telco and other categories, not excluding overlap of households taking more than one subscription.
Sources: Industry data; Kagan estimates
Kagan, a media research group within the TMT offering of S&P Global Market Intelligence.

In 2018, we forecast that the traditional multichannel base will likely erode by 3.2 million households, moderating slightly from the record 2017 declines.

The five-year outlook features significant overall declines, but with annual losses curbed by anticipated strategic decisions from operators to better address consumers looking for skinny bundles as well as continuing to serve less price-sensitive customers seeking fewer restrictions on viewing.

While subscribers posted the first annual decline in 2013, estimated overall multichannel video subscription revenue did not register its first decline until 2016. The annual reductions have continued, and the video revenue from traditional cable, DBS and telco video services is expected to dip to an estimated $113.2 billion.

Video user definitions

As of July 2018.
Traditional and virtual multichannel households exclude overlap created by households taking multiple subscriptions.
Source: Industry data.
Kagan, a media research group within the TMT offering of S&P Global Market Intelligence.

Virtual multichannel

Virtual multichannel services, sometimes labeled vMVPDs, have risen considerably since 2015, both in terms of new products as well as the number of subscribers flocking to those services. The last significant wave of entrants came in 2017 and brought YouTube TV, Hulu with Live TV and Philo to the market.

Sling TV and DIRECTV NOW, as well as relative newcomers such Hulu with Live TV, have produced notable growth. Virtual pay TV services provide new options from more rigid traditional multichannel products, including new and differentiated channel lineups, pricing schemes and commitment-free subscriptions. Additionally, for services with parent companies that have existing user bases in other consumer products, we see a ripe opportunity to target those bases for new subscribers.

We estimate that virtual multichannel subs were just shy of 5 million at the end of 2017 and forecast that in aggregate they will surpass 10% of occupied households while rising to more than 15 million in 2022.

The skinny bundle approach of most virtual subscription services produces significantly lower average revenue per subscriber than the traditional multichannel package. According to Kagan estimates, the average for a virtual service is expected to just exceed $31 a month in 2018 vs. more than $100 a month for a traditional package. Total revenue for virtual services is expected to reach $2.8 billion in 2018, a fraction of the traditional total.

Online video

Consumers looking for alternatives to traditional subscription packages have never had more options. At the fore is the programming muscle of Netflix and Amazon Prime Video and the swelling investment in original and acquired content. Online video options are also experimenting further with live sports, including Amazon's deal for a package of Thursday night NFL games and Facebook's agreement to stream NBA games.

The long tail of niche content is being joined by mainstream direct-to-consumer offerings. Disney is anticipated to enter the space in 2019, contributing to a hybrid à la carte model that follows persistent consumer complaints of having to pay for content in their multichannel packages that they do not watch. The development of original programming combined with evolving content acquisition strategies paves the way for consumers to cut the cord with increasingly fewer sacrifices.

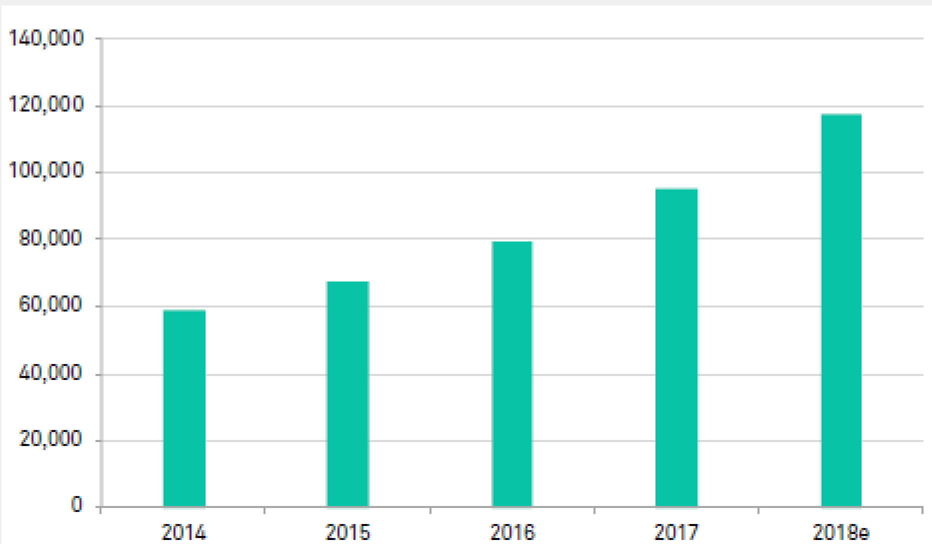
Worldwide spending on original and acquired content for Netflix is expected to swell to nearly $8 billion in 2018, followed by Amazon at more than $4 billion. Hulu is expected to spend $3 billion domestically on original and acquired content. Though the combined spending of the three online subscription services has nearly quadrupled since 2014, it remains a fraction of the more than $72 billion in estimated 2018 spending from broadcast, cable, premium and sports networks.

We anticipate that online-only households will grow moderately to more than 13 million and account for more than 10% of the occupied units in the U.S. by year-end 2018. Online video's growing stature shows no signs of abating, but the category of households that rely solely on online video is expected to be limited by the mounting number of options that fall into the other household segments. The five-year trajectory, tempered by consumer fragmentation, points to penetrations in the mid-teens and a segment total just above the 18 million mark.

While notable, the online-only category is not a complete reflection of the broader influence of the online video revolution. The aggregate subscriptions to services such as Netflix, Amazon Prime Video and Hulu reached nearly 145 million in 2017. The online subscription estimate is significantly larger than the multichannel base, but the aggregate revenue from the online services is relatively small. According to Kagan estimates, the total U.S. market for online video subscription services reached $13 billion in 2017 and is expected to grow to $15.8 billion in 2018.

In addition to subscription models, free, ad-support video has made huge inroads into viewing habits. YouTube has on its own created a seismic shift. YouTube has expanded from its modest 2005 launch to become the world's largest video platform, reaching more than 1.8 billion global viewers on a monthly basis including well over 200 million American viewers. YouTube's parent company, Alphabet, holds a similar hammerlock on the global digital ad market, with gross global ad revenue across Google, YouTube and its other digital properties likely to rise to just over $117 billion in 2018.

Estimated gross global ad revenue for Google, 2014-2018 ($M)



As of September 2018.
e = estimate
Gross global ad revenues are calculated from company filings and estimates and do not reflect payments that may be made to partners and content owners.
Sources: Industry data; Kagan estimates
Kagan, a media research group within the TMT offering of S&P Global Market Intelligence.

The installed base of connected devices is facilitating the swelling use. From purpose-built units like the popular streaming players from Roku, Apple TV and Amazon Fire, to multi-use devices such as tablets, PCs, smart TVs and smart phones, connected devices are multiplying. According to Kagan estimates, total connected devices in U.S. broadband homes topped 820 million in 2017 with an average of 8.5 devices per household. Amid the growth, manufacturers continue to make incremental adjustments, such as the Amazon Fire Recast's inclusion of a DVR to record over-the-air signals, increasing flexibility and enhancing the option for consumers outside of traditional multichannel subscriptions.

OTA

The segment of households that receive broadcast signals over-the-air has surged amid the hunt for multichannel alternatives. While the households that rely solely on an antenna for their entertainment are likely on the decline, OTA delivery to augment online video options is expected to propel the segment to 16.8 million households at the end 2018.

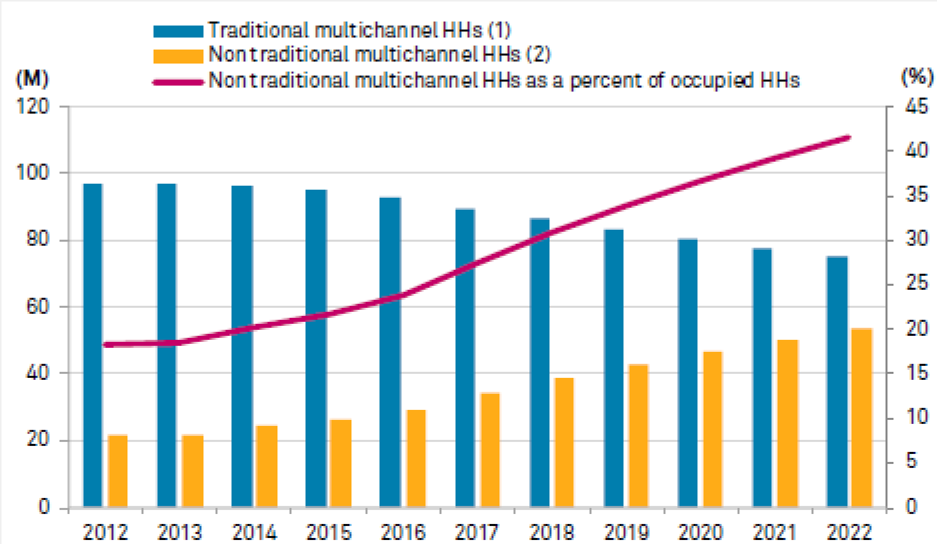
The total number of antennas installed in the U.S. surpasses our OTA household figures, because the figure does not include either virtual multichannel or traditional multichannel customers that may rely on an antenna for local broadcast signals to varying degrees. The count does include households that rely on over-the-air exclusively as well as households that blend broadcast signals with online video for entertainment.

The popularity of OTA is only expected to increase with the growing expense associated with retransmission fees and the expected improvements attached to ATSC 3.0. Even with the narrowed definition, the digital version of rabbit ears is expected to feed more than 19 million non-multichannel households by 2022, accounting for nearly 15% of occupied households.

Non-multichannel households

The result of the growing number of options is a long-term reduction in the absolute and relative number of U.S. households with a traditional multichannel package. When combined with the virtual multichannel and OTA categories, the subset of households beyond traditional cable, DBS and telco users establishes a more definitive path, accounting for nearly 42% of occupied units by 2022.

Estimated and projected US traditional multichannel vs. non traditional multichannel households



As of June 2018.
(1) Traditional multichannel household count excludes DBS overlap created by households taking multiple multichannel subscriptions. Includes cable, DBS, telco and other multichannel platforms. Excludes commercial subscribers and virtual multichannel subscribers. Includes households that also access online video (formerly OTT).
(2) Occupied HHs without a multichannel subscription. Historical figures revised.
Sources: Industry data; Kagan estimates
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Audio Overview

The U.S. radio station business has been impacted by losses of audience and ad share to streaming audio disruptors such as Apple Music, Amazon Music, Spotify, Pandora and others along with two of the top three radio owners, iHeartMedia and Cumulus Media, having to go through Chapter 11 bankruptcy reorganization.

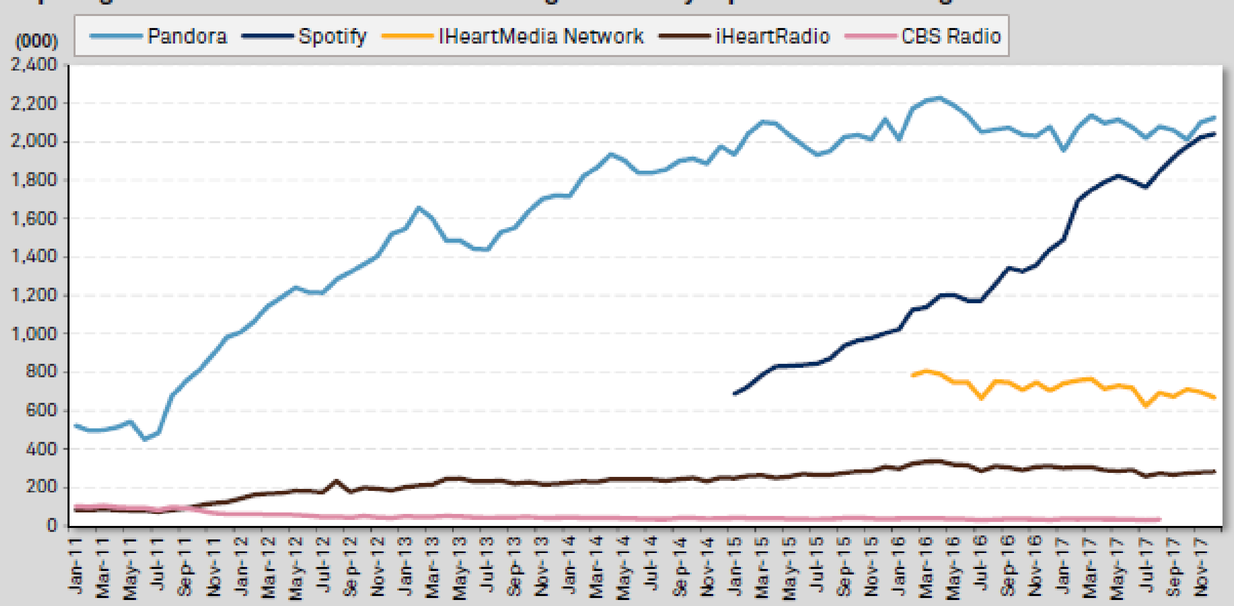
Including all sources, we estimate that U.S. radio station revenues ended 2017 down 0.4% as national and local ad spot revenue declined 3.0% and 2.5%, respectively. That was partially offset by a 0.5% rise in network revenue, 7.5% growth in digital and an 8.0% increase in off-air revenues, primarily from live events. U.S. radio station revenue of $17.6 billion in 2017 is down 19.7% from its high of $21.9 billion in 2006.

In 2017, streaming music contributed two-thirds of total U.S. music industry revenue. Paid subscriptions represented the biggest driver, growing 56.0% year over year from $2.24 billion to $3.50 billion. Total U.S. subscribers grew 55.5% from 22.7 million in 2016 to 35.3 million in 2017, according to the Recording Industry Association of America®. For the first time since 1999, U.S. music revenues grew materially for two years in a row, showing the importance of streaming to the industry.

The RIAA mid-year report released Sept. 21 revealed streaming accounts for a 75% share of the U.S. music industry. Streaming is driving overall success for the market, which reached revenues of $4.6 billion for the first half of 2018. That figure is up from $4.2 billion in the first half of 2017 and $3.5 billion in the first half of 2016. Streaming music revenue increased 28% to reach $3.4 billion for the period. Paid subscriptions generated the majority (75%) of that revenue total, increasing 33% to $2.5 billion. In 2012, streaming music accounted for just 15% of total U.S. music industry revenue.

A continued shift away from downloadable music to streaming services is in part due to growth in the use of mobile devices and advancements in wireless connectivity that allow for easy access to streaming services. Internet music and radio providers continue to build listenership as streaming services market and promote their platforms that include ad-supported and subscription options. According to Triton Digital's monthly Webcast Metrics Ranker, which measures domestic audience metrics for the top-performing digital audio stations, total average active sessions for the 20 services ranked grew 15.5% from 2017 to 2018, a key metric on the health of streaming music.

Top 5 digital music services based on Triton Digital monthly top 20 ranker: Average active sessions



Source: Triton Digital top 20 ranker, January 2011-December 2017. Spotify was added to the top 20 ranker in January 2015. iHeartMedia Network was added to the top 20 ranker in February 2016.
Domestic Average Active Sessions (AAS) for the Daypart 6:00am to 12:00am, Monday through Sunday.
Triton defines Active Session as: Number of sessions that were active, with a duration of at least one minute in total and any duration within the reported time period.
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Thank you for the opportunity to provide this statement at such an important time.