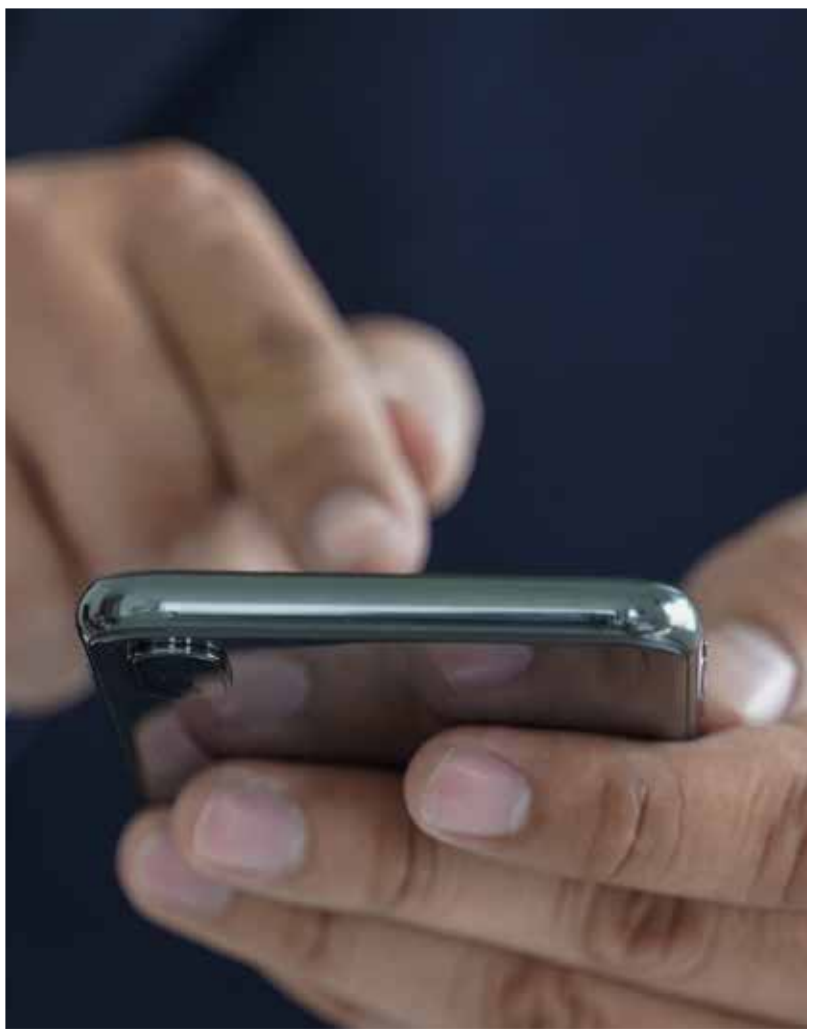


iab. internet advertising revenue report

2019 first six months results

October 2019

www.iab.com
www.pwc.com/e&m



Prepared by



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Background

About the IAB internet advertising revenue report

Commissioned by the IAB and conducted by PwC Advisory Services LLC (“PwC”) on an ongoing basis, with results released quarterly, the “IAB Internet Advertising Revenue Report” was initiated by the Interactive Advertising Bureau (IAB) in 1996. This report utilizes data and information reported directly to PwC from companies selling advertising on the internet as well as publicly available corporate data.

The results reported are considered to be a reasonable measurement of internet/online/mobile advertising revenues because much of the data is compiled directly from information supplied by companies selling advertising online. The report includes data reflecting desktop and mobile online advertising revenues from websites, commercial online services, ad networks and exchanges, mobile devices, and email providers, as well as other companies selling online advertising.

The report is conducted independently by PwC on behalf of the IAB. PwC does not audit the information and provides no opinion or other form of assurance with respect to the information. Only aggregate results are published and individual company information is held in strict confidence with PwC. Further details regarding scope and methodology are provided in the appendix of this report.

Summary

Summary

2019 half year highlights

Digital revenues increased 16.9% in HY 2019

Internet advertising revenues in the United States totaled \$57.9 billion for the half year (“HY”) of 2019, with Q2 2019 accounting for approximately \$29.9 billion and Q1 2019 accounting for approximately \$28.0 billion. Revenues for HY 2019 increased 16.9% over HY 2018 (HY 2018 revenues were reported at \$49.5 billion). This is slower than the 23.1% growth reported between HY 2017 and HY 2018.

Key trends underlying HY 2019 results

Quarter over quarter digital revenues increase 6.7% for Q2 2019

Internet advertising revenues in the United States totaled \$29.9 billion in the second quarter of 2019, an increase of 6.7% from the 2019 first quarter total of \$28.0 billion and an increase of 16.7% from the 2018 second quarter total of \$25.6 billion.

Advertising revenues delivered on mobile devices totaled \$39.9 billion in HY 2019, a 29.1% increase from the prior HY 2018 revenues of \$30.9 billion. Advertising delivered on a mobile device now makes up 69.0% of total internet advertising revenues.



The uptick in revenues continues to be significant. IAB has joined forces with Privacy for America to advocate for national laws that will make it easier to protect consumer privacy, while continuing to fuel the digital economy. Further, innovation will likely be stifled when companies are forced to redirect resources to comply with an unwieldy patchwork of state-by-state regulations.”

| Randall Rothenberg, President and CEO, IAB



Our latest report confirms that the digital advertising industry remains one of the strongest and most dynamic sectors of the U.S. economy. At nearly 17% growth from the prior half year the digital advertising industry is still far outpacing all other ad supported mediums, however the pace of growth is showing signs of slowing. As smartphone ownership nears saturation and social media matures, the industry is focused on new channels for growth such as connected TV, augmented reality and the vast potential of 5G.”

| David Silverman, Partner, PwC

Year-over-year revenues show decelerated growth

Digital revenues totaled \$57.9B in HY 2019

Revenues for HY 2019 totaled \$57.9 billion, \$8.4 billion (16.9%) higher than in HY 2018.

Although advertising revenues continue to grow year-over-year, overall growth is starting to decelerate from prior years. This is slower than the 23.1% growth reported between HY 2017 and HY 2018.

HY 2018 vs. HY 2019 internet advertising revenue (\$ billions)



Source: IAB/PwC Internet Ad Revenue Report, HY 2019



Spotlight

Spotlight

Primetime is personal

We are firmly in the third revolution of television content. From the launch of broadcast TV over 90 years ago to the growth of cable in the 1980's and satellite TV in the 1990's, to the migration from linear to internet-based digital video, the complexity of the video ecosystem continues to evolve with virtual MVPDs, streaming and social video platforms, and free and ad-supported streaming services.

The amalgamation of virtually unlimited content with shared or hand-held screens used within our increasingly wireless world has transitioned the meaning of “primetime” to personal. Distinctions between “traditional” TV and digital video fall away as terms like CTV* and OTT*, and “cord-cutters/nevers/stackers” become part of the vernacular.

While difficult to measure for myriad reasons, publishers have indicated they are increasingly leveraging OTT to go direct to consumer. Mass media conglomerates are purchasing and/or developing their own streaming services, which we

expect to continue through 2020; new streaming players are expected to enter the market; the rollout of 5G networks and 5G compatible smartphones will further increase mobile consumption and pave the way for content providers and advertisers to create better, faster and more innovative UX. As viewers shift their behavior towards CTV, advertisers are following. As the shift continues, we would expect to see a shifting of dollars.

Consumer usage and ad revenue growth continue despite the fragmentation of cross-channel measurement. With CCPA and other state regulations beginning to roll out in January 2020, the importance of obtaining 1st party data will become more critical to media outlets and ad targeting partners. The greater the number of states with independent privacy legislation, the greater the negative impact to smaller and mid-sized media.

*OTT (Over the Top) refers to video content delivery to a connected device, primarily a connected TV, over the Internet without the need for set top boxes or converters.

**CTV (Connected TV) refers to a television set that is connected to the Internet via OTT devices, players and gaming consoles or has built-in internet capabilities (i.e., a Smart Television).





Achieving Transparency

Brand safety. Fraud protection. Measurement of campaign performance by device, platform, content, context...

The years of frustration building within and across every faction of the digital advertising industry has reached critical mass. Today, we are experiencing a shift toward more meaningful supply chain transparency to support better decisions by buyers and sellers alike with the standards established through the OpenRTB Supply Chain Object.

More and more, we are seeing players in the industry open to adopting standards such as the SupplyChain object, which includes ads.txt and sellers.json.

Adoption of this standard that promotes and advances transparency is on the rise. While they require the sharing of metadata, the marketers that commit to their implementation reap the rewards. Components of the OpenRTB Supply Chain Object include:

- ads.txt increases transparency in programmatic advertising. An acronym for Authorized Digital Sellers ads.txt is a simple, flexible and secure method that publishers and distributors can use to publicly declare the companies they authorize to sell their digital inventory.
- Sellers.json provides a mechanism to enable buyers to identify both direct sellers and intermediaries in selling digital advertising.



Consumer Data: Regulated

The EU took the first step toward consumer data privacy and protection when it enacted GDPR (General Data Protection Regulation) in May 2018. In January 2020, California will enact what could be the first of US state legislation. The need for consumer data protection is great. The costs associated with a potential patchwork of state by state policies could be crippling to the digital economy.

In January 2020, the California Consumer Privacy Act (CCPA) will be the first US state legislation of its kind to take effect, and will continue to bring sweeping changes in the name of data protection. The Full Year 2018 Internet Advertising Revenue Report cited the European Union's GDPR and the impact data protection is having--and is expected to have--on the digital advertising ecosystem. Both are meant to place control and decisioning of personally identifiable information data (PII) in the hands of the individual consumer.

Just as CCPA and GDPR differ, so too would a patchwork of state by state legislation. Companies will find it difficult to comply with multiple policies.

Resources currently supporting content creation and delivery could be negatively impacted—as resources are redirected toward compliance. A proliferation of value exchange programs (i.e., selling one's personal data in return for goods/services) could develop.

Advertising based models and advanced targeting could be impacted, resulting in content publishers switching to subscription or hybrid subscription/ advertising models. Subscription and hybrid models may find fewer audience numbers leading to higher CPMs and, ultimately, higher cost per acquisition (CAC). A lack of appetite for higher CPMs could lead to lower quality and fewer content options. The consumer could find themselves in a state of fatigue from opting in/out. And with operating systems and engines beginning to err on the side of privacy, the consumer is likely to find him/herself with fewer choices.

The solution requires careful analysis and consideration on a national level for the creation of a uniform set of data protection laws.



Emerging Technologies

As technologies advance, the manner by which advertisers reach their consumers is evolving at lightning speed and consumers are drifting away from traditional media platforms. For an industry that requires the rapt attention and interaction of consumers, a potential solution lies in the form of Immersive Media.

Interactive ads are expected to proliferate with 5G technology in the early stages of rolling out. In addition, more powerful cloud computing means that augmented reality (AR) and virtual reality (VR) capabilities might finally be realized. What separates AR advertising from other mediums is that it meets the consumer where they interact every day: the smartphone camera. Marketers report that AR ads fosters an emotional connection with the consumer which is leading to increased brand recall, positive brand associations, and in some cases increased brand awareness.

Connected device usage is on the rise, precipitating the adoption of voice technologies. Voice technologies serve as a nexus between the physical and digital world which enables an opportunity for contextual targeting. Voice is being touted as a potential solution given that more and more marketers are shifting to a strategy of intention marketing. The potential for voice technologies is so great that it is predicted to be the next wave of SEO.

With advancements in marketing technology, many marketers are moving from channel-focused solutions to dynamic, multi-layered user-centric solutions. With this move comes the ability for marketers to personalize the ad experience and foster direct one-to-one marketing. With the advent of GDPR and CCPA, and the general shift towards protecting the privacy of the consumer, personalized ads are coming under heavy scrutiny. In order to fully maximize this new capability marketers will have to continue to promote transparency and communicate the data value exchange to consumers.



Internet of Things

Unprecedented amounts of connectivity fueled by the evolution of the Internet of Things (IoT), as well as by internet connected devices—from wearables to smart home devices—is elevating and driving the digital advertising industry. Marketers now have immediate access to actionable data, e.g., how, when, where and why products are being purchased and used. IoT provides marketers with data specific to each unique user, fostering the personalization of ads and enabling direct one-to-one marketing.

Further, with this new abundance of rich data, marketers are able to follow the conversion path with unparalleled specificity. This is leading to enhanced

attribution data and an understanding of what ads work best and in what context and mindset. That the proliferation of IoT is happening contemporaneously with the shift toward greater consumer privacy protection should not be understated. Should a patchwork of state-by-state regulations create roadblocks in the way marketers leverage this data, their ability to deliver unique, targeted advertising could be thwarted, and impact overall user experiences.

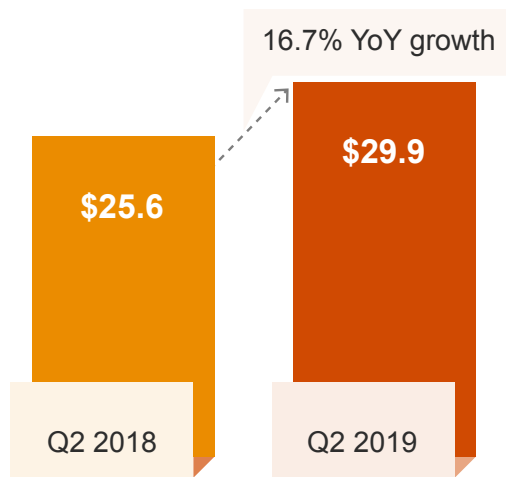
Half Year Trends

Quarterly growth

Revenues totaled \$29.9 billion in Q2 2019

Total revenues in the second quarter of 2019 totaled \$29.9 billion which represented a 16.7% increase over total revenues in the second quarter of 2018 and a \$1.9 billion or 6.7% increase over total revenues in the first quarter of 2019.

Q2 2018 vs. Q2 2019 internet advertising revenue (\$ billions)



Q1 2018 vs. Q1 2019 internet advertising revenue (\$ billions)



Source: IAB/PwC Internet Ad Revenue Report, HY 2019

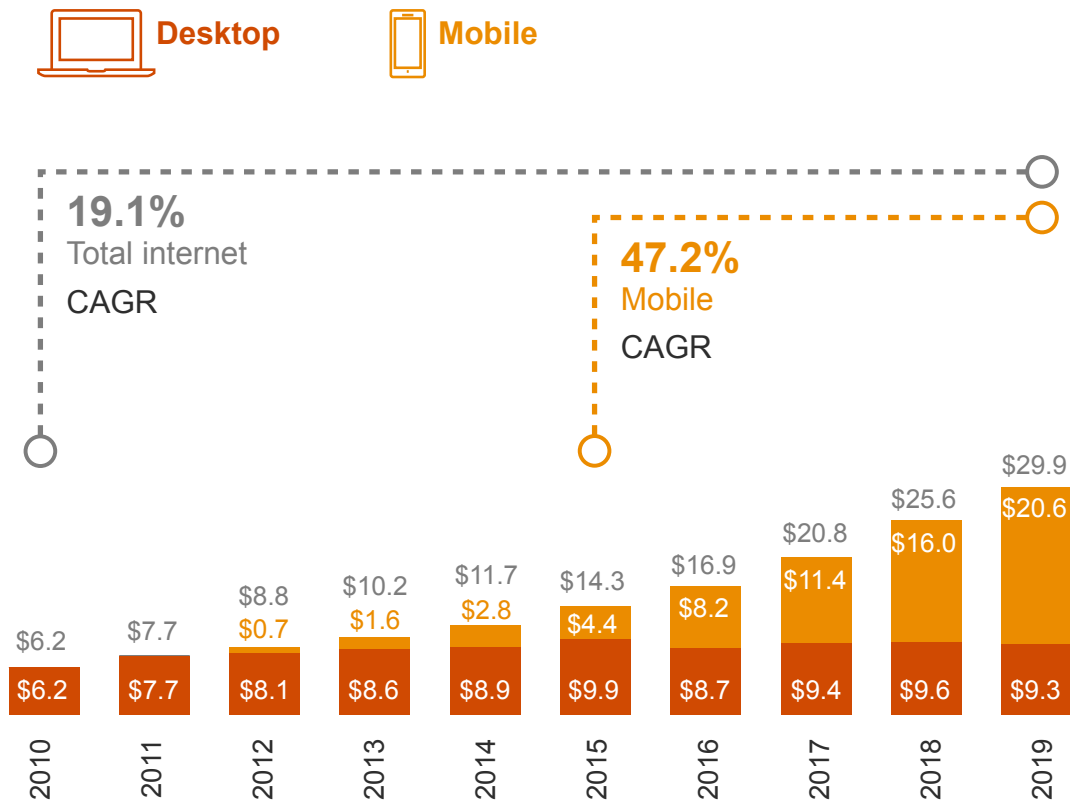


Desktop vs. mobile devices

Advertising revenues continue mobile migration; mobile increases its revenue share to 69.0% in half year 2019

On a year-over-year basis, mobile internet advertising revenues increased 29.1%, growing its share of total revenues from 62.5% in HY 2018 to 69.0% in HY 2019. Reflecting the industry's overall growth is a compounded annual growth rate (CAGR) since 2010 of 19.1% which has been largely driven by the sustaining growth of mobile. The rapid growth of the mobile advertising platform has resulted in mobile specific CAGR of 47.2% since 2015. The saturation of mobile smartphone devices was a major factor in this historical growth. Continuing to fuel future mobile growth will be the rollout of 5G and the increased speed at which consumers can watch video on their personal devices.

Desktop vs. mobile internet advertising revenue (Second quarter results, \$ billions)



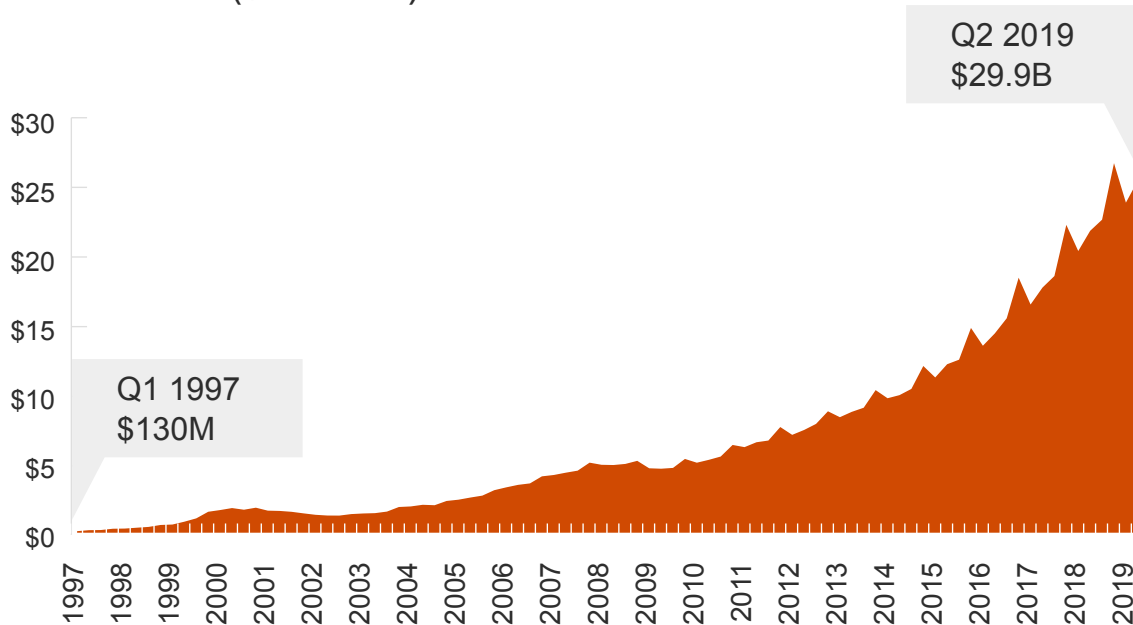
Source: IAB/PwC Internet Ad Revenue Report, HY 2018

Historical quarterly trends

Q2 2019 reaches \$29.9 billion although at a decelerated rate

The digital advertising industry continues its trend of quarter-over-quarter growth in Q2 following the consistent dip in Q1. However, Q2 revenue percentage growth YoY (16.7%) has slowed down from its growth in recent years to a level not seen since Q1 2015.

Quarterly internet advertising revenue growth trends 1997-2019 (\$ billions)



Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Historical revenue mix

For the first time, first half revenues were less than previous second half revenues

First half revenues totaled \$57.9 billion in 2019 representing an increase of \$8.4 billion from first half revenues in 2018. Another milestone has been met in the industry with first half revenues exceeding the \$50 billion mark. This strong first half puts the industry in position to surpass the \$107.5 billion total seen in 2018. At \$57.9 billion the first 6 months of 2019 was just \$30 million short of the 6 month mark set in the second half of 2018.

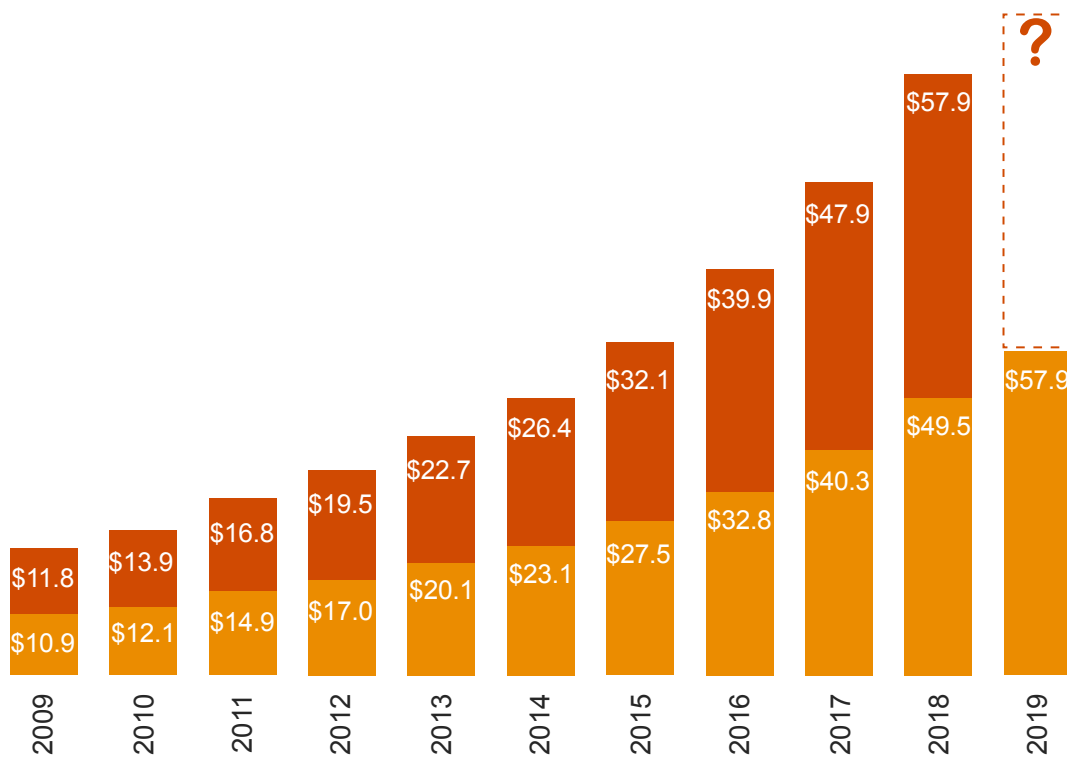
Historical revenue mix, first half vs. second half (\$ billions)



First 6 months



Last 6 months



Source: IAB/PwC Internet Ad Revenue Report, HY 2019

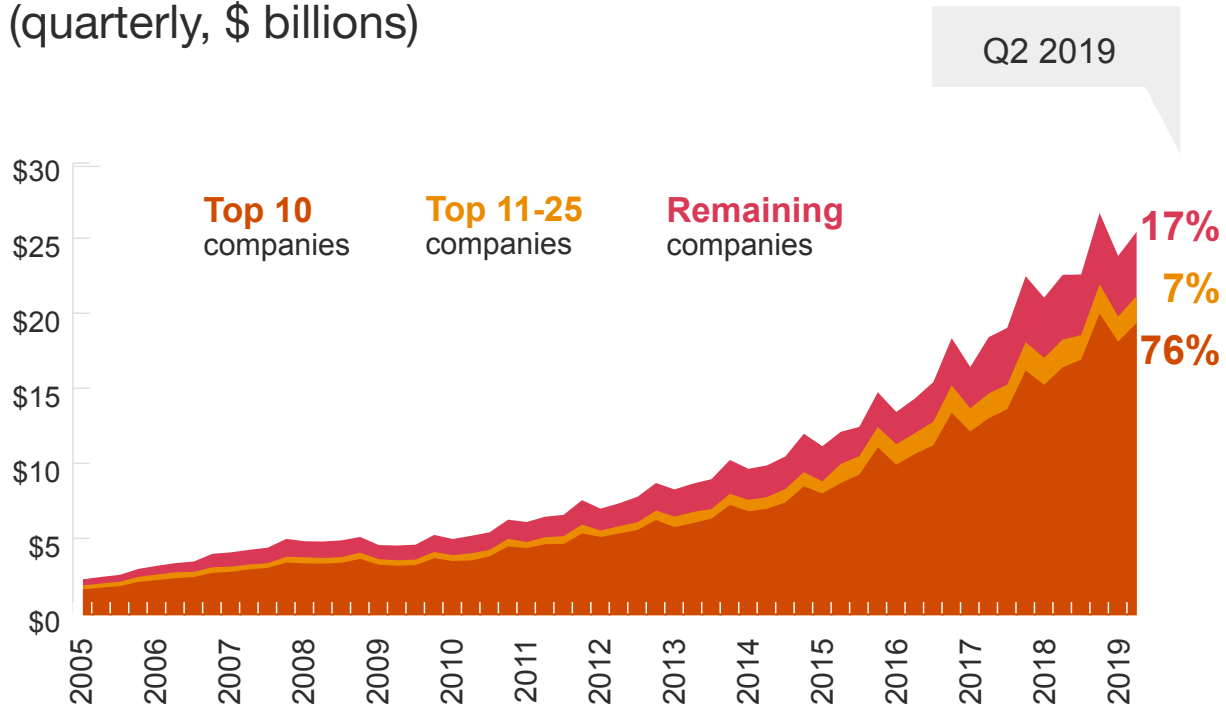
Revenue concentration

Top 10 advertising companies continue to account for the majority of total advertising revenues

76% of internet advertising revenues in Q2 2019 continue to remain concentrated with the top 10 leading ad-selling companies. This is the same percentage reported in Q2 2018. Companies ranked 11th to 25th accounted for 7% of revenues in Q2 2019, which is also the same percentage reported in Q2 2018. While the industry revenues remain concentrated with a handful of companies, the companies that make up that concentration continue to evolve. Furthermore, the industry has a very long tail made up of hundreds of companies that share the remaining revenues.

The concentration of top 10 revenues has fluctuated between 69% and 77% over the past ten years.

% share of total revenues (quarterly, \$ billions)

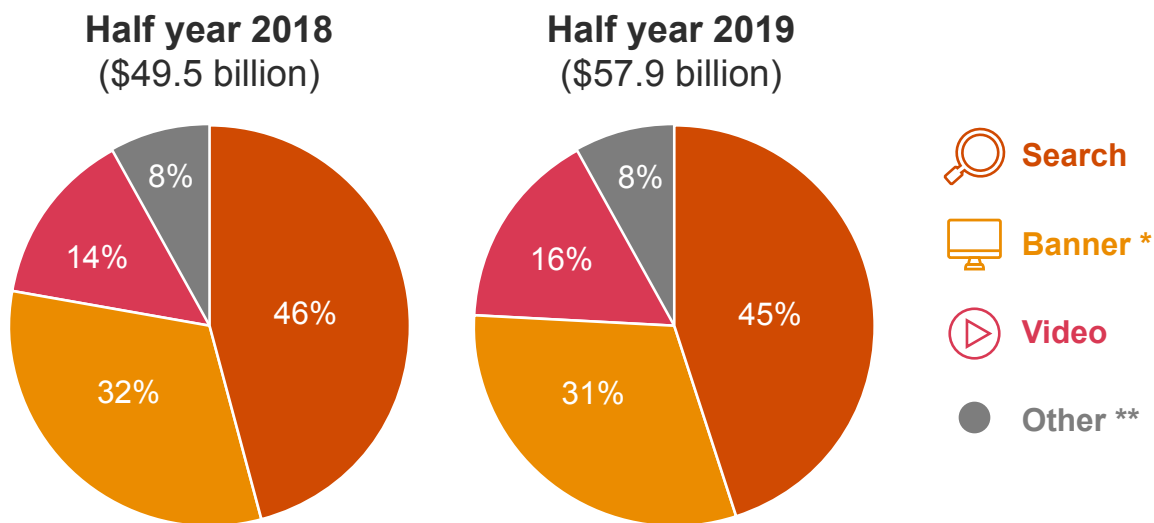


Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Internet digital video shows growth among formats in half year 2019 stealing a percentage of share from search and display

- Search totaled revenues of \$26.0 billion in HY 2019, up 13.7% from HY 2018 (\$22.8 billion).
- Search's representation of 44.8% of total internet advertising revenue for HY 2019 is down from HY 2018's 46.1%.
- Digital video totaled \$9.5 billion for HY 2019, up \$2.5 billion or 35.7% from HY 2018.
- Digital video now makes up 16.4% of total internet advertising revenue, up from 14.2% in HY 2018.
- Banner* revenues totaled \$17.8 billion in HY 2019, representing a 13.3% increase from HY 2018 (\$15.7 billion).
- The Other** category, which accounted for 8.0% of total HY 2019 revenues was primarily composed of classifieds (\$1.9 billion), lead generation (\$1.5 billion), and audio (\$1.2 billion).

Internet advertising format revenue, half year results



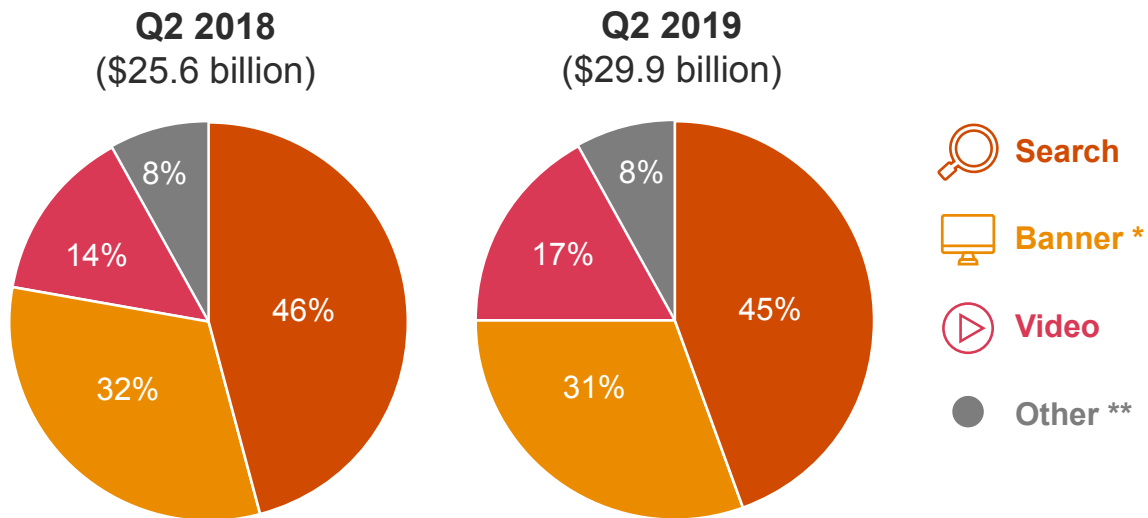
* Banner includes: Ad Banners/Display, Rich Media, and Sponsorship.
 ** Other includes: Classifieds, Lead Generation, Audio, and Unspecified.
 Note: Totals may not equal 100% due to rounding.

Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Internet digital video expands across desktop and mobile devices

- The Search format totaled revenues of \$13.4 billion in Q2 2019, up 13.4% from Q2 2018 (\$11.8 billion).
- The Search format’s representation of 44.7% of total internet advertising revenue for Q2 2019 is a year- over-year decrease from Q2 2018’s 46.1%.
- Digital video totaled \$5.0 billion for Q2 2019, up \$1.3 billion or 35.5%, from Q2 2018’s \$3.7 billion.
- Banner* revenues totaled \$9.1 billion in Q2 2019, representing a 12.6% increase from Q2 2018 (\$8.1 billion).
- The Other** category, which accounted for 8.1% of Q2 2019 revenues is primarily comprised of classifieds (\$950 million), lead generation (\$774 million), and audio (\$688 million).

Internet advertising format revenue, second quarter results



* Banner includes: Ad Banners/Display, Rich Media, and Sponsorship.
 ** Other includes: Classifieds, Lead Generation, Audio, and Unspecified.
 Note: Totals may not equal 100% due to rounding.

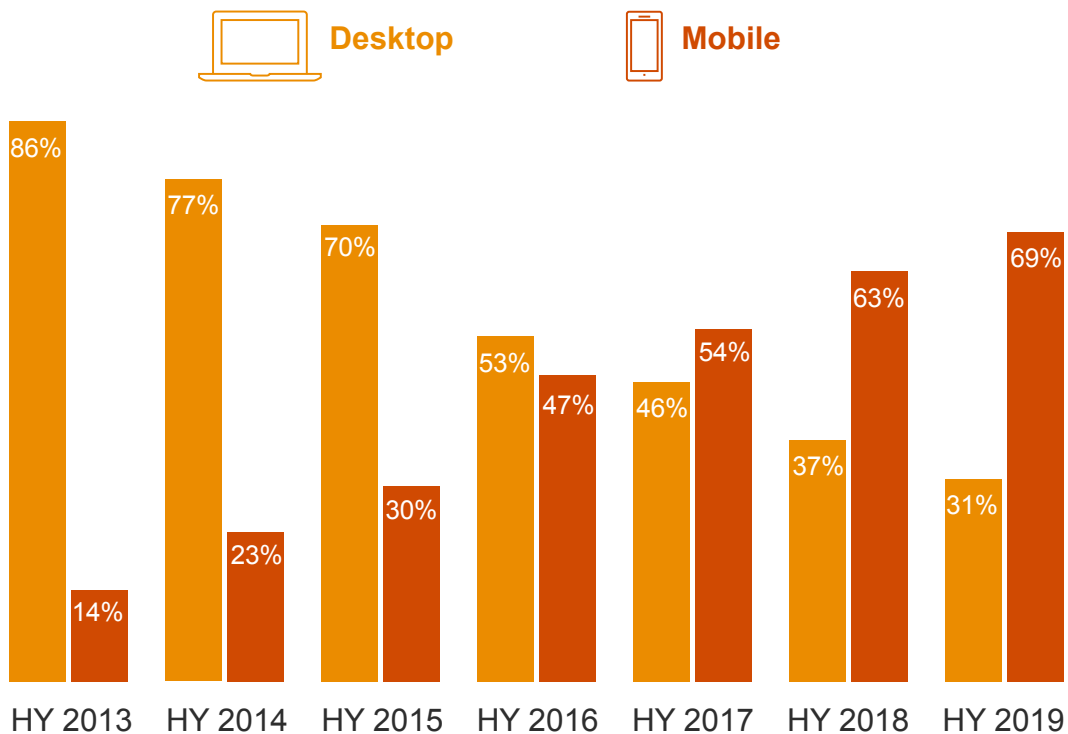
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Historical trends (desktop vs. mobile)

In four short years, mobile and desktop swap revenue share

- Mobile ad revenues represent 69.0% of total HY 2019 revenues as compared to 62.5% of total revenues reported in HY 2018 and 54.1% in HY 2017.
- Mobile ad revenues are those revenues generated on devices such as smartphones and tablets.

Historical desktop vs. mobile trends, HY results (\$ billions)



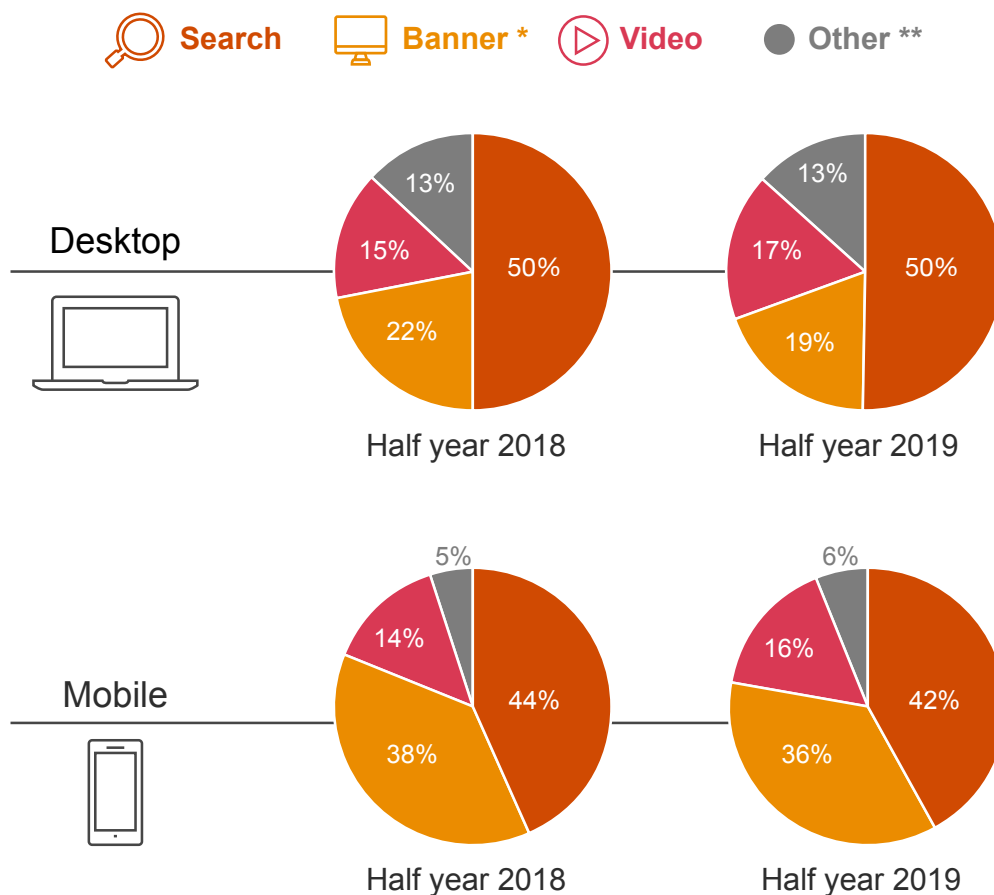
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Formats (desktop and mobile)

Video gains share on both desktop and mobile in the first half of 2019

- Search revenue decreased slightly on desktop, but overall share of desktop increased from 49.9% in HY 2018 to 50.1% in HY 2019.
- On desktop, video showed a large share gain (from 15.2% in HY 2018 to 17.5% in HY 2019) while Banner showed the largest decrease from 22.0% to 19.2% YoY.
- The only formats on mobile to gain in overall share from prior year are video and other. Video went from 13.5% in format share in HY 2018 to 15.9% in share in HY 2019, while Other grew half a basis point from 5.1% in HY 2018 to 5.6% in share in HY 2019.

Internet advertising format revenue, desktop vs. mobile



* Banner includes: Ad Banners/Display, Rich Media, and Sponsorship.

** Other includes: Classifieds, Lead Generation, Audio, and Unspecified.
Total may not equal 100% due to rounding.

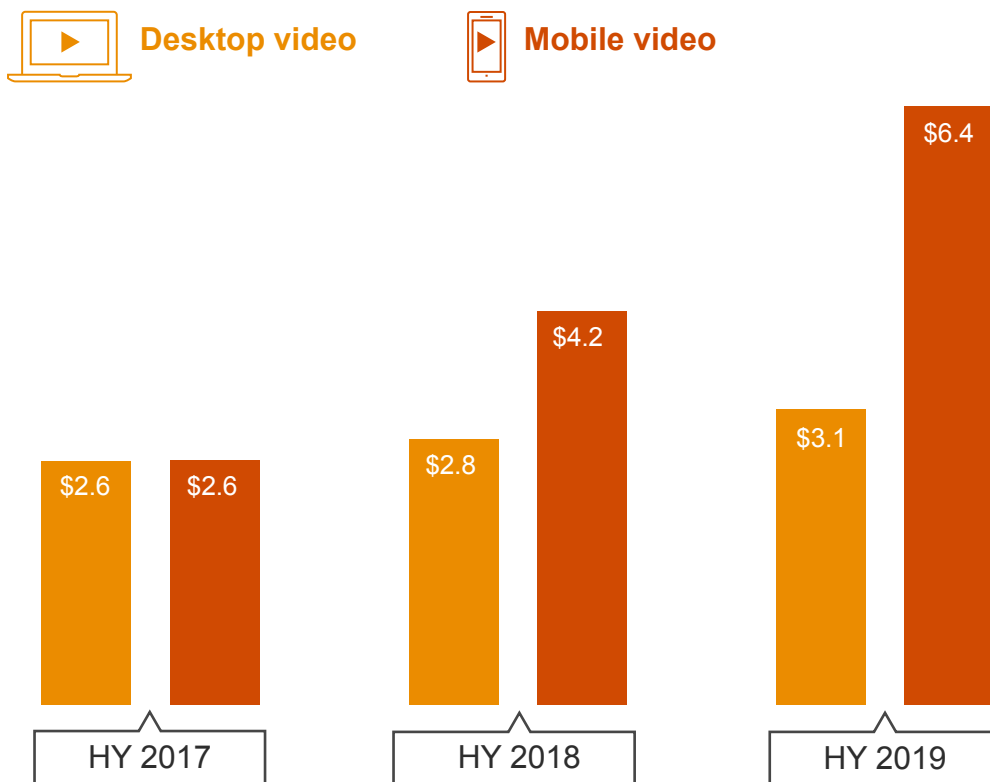
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Digital video (desktop vs. mobile)

Digital video continues to grow its share of mobile and desktop growth in HY 2019

- Total digital video, including mobile and desktop, rose to \$9.5 billion in HY 2019, up 35.7% from \$7.0 billion in HY 2018.
- Video ad revenues on mobile devices now comprise 67.0% of all digital video ad revenues, up from 59.7% in the prior year.
- Growth of digital video on smartphones and tablets continued, reaching \$6.4 billion in HY 2019, a 52.1% rise from HY 2018.

Historical digital video revenues, half year results (\$ billions)



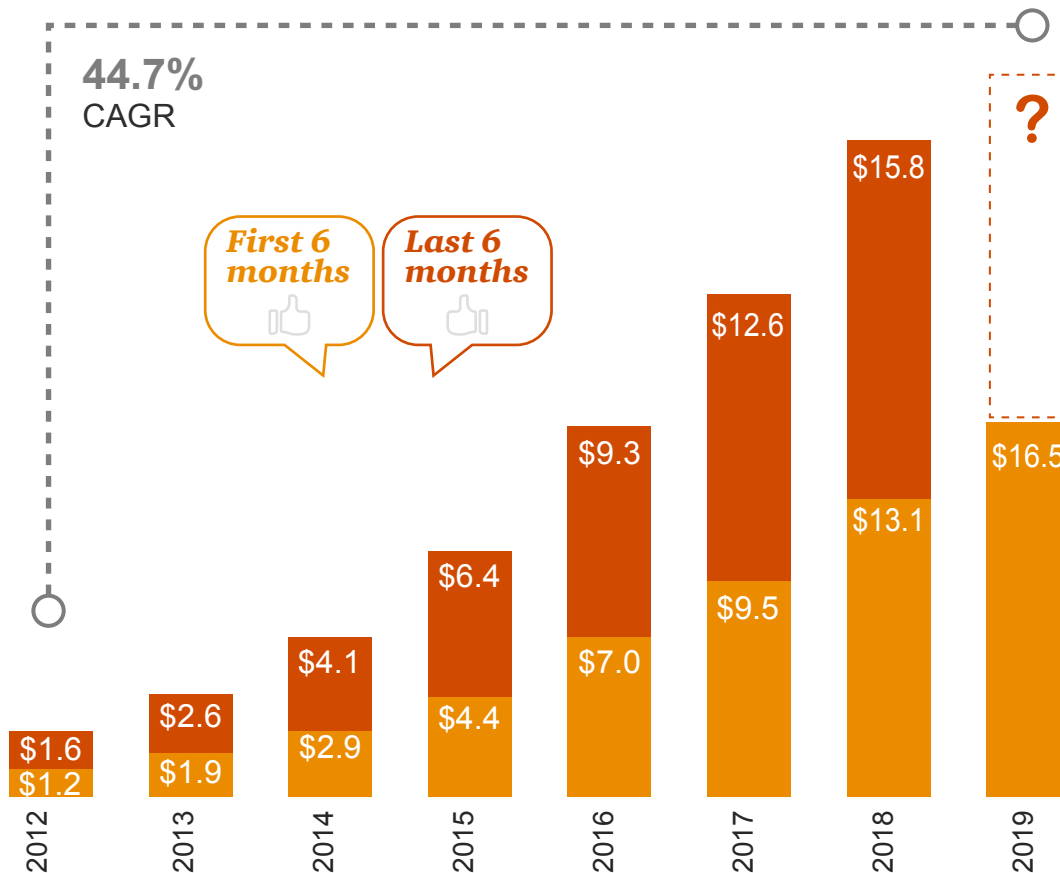
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Social media advertising continues its ascent with revenues growing 25.7% in HY 2019 compared to HY 2018

For the first half of 2019, social media revenue was \$16.5 billion. Year-over-year, social media revenue was up 25.7% from HY 2018. Social continues its first-half growth trends with increases reflected in the 44.7% compound annual growth rate of social from 2012 to 2019.

Note: We define social media as advertising delivered on social platforms, including social networking and social gaming websites and apps, across all device types, including desktop, laptop, smartphone and tablet.

Social media advertising revenue, half year results
(\$ billions)



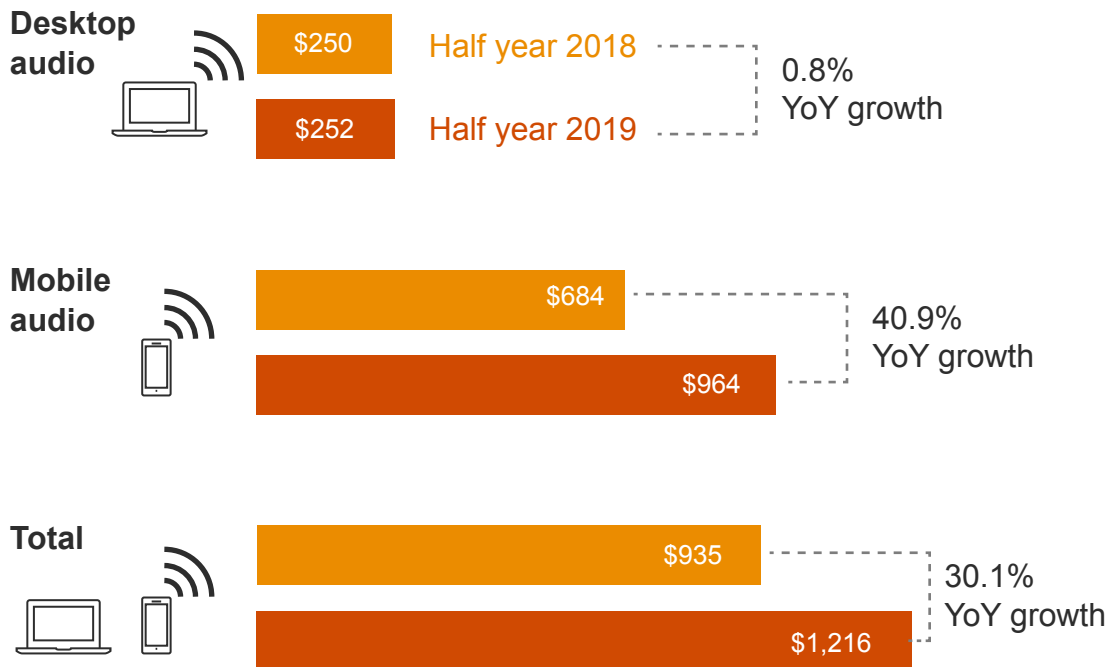
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

In the first half of 2019, digital audio advertising revenue reached \$1.2 billion

This represents a 30.1% increase over HY 2018 revenue of \$935 million.

Though digital audio advertising revenues continue to grow year-over-year, its share of the total internet advertising revenue pie remains insignificant at 2.1% in HY 2019.

Digital audio advertising revenue, half year results (\$ millions)



Note: Totals may not equal 100% due to rounding.

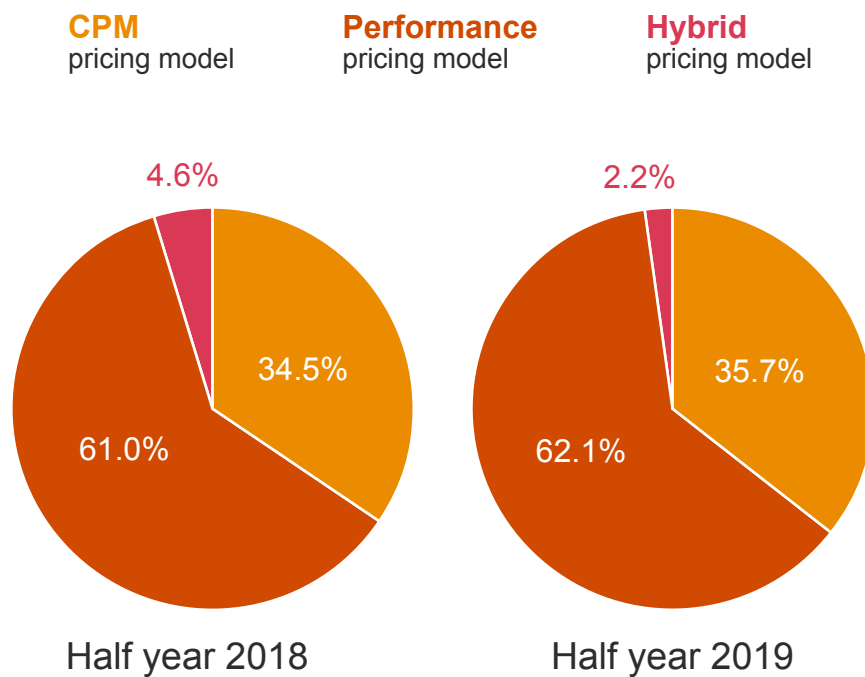
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Revenues by pricing model

Advertising revenues continue to be attributable to performance pricing model

- 62.1% of HY 2019 internet advertising revenues were priced on a performance basis, up a few points from the 61.0% reported in HY 2018.
- 35.7% of HY 2019 internet advertising revenues were priced on a CPM basis, up from the 34.5% reported in HY 2018.
- 2.2% of HY 2019 internet advertising revenues were priced on a hybrid basis, a significant decrease from the 4.6% reported in HY 2018.

Revenue by pricing model, half year basis (\$ billions)



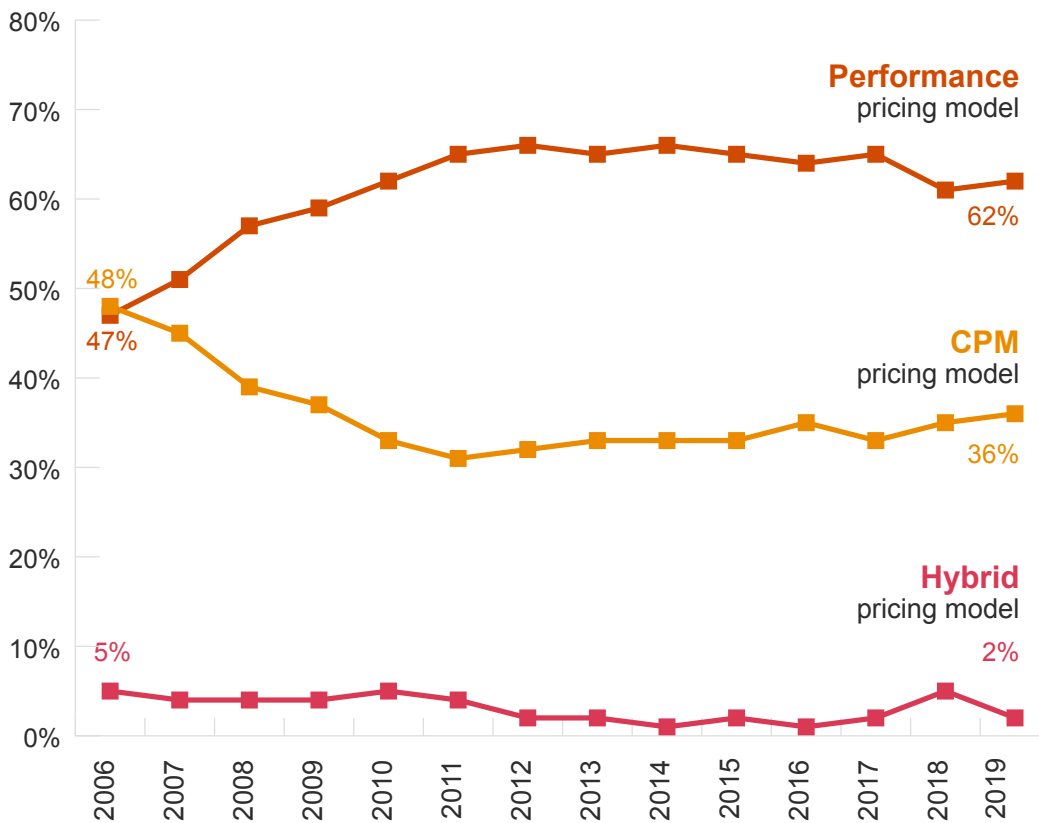
Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Historical pricing model trends

Performance-based pricing is still leading the pack of pricing models

- Performance-based pricing, the leading pricing model since 2006, increased slightly to 62.1% of total revenue in HY 2019.
- CPM/impression-based pricing ticked up in HY 2019, up to 35.7% of revenue from 34.5% in HY 2018.
- Hybrid pricing decreased to 2.2% of total revenues in HY 2019, down two points from the 4.6% reported in HY 2018.

**Internet advertising revenue by pricing model,*
2006-2019 (% of total revenue)**



* Pricing model definitions may have changed over the time period depicted both within the survey process and as interpreted by survey respondents.

Note: Totals may not equal 100% due to rounding.

Source: IAB/PwC Internet Ad Revenue Report, HY 2019

Appendix

Definitions of advertising formats and pricing models

Banner advertising	<p>Ad banners (also known as banner ads) are one of the most dominant forms of advertising on the internet. Banner ads are a form of display advertising that can range from a static graphic to full motion video.</p> <p>The IAB New Standard Ad Unit Portfolio: Lightweight, Cross-Screen, and Flexible size ads that implement LEAN principles. Ad Types included Horizontal, Vertical, Tiles, Full Page Portrait, Full Page Landscape and Feature Phone Sizes.</p>
Sponsorship	<p>Advertiser pays for custom content and/or experiences, which may or may not include ad elements such as display advertising, brand logos, advertorial, or pre-roll video. Sponsorships fall into several categories:</p> <ul style="list-style-type: none">• Spotlights are custom-built pages incorporating an advertiser's brand and housing a collection of content usually around a theme• Advergaming can range from an advertiser buying all the ad units around a game or a "sponsored by" link to creating a custom branded game experience• Content & Section Sponsorship is when an advertiser exclusively sponsors a particular section of the site or email (usually existing content) re-skinned with the advertiser's branding• Sweepstakes & Contests can range from branded sweepstakes on the site to a full- fledged branded contest with submissions and judging
Search	<p>Fees advertisers pay online companies to list and/or link their company site domain name to a specific search word or phrase (includes paid search revenues).</p> <ul style="list-style-type: none">• Paid listings – payments made for clicks on text links that appear at the top or side of search results for specific keywords. The more a marketer pays, the higher the position it gets. Marketers only pay when a user clicks on the text link.• Contextual search – payments made for clicks on text links that appear in an article based on the context of the content, instead of a user-submitted keyword. Payment only occurs when the link is clicked.• Paid inclusion – payments made to guarantee that a marketer's URL is indexed by a search engine (i.e. advertiser isn't paid only for clicks, as in paid listings).• Site optimization – payments made to optimize a site in order to improve the site's ranking in search engine results pages (SERPs). (For example, site owner pays a company to tweak the site architecture and code, so that search engine algorithms will better index each page of the site).
Lead generation	<p>Fees paid by advertisers to online companies that refer qualified potential customers (e.g., auto dealers which pay a fee in exchange for receiving a qualified purchase inquiry online) or provide consumer information (demographic, contact, behavioral) where the consumer opts in to being contacted by a marketer (email, postal, telephone, fax). These processes are priced on a performance basis (e.g., cost-per-action, -lead or -inquiry), and can include user applications (e.g., for a credit card), surveys, contests (e.g., sweepstakes) or registrations.</p>
Classifieds and auctions	<p>Fees paid to advertisers by online companies to list specific products or services (e.g., online job boards and employment listings, real estate listings, automotive listings, auction-based listings, yellow pages).</p>
Rich media	<p>Interactive features that engage the user and initiate new content experiences. Interactive features could be animation or elements that trigger ad expansion or video play or other interactive experiences. Rich media experiences that require files or creative assets in addition to initial load and subload limits should be user initiated. This definition also includes any advertising experience where visiting a website in an initial browser window initiates a secondary browser window to deliver an ad impression directly above the initial browser window.</p> <p>The IAB New Standard Ad Unit Portfolio: Lightweight, Cross-Screen, and Flexible size ads that implement LEAN principles. Ad Types included Horizontal, Vertical, Tiles, Full Page Portrait, Full Page Landscape and Feature Phone Sizes.</p> <p>Video commercials that appear in video players are considered Digital Video Ads, not Rich Media.</p>

Definitions of advertising formats and pricing models

Rich media (continued)	<p>“Interstitials” are defined as between-the-page ad units, also known as “interstitial” ads, between-the-page ad units display as a user navigates from one webpage to the next webpage. The ad appears after the user leaves the initial page, but before the target page displays on the user’s screen. The ad is self-contained within its own browser window and may not appear as an overlay on the target page content. Forms of interstitials can include a variation of the following terms:</p> <ul style="list-style-type: none">• Splash screens – a preliminary page that precedes the regular home page of a Web site that usually promotes a particular site feature or provides advertising. A splash page is timed to move onto the home page after a short period of time.• Superstitials – ads that are distinct from interstitials because of the much higher ad quality, and that they play instantly (ads are fully downloaded before they are displayed).• Expandable Ads - Rich media ads that can be enlarged to dimensions beyond the initial dimensions of the placement they fill on the webpage. The user initiates expanding events, sometimes after the ad initially expands briefly on its own to catch the user’s attention.• Overlay: An ad unit that displays over the webpage content briefly when initiated.• Pop-up ads and pop-under ads – an advertisement that appear in a separate window which automatically loads over an existing content window, without an associated banner.
Digital audio	<p>Refers to partially or entirely advertising-supported audio content available to consumers on a streaming or downloaded basis, delivered via the wired or mobile internet. This includes a wide range of services, such as the following:</p> <ul style="list-style-type: none">• Online audio streams of terrestrial radio broadcasts• Online only streaming radio stations with either professional or amateur DJs and/or hosts• On-demand, streamed audio services that create playlists of artists, tracks and/or genres based on user preferences without human editors or DJs• Downloaded audio content accessed via a website or hosting application for time-shifted listening; e.g. podcast• Music or spoken word audio content delivered within a different website or application; (e.g. in-game music services)
Digital video advertising	<p>Advertising that appears before, during or after digital video content in a video player (i.e. pre-roll, mid-roll, post-roll video ads). Digital Video Ads include TV commercials online and can appear in streaming content or in downloadable video. Display-related ads on a page (that are not in a player) which contain video are categorized as rich media ads.</p>
Mobile advertising	<p>Advertising tailored to and delivered through wireless mobile devices such as smartphones, feature phones (e.g. lower-end mobile phones capable of accessing mobile content), and media tablets. Typically taking the form of static or rich media display ads, text messaging ads, search ads, or audio/video spots, such advertising generally appears within mobile websites (e.g. websites optimized for viewing on mobile devices), mobile apps (e.g. applications for Smartphones running proprietary or open operating systems), text messaging services (i.e. SMS, MMS) or within mobile search results (i.e., 411 listings, directories, mobile-optimized search engines).</p> <p>Mobile advertising formats include: Search, Display-related (banner ads, video, sponsorships, and rich media), and Other (lead generation, classifieds and directories, and audio) advertising served to mobile devices.</p>
Social media advertising	<p>Advertising delivered on social platforms, including social networking and social gaming websites and apps, across all device types, including desktop, laptop, smartphone and tablet.</p>
Impression-based	<p>Cost-per-thousand (CPM) pricing model</p>
Performance-based	<p>Cost-per-click, sale, lead, acquisition, or application (e.g., credit card application) or straight revenue share (e.g., % commission paid upon sale)</p>
Hybrid	<p>Any mix of impression-based pricing plus performance-based compensation within one ad campaign</p>

Survey scope and methodology

Survey scope The Interactive Advertising Bureau (IAB) retained PwC to establish a benchmark for measuring the growth of internet/online/mobile advertising revenues. The “IAB internet advertising revenue report” is part of an ongoing IAB mission to provide an accurate barometer of internet advertising growth.

To achieve differentiation from existing estimates and accomplish industry-wide acceptance, key aspects of the survey include:

- Obtaining historical data directly from companies generating internet/online/mobile advertising revenues;
- Making the survey as inclusive as possible, encompassing all forms of internet/online/mobile advertising, including websites, consumer online services, ad networks and exchanges, mobile devices, and email providers; and
- Ensuring and maintaining a confidential process, releasing only aggregate data.

PwC performs the following:

- Compiles a database of industry participants selling internet/online and mobile advertising revenues;
- Conducts a quantitative web survey with leading industry players, including web publishers, ad networks and exchanges, commercial online service providers, mobile providers, email providers, and other online media companies;
- Acquires supplemental data through the use of publicly disclosed information;
- Requests and compiles several specific data items, including monthly gross commissionable advertising revenue by transaction;
- Identifies non-participating companies and applies a conservative revenue estimate based on available public sources; and,
- Analyzes the findings, identifies and reports key trends.



Historical data findings

Annual and quarterly revenue growth

	Revenue (in mil)	Q/Q growth	Y/Y growth
Q1 2003	\$1,632	3%	7%
Q2 2003	\$1,660	2%	14%
Q3 2003	\$1,793	8%	24%
Q4 2003	\$2,182	22%	38%
Total 2003	\$7,267		21%
Q1 2004	\$2,230	2%	37%
Q2 2004	\$2,369	6%	43%
Q3 2004	\$2,333	-2%	30%
Q4 2004	\$2,694	15%	24%
Total 2004	\$9,626		33%
Q1 2005	\$2,802	4%	25%
Q2 2005	\$2,985	7%	26%
Q3 2005	\$3,147	5%	35%
Q4 2005	\$3,608	15%	34%
Total 2005	\$12,542		30%
Q1 2006	\$3,848	7%	37%
Q2 2006	\$4,061	6%	36%
Q3 2006	\$4,186	3%	33%
Q4 2006	\$4,784	14%	33%
Total 2006	\$16,879		35%
Q1 2007	\$4,899	2%	27%
Q2 2007	\$5,094	4%	25%
Q3 2007	\$5,267	3%	26%
Q4 2007	\$5,946	13%	24%
Total 2007	\$21,206		26%
Q1 2008	\$5,765	-3%	18%
Q2 2008	\$5,745	0%	13%
Q3 2008	\$5,838	2%	11%
Q4 2008	\$6,100	4%	2%
Total 2008	\$23,448		11%
Q1 2009	\$5,468	-10%	-5%
Q2 2009	\$5,432	-1%	-5%
Q3 2009	\$5,500	1%	-6%
Q4 2009	\$6,261	14%	3%
Total 2009	\$22,661		-3%
Q1 2010	\$5,942	-5%	9%
Q2 2010	\$6,185	4%	14%
Q3 2010	\$6,465	5%	18%
Q4 2010	\$7,449	15%	19%
Total 2010	\$26,041		15%

	Revenue (in mil)	Q/Q growth	Y/Y growth
Q1 2011	\$7,264	-2%	22%
Q2 2011	\$7,678	6%	24%
Q3 2011	\$7,824	2%	21%
Q4 2011	\$8,970	15%	20%
Total 2011	\$31,735		22%
Q1 2012	\$8,307	-7%	14%
Q2 2012	\$8,722	5%	14%
Q3 2012	\$9,236	6%	18%
Q4 2012	\$10,307	12%	15%
Total 2012	\$36,570		15%
Q1 2013	\$9,806	-5%	18%
Q2 2013	\$10,260	5%	18%
Q3 2013	\$10,609	3%	15%
Q4 2013	\$12,106	14%	17%
Total 2013	\$42,781		17%
Q1 2014	\$11,414	-6%	16%
Q2 2014	\$11,678	2%	14%
Q3 2014	\$12,207	5%	15%
Q4 2014	\$14,152	16%	17%
Total 2014	\$49,451		16%
Q1 2015	\$13,179	-7%	16%
Q2 2015	\$14,302	9%	23%
Q3 2015	\$14,688	3%	20%
Q4 2015	\$17,382	18%	23%
Total 2015	\$59,550		20%
Q1 2016	\$15,872	-9%	20%
Q2 2016	\$16,917	7%	18%
Q3 2016	\$18,204	8%	24%
Q4 2016	\$21,647	19%	25%
Total 2016	\$72,640		22%
Q1 2017	\$19,404	-10%	22%
Q2 2017	\$20,847	7%	23%
Q3 2017	\$21,832	5%	20%
Q4 2017	\$26,183	20%	21%
Total 2017	\$88,265		22%
Q1 2018	\$23,913	-9%	23%
Q2 2018	\$25,628	7%	23%
Q3 2018	\$26,573	4%	22%
Q4 2018	\$31,373	18%	20%
Total 2018	\$107,487		22%
Q1 2019	\$28,019	-11%	17.2%
Q2 2019	\$29,898	7%	16.7%

Source: IAB/PwC Internet Ad Revenue Report, HY 2019

About the Interactive Advertising Bureau

The Interactive Advertising Bureau (IAB) empowers the media and marketing industries to thrive in the digital economy. Its membership is comprised of more than 650 leading media companies, brands, and the technology firms responsible for selling, delivering, and optimizing digital ad marketing campaigns. The trade group fields critical research on interactive advertising, while also educating brands, agencies, and the wider business community on the importance of digital marketing. In affiliation with the IAB Tech Lab, IAB develops technical standards and solutions. IAB is committed to professional development and elevating the knowledge, skills, expertise, and diversity of the workforce across the industry. Through the work of its public policy office in Washington, D.C., the trade association advocates for its members and promotes the value of the interactive advertising industry to legislators and policymakers. Founded in 1996, IAB is headquartered in New York City.

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As business, accounting, and tax advisors to many of the world's leading Entertainment, Media, and Communications (EMC) and Technology (Tech) companies, PwC (www.pwc.com) has an insider's view of trends and developments driving the industry. With approximately 1,200 practitioners serving EMC and Tech clients in the United States, PwC is deeply committed to providing clients with industry experience and resources. In recent years, our pioneering work in EMC and Tech has included developing strategies to leverage digital technology, identifying new sources of financing, and marketplace positioning in industries characterized by consolidation and transformation. Our experience reaches across all geographies and segments of the EMC and Tech sectors, including broadband, wireless, the internet, music, film, television, publishing, advertising, gaming, theme parks, computers and networking, and software. With thousands of practitioners around the world, we're always close at hand to provide deep industry knowledge and resources.

Our services include:

- Business assurance services
- Web audience measurement and advertising delivery auditing and advisory
- IAB Measurement Certification Compliance auditing
- Privacy policy structuring, attestation, and compliance advisory
- Mergers & acquisitions assistance
- Tax planning and compliance
- Capital sourcing and IPO assistance
- Marketing & Media operations enablement

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