



PubMatic

Q1
2020

**QUARTERLY
MOBILE INDEX**

PubMatic's Quarterly Mobile Index (QMI) report was created to provide both publishers and advertisers with key insights into the mobile advertising industry.

ABOUT PUBMATIC'S QUARTERLY MOBILE INDEX

By analyzing over 15 trillion global advertiser bids flowing each month through PubMatic's platform, we can observe real-time developments in the mobile space that may allude to broader digital industry trends. We can then compare this information to other published data to further understand changes in the mobile landscape. At PubMatic, we are committed to providing best-in-class mobile tools and services, and believe that information sharing is crucial in aligning the digital industry towards best practices and, ultimately, growth in mobile advertising.

Note that directional data might not be comparable with prior reports.



THE FOLLOWING THREE KEY TRENDS EMERGED IN Q1 2020

KEY TREND

01

Mobile will lead digital advertising's recovery

KEY TREND

02

Video ads are taking a hit but increased mobile video consumption behavior is here to stay

KEY TREND

03

Publishers and advertisers seek efficiency and control in-app

WHAT DOES THIS MEAN FOR PUBLISHERS AND ADVERTISERS?

1

This COVID 19 era is putting an emphasis on efficiency, and a well-structured mobile in-app monetization strategy will pay its dividends.

Digital advertising took an early hit during the pandemic because this type of media spending is easy to rein in as opposed to traditional, upfront, committed buys. This also means that the return to growth will be much faster when marketers are ready to bring customers back quickly. Digital is the fastest way to reach them, particularly through their mobile devices where consumer behavior is shifting at an accelerated rate. Advertisers are more stringent with their ad dollars during an economic downturn, so efficiency means focus on quality (adoption app-ads. txt spiked at the end of March), and more transparent automated selling through mobile header bidding.¹

¹ PubMatic App-ads.txt Dashboard

2

With more viewers utilizing ad supported platforms, delivering a great TV-like ad experience is critical.

Despite the impact of stay-at-home viewing, the industry is experiencing a steep reduction in video marketing budgets as brands prepare for an uncertain economic climate. While there is a pullback on upfront and guaranteed commitments, some traditional channels are re-deploying budgets to digital video.^{2,3} SVOD (subscription-based video on demand) is reaping the benefits during the crisis, but it is anticipated that viewership for AVOD (advertiser-based video on demand) will grow as subscription fatigue sets in.⁴ More viewers alone will not move the needle for advertising investment when the economy is contracting, however. Buyers need flexible and efficient ad solutions, which programmatic is primed to deliver, along with technology partners who can innovate around user experience.

3

The downturn caused by the COVID-19 outbreak is an opportunity for publishers and app developers to review their current mobile in-app programmatic setup.

The effect of the global downturn puts a spotlight on inefficient auctions, and calling for more economical and transparent digital advertising practices – one that header bidding is set up to deliver in-app.⁵ Private marketplaces (PMP) address another facet of inefficiency – waste from ad fraud. Ad fraud remains higher in-app than in browser environments.⁶ Therefore, PMPs can provide a shelter through transparent ad placements especially when advertisers are more fiscally conscious.

² “Broadcast TV Networks Cancel In-Person Upfront Pitches to Advertisers,” Nat Ives, Wall Street Journal, March 13, 2020

³ “Analyst Take: How The Coronavirus Will Change Our US Digital Video Ad Spending Forecast,” Nicole Perrin, eMarketer, April 16, 2020

⁴ “Coronavirus Is Accelerating Pluto TV’s Already Massive Growth,” Allison Schiff, AdExchanger, March 26, 2020

⁵ “In-App Advertising: The Land That Programmatic Forgot?,” Ad Exchanger, April 28, 2020

⁶ “Digital Ad Fraud 2020,” Nicole Perrin, eMarketer, February 11, 2020



KEY TREND

01

MOBILE WILL LEAD DIGITAL ADVERTISING'S RECOVERY

The coronavirus has brought advertiser spending in certain categories, such as travel and sports, to a halt. However, with many markets sheltering in place at home, content consumption and web traffic intensified, especially on mobile devices. In APAC where publishers and app developers are finding light after a pandemic-driven lockdown, mobile is at the forefront of its road to recovery.

MOBILE USAGE IS GROWING WHILE AD SPENDING FALLS

The average user will spend 4 hours and 18 minutes a day on their mobile phone, rising 10% over last year.⁷ Despite increased mobile traffic, ad spending fell 15% post-impact. Mobile is showing more resilience than desktop, however; ad spend through desktop sites saw a steeper decline of 25%. Mobile's fortitude is largely due to the surge in app usage from gaming, food delivery services and video streaming apps.⁸

SHARE OF AVERAGE TIME SPENT WITH MEDIA IN THE US, 2018-2022⁷

% of total

	2018	2019	2020	2021	2022
Digital	51.1%	53.7%	55.3%	56.3%	57.6%
Mobile (nonvoice)	29.1%	31.1%	31.7%	32.6%	33.5%
Audio	9.1%	10.0%	9.2%	9.9%	10.4%
Social networks	6.1%	6.3%	6.5%	6.6%	6.7%
Video*	5.0%	5.6%	5.8%	6.1%	6.4%
Other	8.9%	9.2%	10.1%	10.0%	10.0%
Desktop/laptop**	15.7%	15.2%	14.7%	14.2%	14.1%
Video*	3.1%	3.0%	2.9%	2.9%	2.9%
Audio	0.9%	1.0%	0.8%	0.9%	0.9%
Social networks	1.0%	0.8%	0.8%	0.7%	0.6%
Other	10.6%	10.4%	10.2%	9.7%	9.7%
Other connected devices	6.3%	7.4%	8.9%	9.5%	10.0%
TV***	29.9%	28.0%	28.1%	26.9%	25.7%
Radio***	13.7%	13.1%	11.7%	12.0%	12.0%
Print***	2.8%	2.6%	2.1%	2.2%	2.2%
Newspapers	1.6%	1.4%	1.2%	1.2%	1.2%
Magazines	1.2%	1.2%	1.0%	1.0%	1.0%
Other traditional media	2.6%	2.6%	2.7%	2.6%	2.6%
TOTAL	12:24	12:30	13:35	13:23	13:15

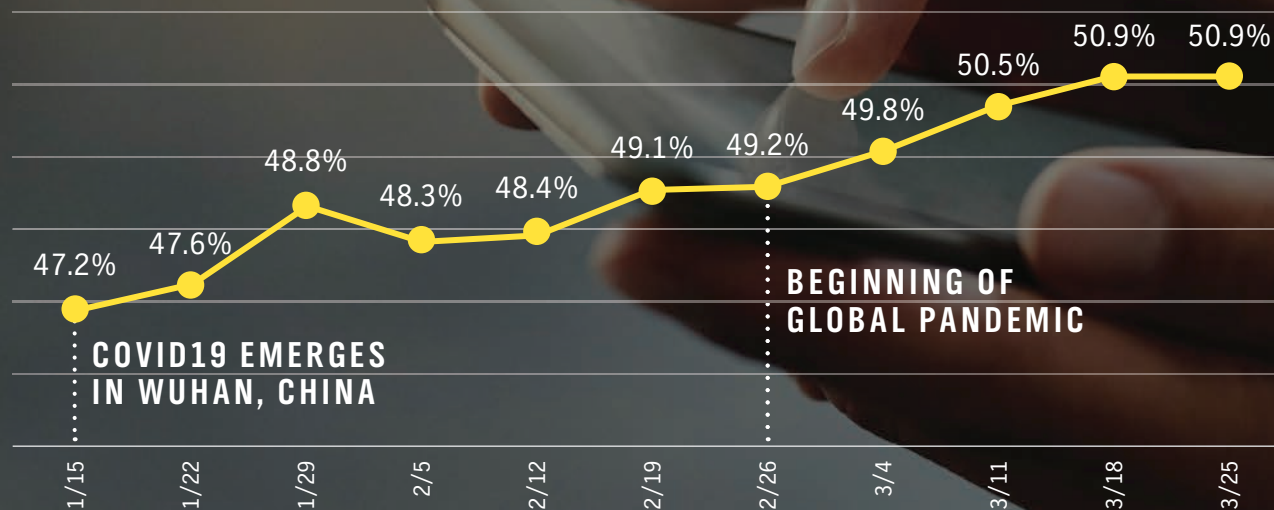
⁷ "US Time Spent With Media 2020," Mark Dolliver, eMarketer, April 29, 2020. Note: ages 18+; time spent with each medium includes all time spent with that medium, regardless of multitasking; *excludes time spent with video via social networks; **includes all internet activities on desktop and laptop computers. ***excludes digital

⁸ "App installs surge as lockdowns keep people at home, study says," Robert Williams, Mobile Marketer, April 22, 2020

SHIFT FROM DESKTOP TOWARDS MOBILE IS ACCELERATING

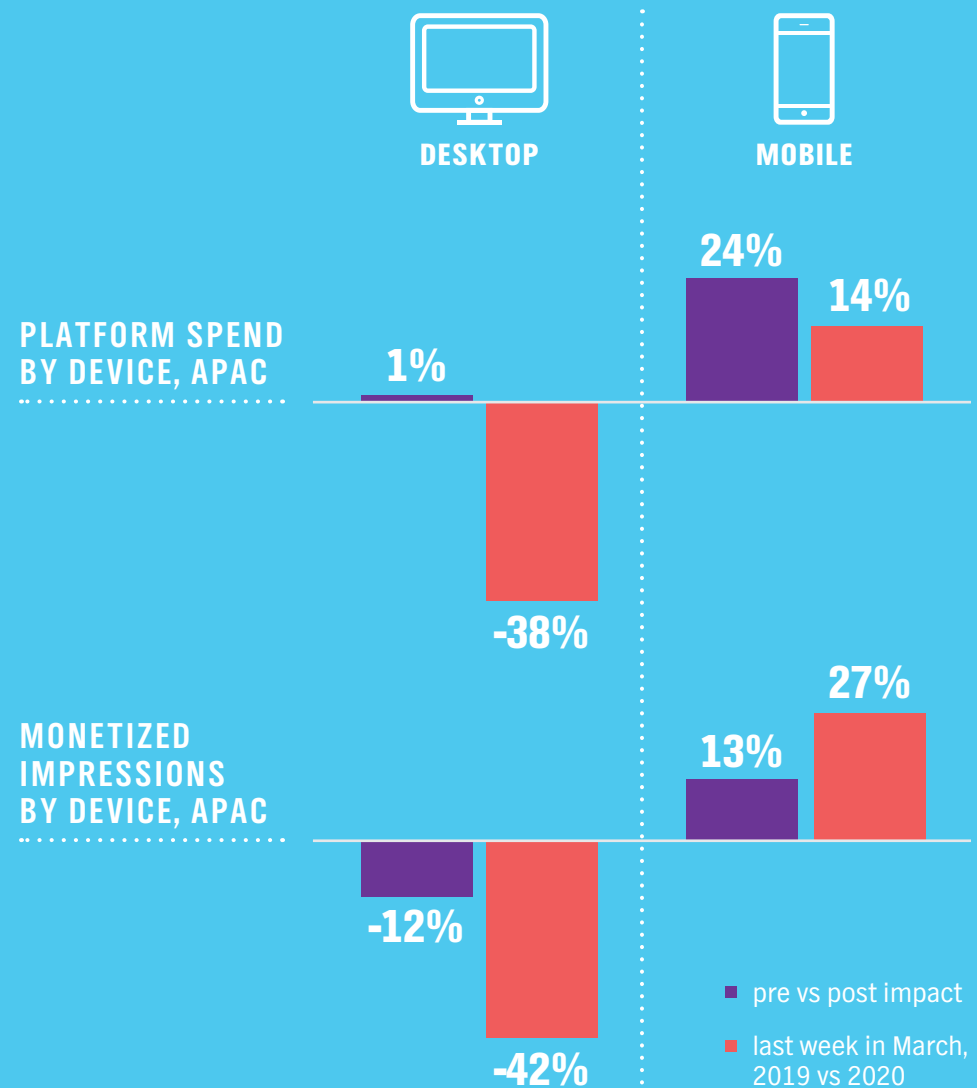
Despite the declines across all platforms, the shift in share from desktop towards mobile is happening at a quicker pace than before the pandemic, with total mobile reaching 51% by the end of Q1 from 48% at the beginning of March before the onset of the global pandemic.

MOBILE SHARE OF MONETIZED IMPRESSIONS



PROGRAMMATIC RECOVERY IS PAVED WITH MOBILE

The novel coronavirus first surfaced in central China where the city of Wuhan went into quarantine on January 24, 2020.⁹ As ad spend is gradually rising in APAC in tandem with its rehabilitation, mobile is the shining star in its path to recovery – both mobile platform spend and impressions are higher than pre-impact levels and last year by the end of Q1.



⁹ "A comprehensive timeline of the new coronavirus pandemic, from China's first COVID-19 case to the present," Holly Secon, Aylin Woodward, and Dave Mosher, Business Insider, April 23, 2020

*Pre-impact in APAC occurred earlier than the rest of the world. Pre-impact is week of Jan 15 and post-impact is week of Mar 25.



KEY TREND

02

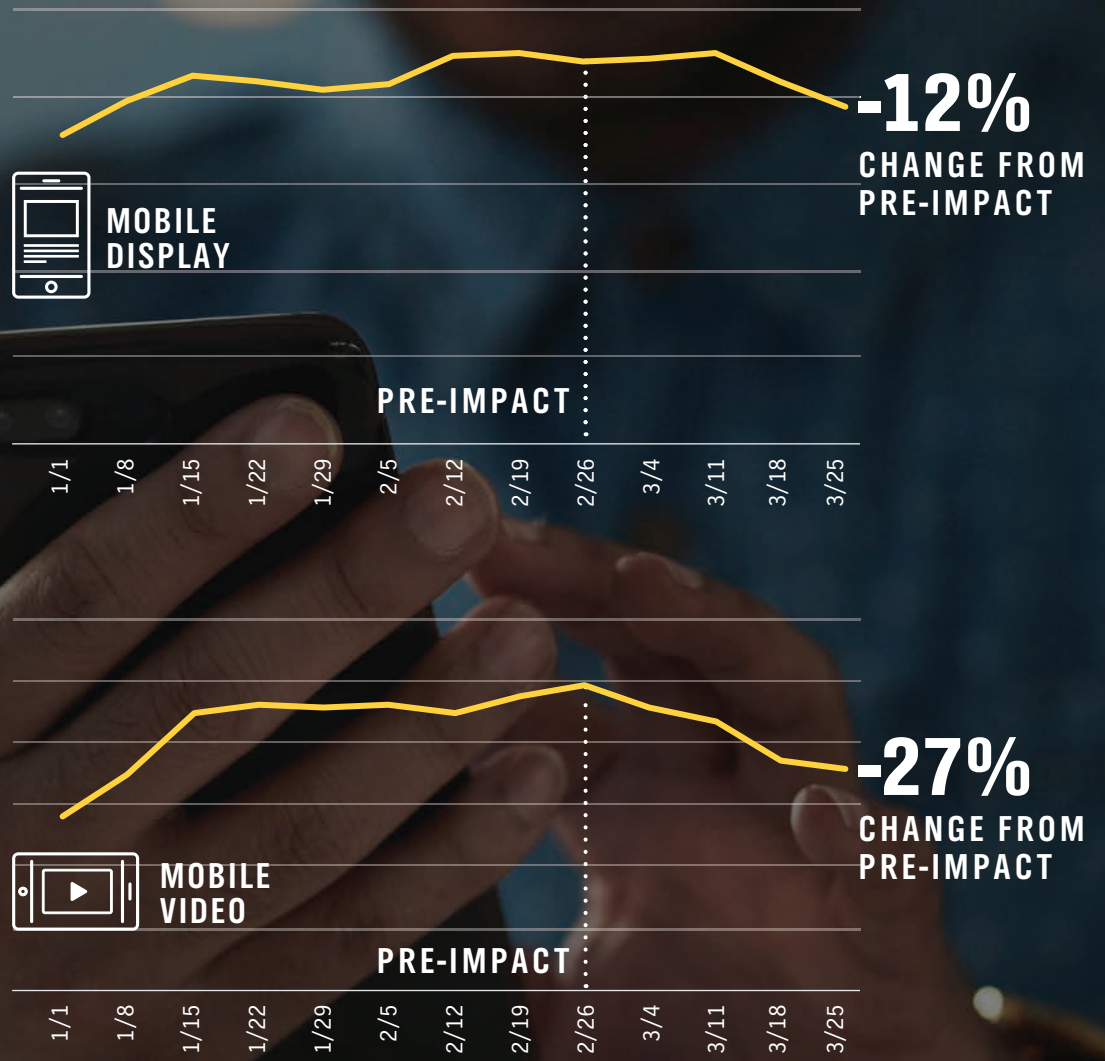
VIDEO ADS ARE TAKING A HIT BUT INCREASED MOBILE VIDEO CONSUMPTION IS HERE TO STAY

Mobile video was heading into another banner year until COVID-19 arrived. Mobile video share plateaued during the pandemic despite a bump in viewership. Since video ads are typically sold at a premium, they were the first to be cut from advertising budgets and hence, more negatively impacted than display ads.

MOBILE VIDEO ADS CONTRACTED MORE THAN DISPLAY

Mobile video ad budgets are being squeezed during the pandemic; mobile video ad spend declined 27% whereas display fell 12% after impact. However, mobile video spending was expanding at such breakneck speeds before the global crisis that mobile video ad spend declined less than display in the quarter overall.

MOBILE PLATFORM SPEND TRENDS, Q1 2020

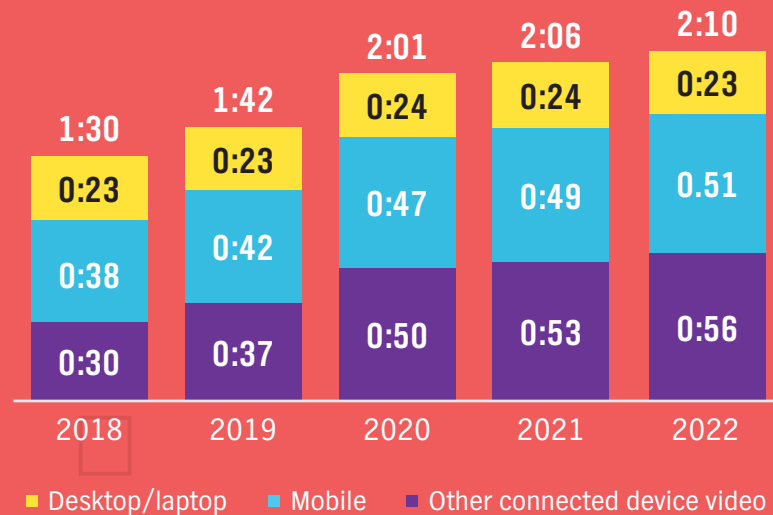


IN-APP VIEWERSHIP INCREASED HIGHER THAN THE HOLIDAY SEASON

As global citizens do their part to flatten the curve, they are spending more of their daily hours on mobile devices. During the peak of the COVID-19 infection in China, average daily smartphone usage jumped to 5 hours, a 30% increase over 2019.¹⁰ Mobile in-app video streaming in China also reached record levels, rising 20% higher than the weekly average over Q4 2019.¹¹ A similar trend is currently playing out in the rest of the world, where mobile devices are driving incremental digital video usage.¹²

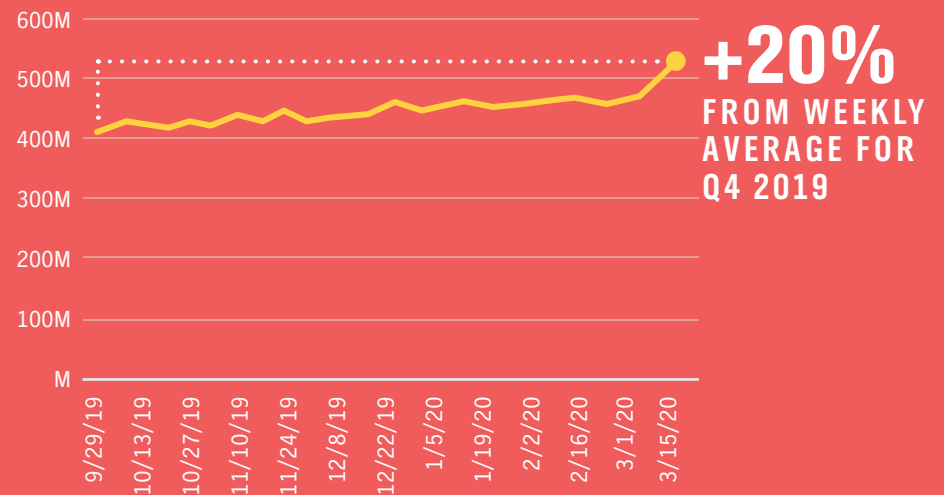
DIGITAL VIDEO: AVERAGE TIME SPENT IN THE US, BY DEVICE, 2018-2022¹²

Hrs:mins per day



HOURS SPENT IN VIDEO STREAMING APPS, ANDROID PHONES¹¹

During COVID-19 Outbreak in the US



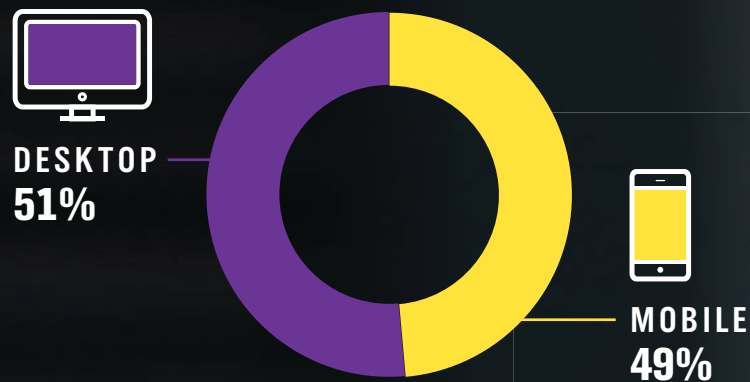
^{10,11} "The Impact Of Coronavirus On The Mobile Economy," App Annie, Mar 17 and April 8, 2020

¹² "US Time Spent with Media 2020: Gains in Consumer Usage During the Year of COVID-19 and Beyond," eMarketer, April 29, 2020

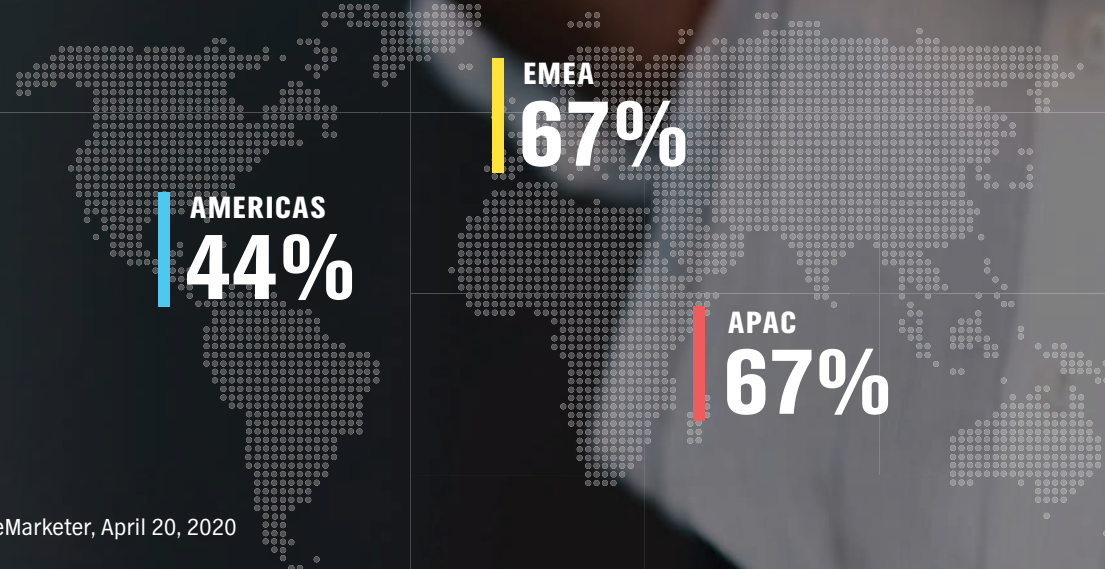
MOBILE VIDEO SHARE PLATEAUS AMID GLOBAL PANDEMIC

While experts believe that video ad spending in western markets will decline into June of this year, we saw the global mobile share of video ad spend remain constant at 49% in Q1 2020 over last quarter.¹³ The share varied across regions: Americas – 44%, EMEA – 67%, and APAC – 67%.

VIDEO AD SPEND SHARE BY DEVICE, Q1 2020



MOBILE VIDEO AD SPEND SHARE BY REGION, Q1 2020



¹³ "How the Coronavirus Will Change Our US Digital Video Ad Spending Forecast," eMarketer, April 20, 2020

KEY TREND

03

PUBLISHERS AND ADVERTISERS SEEK EFFICIENCY AND CONTROL IN-APP

When digital advertising budgets contracted at the end of the quarter, publishers continued to integrate header bidding in anticipation of leaner times. Mobile in-app header bidding expanded as app developers are beginning to overcome technical challenges that posed a significant barrier last year.¹⁴ For example, PubMatic's OpenWrap SDK solves for key adoption hurdles such as creative rendering, simultaneous auctioning, and OM SDK integration. Advertisers, however, are looking for more control; global buyers are utilizing PMPs to help protect their branding, and avoid ad fraud.¹⁵

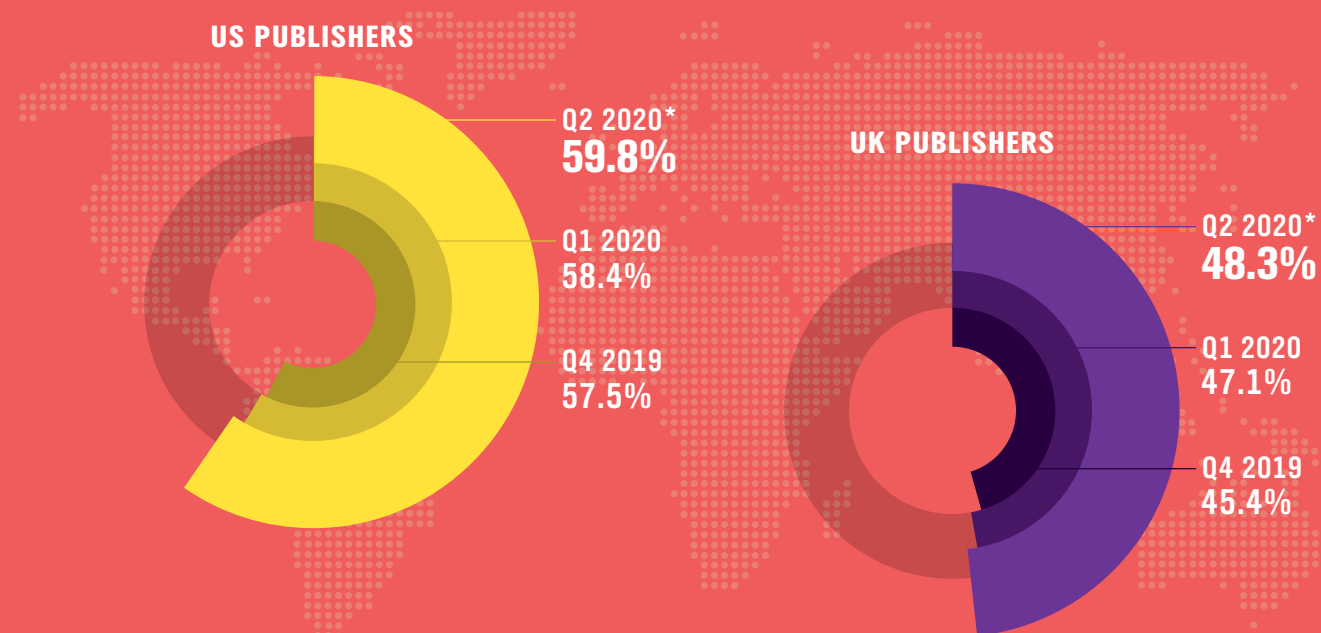
¹⁴ "The Rise of True In-App Header Bidding," Mathew Broughton, ExchangeWire, July 2019

¹⁵ "Everyone wants control: Traffic soars, but programmatic ad prices drop," Seb Joseph, Digiday, March 27, 2020

MOBILE HEADER BIDDING IS FARING BETTER THAN DESKTOP

Publishers continue to adopt header bidding to optimize their monetization strategy during these uncertain times. 58% of US and 47% of UK publishers adopted header bidding in Q1, up from last quarter, and is expected to continue to rise into Q2.¹⁶ Overall header bidding ad spend fell 17% over last quarter; however, mobile declined 16% whereas desktop saw a sharper decline of 20%.

HEADER BIDDING ADOPTION, BY GEOGRAPHY¹⁶



¹⁶ "Header Bidding 2020 Tracker," Adzerk, Q1 2020. *as of April 2020

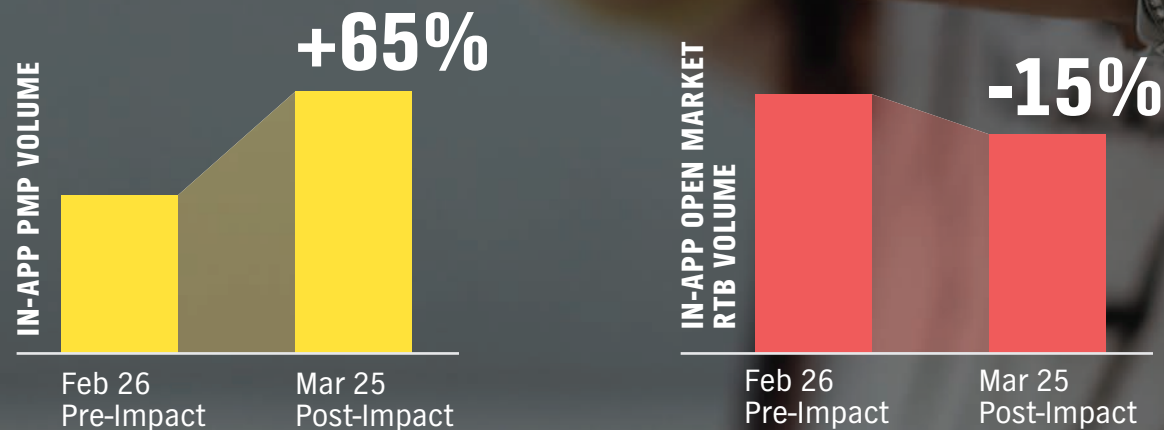
ADVERTISERS SWING BUDGETS INTO PMP IN-APP, AWAY FROM OPEN MARKET DESKTOP

The incremental time spent on mobile devices serves as a boon for PMP since the increase is largely coming from apps. Mobile in-app PMP volume rose 65% during the pandemic while desktop PMP volume fell 20% and in-app volume in the open market fell 15%.

PMP VOLUME CHANGE BY PLATFORM, PRE- VS POST-IMPACT



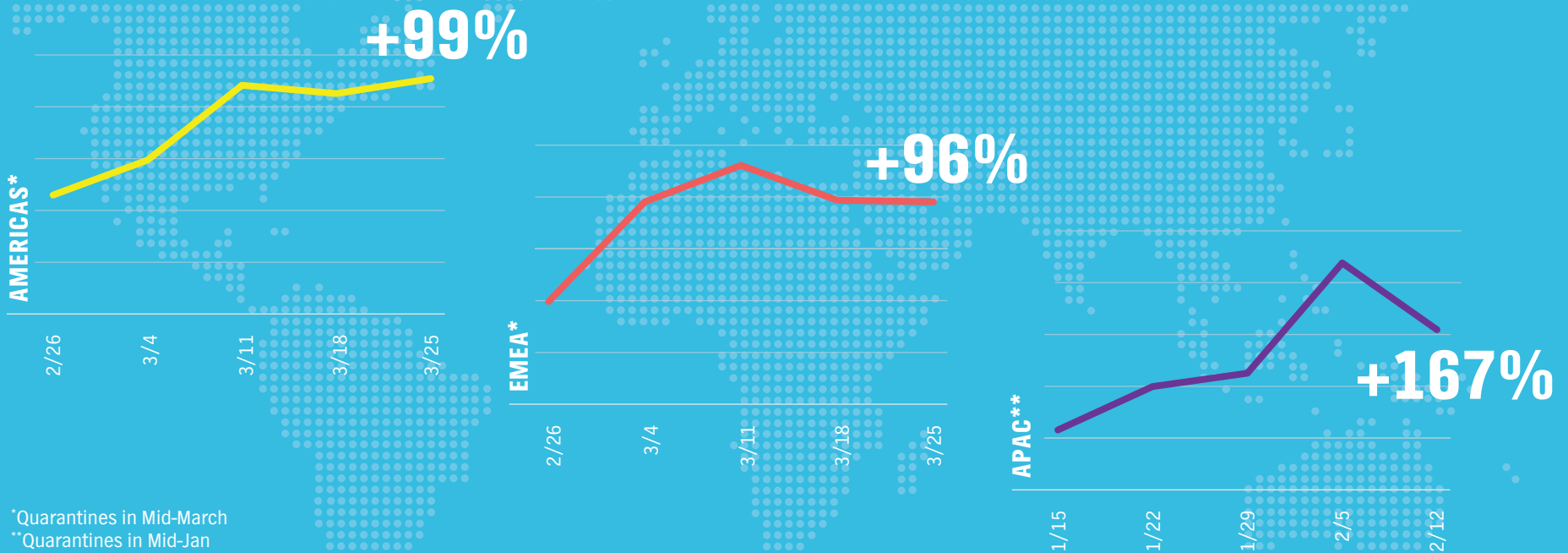
IN-APP VOLUME BY CHANNEL, PRE- VS POST-IMPACT



IN-APP PMP AD SPEND EXPANDS ACROSS ALL REGIONS

Advertisers reacted quickly to shelter-in-place announcements around the world. PMP in-app spending roughly doubled within the first 5 weeks in each market after a lockdown: +99% in Americas, +96% in EMEA, +167% in APAC. Spending in APAC is up 277% from their first quarantine in January to the end of the quarter, suggesting further growth ahead in Americas and EMEA if they continue to follow in APAC's trajectory.

IN-APP PMP AD SPEND,
BY REGION



*Quarantines in Mid-March
**Quarantines in Mid-Jan

QMI Methodology

PubMatic's yield and data analytics team analyzes over 15 trillion advertiser bids on a monthly basis, utilizing the company's best-in-class analytics capabilities. The Q1 2020 QMI incorporates impressions, revenue and eCPM data from these reports to provide a high-level analysis of key trends within the mobile advertising industry. Analysis is based on PubMatic-sourced data except as noted. Percentages in some figures may not sum to 100% due to rounding. "Monetized impressions" or "paid impressions" are defined as impressions that were sold through the PubMatic platform, and "eCPM" is defined as the cost per one thousand impressions.

Disclaimer: This QMI may include inaccuracies or typographical errors, and is based on operational data that has not been audited or reviewed by a third party. It may contain forward-looking statements about future results and other events that have not yet occurred. Actual results may differ materially from PubMatic's expressed expectations due to future risks and uncertainties, and past performance or trends are no guarantee of future results. PubMatic does not intend to update the information contained in this QMI if any information or statement contained herein later turns out to be inaccurate.



About PubMatic

PubMatic delivers superior revenue to publishers by being the sell-side platform of choice for agencies and advertisers. The PubMatic platform empowers independent app developers and publishers to maximize their digital advertising monetization while enabling advertisers to increase ROI by reaching and engaging their target audiences in brand-safe, premium environments across ad formats and devices. Since 2006, PubMatic has created an efficient, global infrastructure

and remains at the forefront of programmatic innovation. Headquartered in Redwood City, California, PubMatic operates 14 offices and nine data centers worldwide.

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