

Demand Quality Report for Q1 2019

NEW YORK - May 16, 2019 - Confiant, the cyber security company protecting the reputations, revenues, and resources of publishers and platforms, releases its Q1 2019 Demand Quality Report.

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Purpose of the Report

This report provides insight into the quality of demand in programmatic advertising, based on a normalized sample of 100 billion impressions. The global propagation of programmatic advertising, with its automation of buying and selling, holds significant opportunity for publishers but introduces many new challenges. Understanding how the policies and practices of the buy side affect the publisher and the user is critical to ensure the continued scaling of the industry. Demand quality issues like Malicious, In-Banner Video, and Low Quality ads diminish the value of digital ad demand coming through DSPs and SSPs, but there have historically been no demand quality benchmarks for the industry. This report, the fourth in a series published by Confiant, aims to change that.

Confiant is a cyber security company that protects the reputation, revenues, and resources of publishers and platforms, with real-time ad-verification software. Leveraging its critical position as the first real-time ad-quality verification vendor in the industry, Confiant has captured unique insights into the quality of ads served by the programmatic marketplace. In 2018, Confiant released the industry's first-ever benchmark report on the state of programmatic demand. Today's report covers Q1 2019. This report benchmarks the actual volume of malicious and misrepresented ads that harm publishers and attack their users every day.

Definitions

In the context of this research, the terms below are referring to the following definitions:

Malicious Creative - A creative that includes (usually obfuscated) Javascript that spawns a forced redirect or loads a secondary, or tertiary, payload for similar malicious purposes. Most malicious creatives exist for the purpose of forcing users to interact with phishing scams, but some perform cryptojacking or infect the user's device to propagate botnets and other nefarious activities.

In-Banner Video (IBV) - IBV refers to the practice of serving video ads in banner placements without the publisher's consent, and often without the advertiser's consent either. In these cases, a video ad unit is loaded within a banner placement as a display unit, instead of playing the video ad within a media player.

Low Quality Creatives - Ad creative violations across 16 different quality specifications selected by the publisher. The dimensions include audio/video related violations, creatives probing for user's geolocation, the network load of the ad, and more.

US Rates by Quarter

Below is a visualization comparing Malicious, In-Banner Video, and Low Quality impression rates quarter by quarter over the last 5 quarters. Today's report is the first time we have reported year-over-year data. Before we dive into the numbers, a note about statistical significance: since Q1 2018, Confiant enjoyed double-digit monthly growth that enabled us to monitor 3 times more impressions this quarter versus the same period a year ago. This change in scale and coverage allows us to identify violations more quickly and closer to their first appearance in the ecosystem.

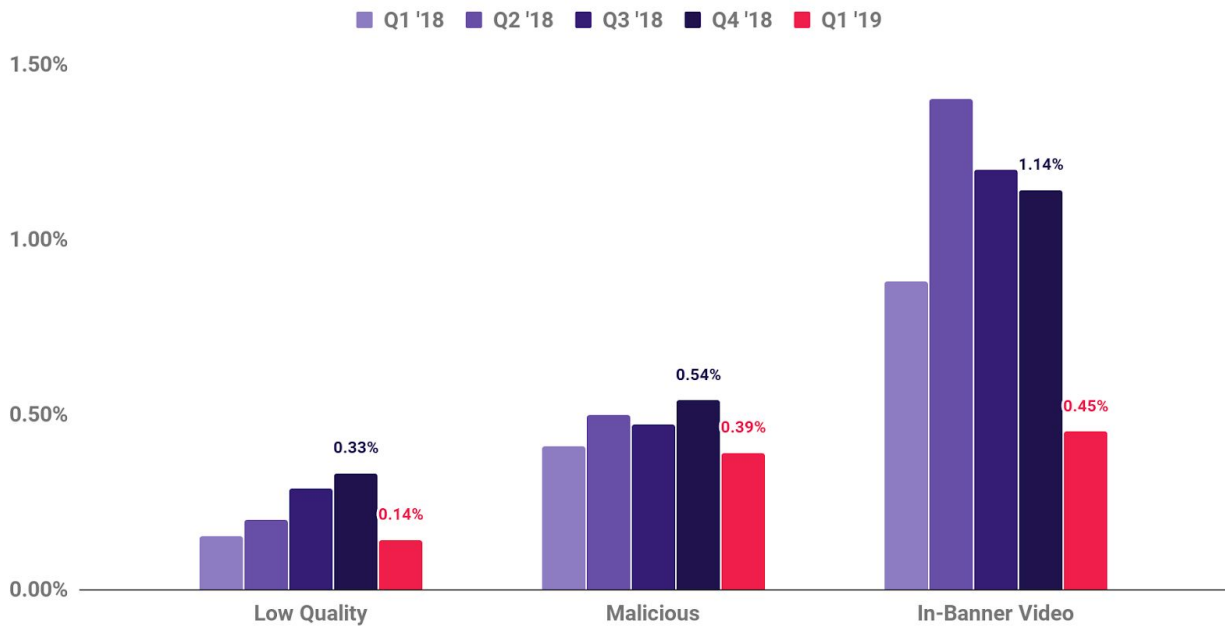


Chart 1: Quarterly rates of Low Quality, IBV, and Malicious impressions

The new year saw a significant drop in issues across all 3 of our categories. Some seasonal factors are likely at play: Q1 of last year also recorded the lowest violation rates, and some dropoff in rates is expected from Q4 to Q1 as malvertisers can no longer take advantage of the extremely high volumes and reduced staffing to infiltrate the ecosystem. It's less clear why IBV rates have fallen in each of the last 3 quarters. This cannot be explained solely by seasonality, and we expect that increased adoption of ads.txt could be reducing the opportunity for video arbitrage by removing unauthorized resellers from the ecosystem. It will be interesting to see whether this trend continues in coming quarters.

However, even with these improvements, nearly 1 in every 100 ads was impacted by a malicious or disruptive ad, a statistic that when combined with a conservative estimate of 4-5 display ads per page and 5 pages per session, suggests that **over 20% of user sessions might be impacted by malicious or disruptive ads.**

US Rates by Day of Week

As in past quarters, we observed notable changes in violation rates based on the day of the week:

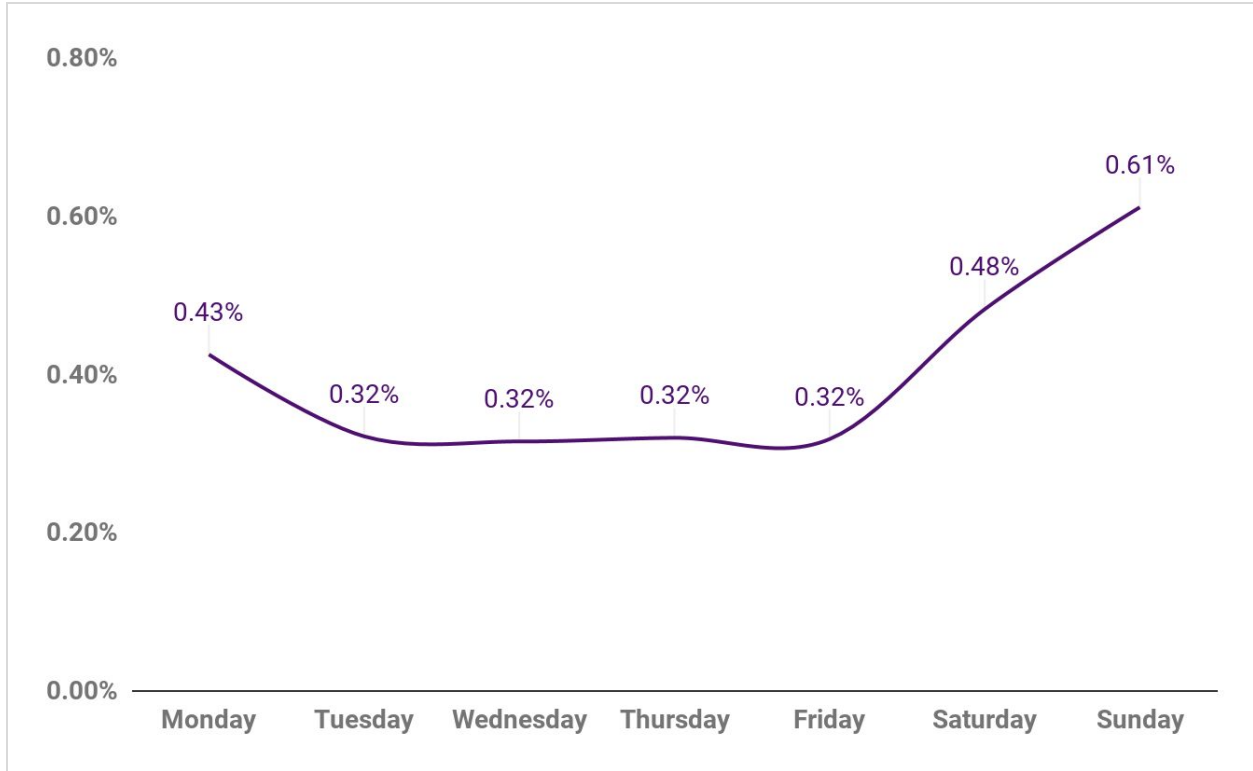
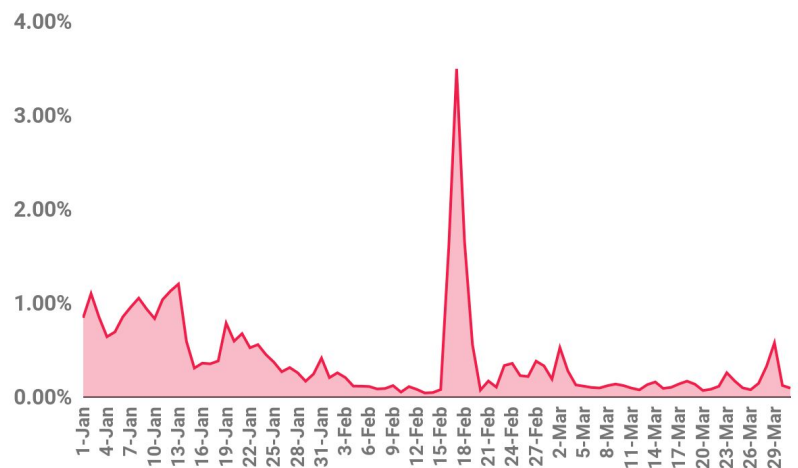


Chart 2: Average Malicious impression rates by day of week

Publishers have often observed an increase in issues over the weekend, and this is confirmed by our data. **Malicious activity on Sundays is almost 100% higher than on weekdays**, which strongly suggests that malvertisers do indeed target their campaigns to the weekends to take advantage of reduced staffing levels at the DSPs and SSPs to sneak bad creatives into the ecosystem.

This is evident with holidays as well. Three-day weekends are a particularly attractive target for malvertisers, and the largest spike in malicious ads in Q1 occurred over Presidents' Day weekend.

Chart 3: Average Malicious impression rates by day. Note the spike in malicious activity on the weekend of February 16 (Presidents' Day weekend in the U.S.)



Q1 US SSP Rankings

Last quarter, Confiant reported on the performance of the industry's top 14 SSPs. This quarter, we have narrowed our reporting somewhat to draw attention to the 12 SSPs most commonly used by publishers. This number may continue to vary due to improvements in data collection and consolidation within the industry caused by ads.txt, supply-path optimization, and other initiatives. Our intention in reporting on SSP ad quality is to clearly show the variance in their behaviors and track how it evolves over time.

As in previous reports, we chose to identify Google AdX within these rankings. As the dominant exchange, Google AdX has access to significantly more data than other exchanges, which one would expect should translate into higher efficacy when it comes to catching issues. Our data confirms this assumption, with Google AdX scoring the best overall rate and placing among the top performers for each issue type.

For malicious ads, there was a stark contrast between the best and worst SSPs:

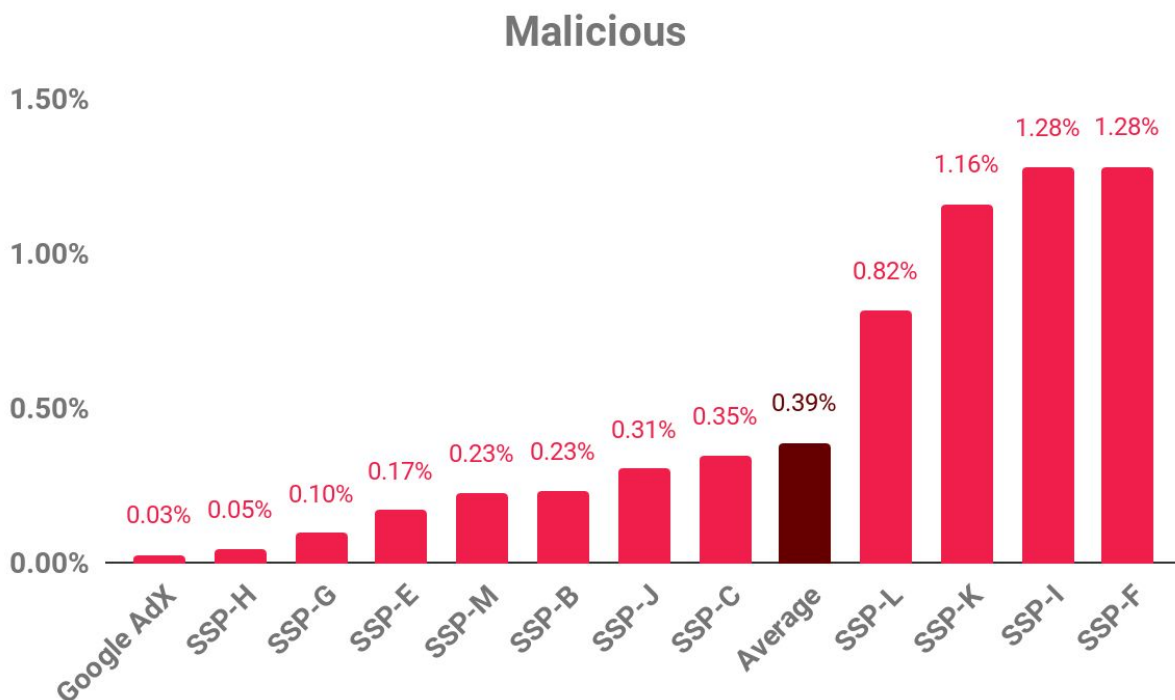


Chart 4: Malicious impression rates of 12 top SSPs in Q1 '19

Google AdX continues to perform impressively with a rate just 1/10th the overall average, a testament to their data advantage and the strength of the safeguards they have in place. SSP-H retained their second place ranking and improved their rate with a nearly 40% decrease in Malicious ads served. Conversely, SSP-I and SSP-F round out the bottom of the rankings, a repeat from the previous quarter, suggesting they have some ways to go to address their security issues. These two SSPs have a rate 42x the best performer's and 3x the average. **For these SSPs, more than 1 in every 80 impressions they**

serve is malicious, representing a huge threat to publishers, their users, and the wider industry. Other poor performers included SSP-K, which dropped significantly in the rankings as its rate increased from 0.26% in Q4 2018 to 1.16% in Q1 2019, and SSP-L, which maintained its ranking even as it worsened its rate from 0.76% in Q4 2018 to 0.82% in Q1 2019.

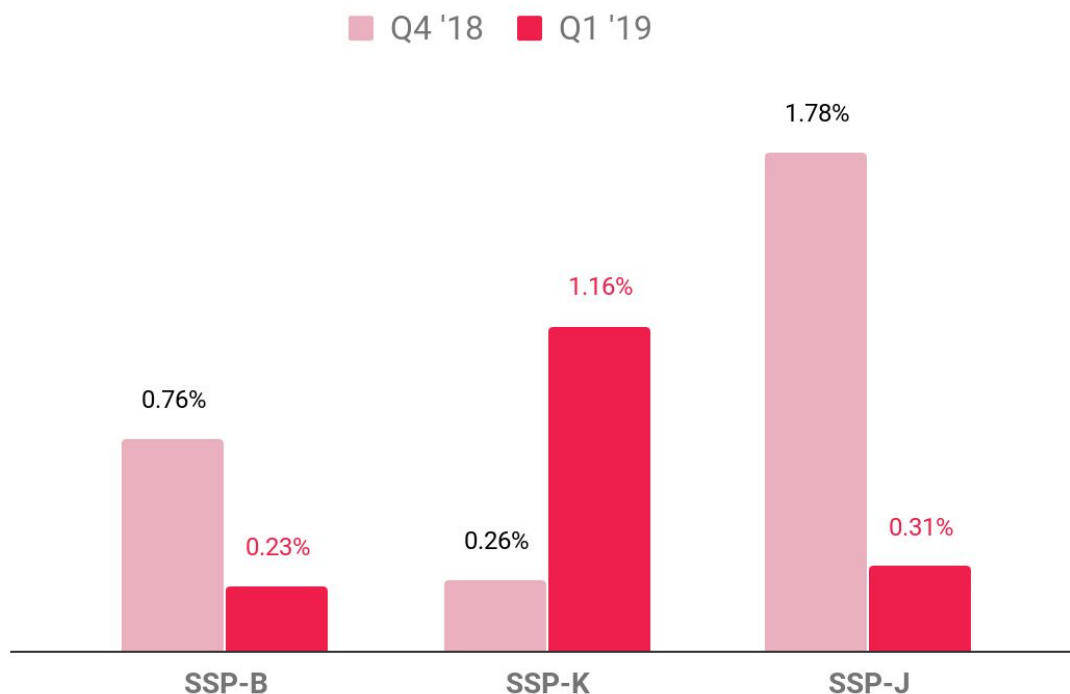


Chart 5: SSPs with biggest changes in Malicious ad impressions from Q4 '18 to Q1 '19

On the positive side, SSP-B and SSP-J recovered from setbacks in Q4 2018 to perform at a strong level. SSP-J was in last place in Q4 2018 and moved all the way to 7th place, decreasing their Malicious activity by 82%.

In-Banner Video showed an even greater disparity between the best and worst performers. The presence of IBV generally indicates lax standards on the part of the SSP. To explain why, it's important to understand that most In-Banner Video originates from an arbitrage opportunity. CPMs differ enormously between Video and Display. This creates an arbitrage opportunity wherein an unscrupulous advertiser can buy a display impression, insert a video player, and then resell the impression as a video opportunity at a much higher price to an often unaware buyer. The worst-performing SSPs are allowing resellers to exploit this arbitrage opportunity to the detriment of their buyers (who think they are buying a traditional video impression) and their publishers, whose legitimate video inventory is being devalued by this practice.

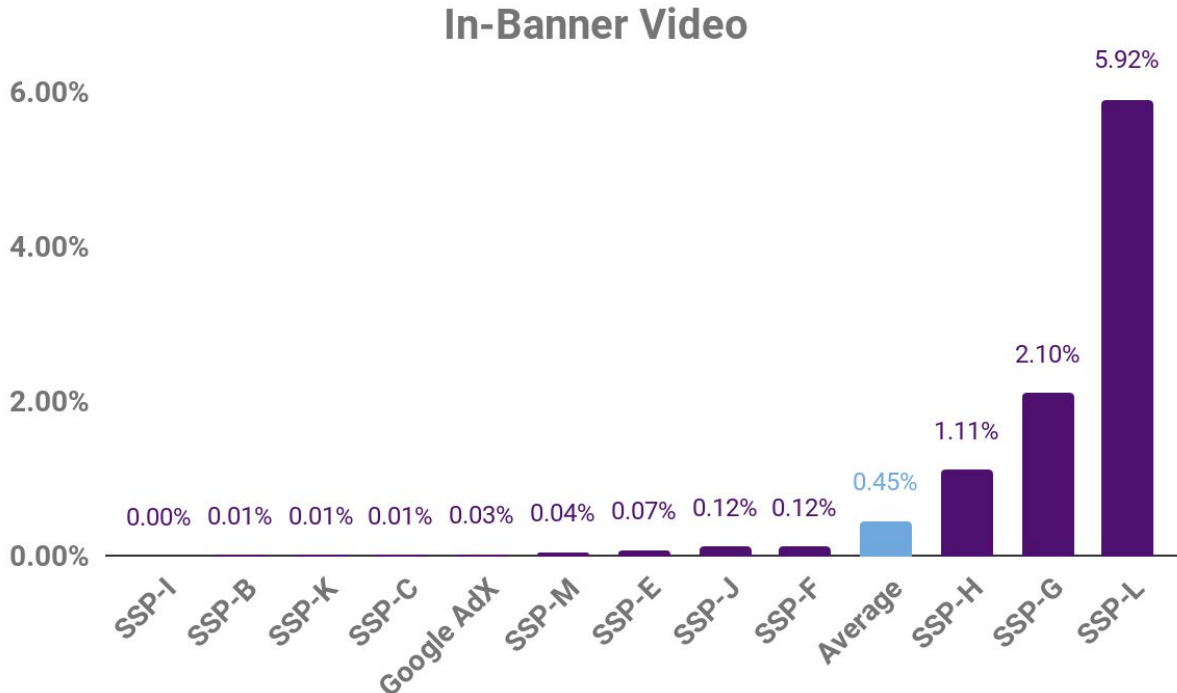


Chart 6: IBV impression rates of 12 top SSPs in Q1 '19

IBV violations were highly concentrated: **over two-thirds of violations came from just 3 providers, all of whom carried over from Q4**. Interestingly, all of them did show a significant decrease in IBV % from Q4 2018 to Q1 2019. This across-the-board decline suggests systemwide factors more so than changes in internal standards on the part of the SSPs. While we believe seasonality is a factor (demand for video drops from Q4 to Q1), we suspect a more significant factor could be ads.txt. Ads.txt allows publishers to publicly identify who is authorized to sell their inventory (and by omission, who is not). Increased adoption is driving out unauthorized resellers from the ecosystem, reducing their ability to exploit video-to-display arbitrage opportunities. It will be interesting to see whether this trend continues as ads.txt gains adoption¹.

The final category of alerts, Low Quality ads, are more subjective because it's the publisher who determines what they deem to be acceptable. The primary types of Low Quality ads detected by Confiant are creatives with auto-play audio or auto-play video.

¹ Pixalate [found](#) a more than 2x increase in the number of sites with an ads.txt file over the course of 2018.

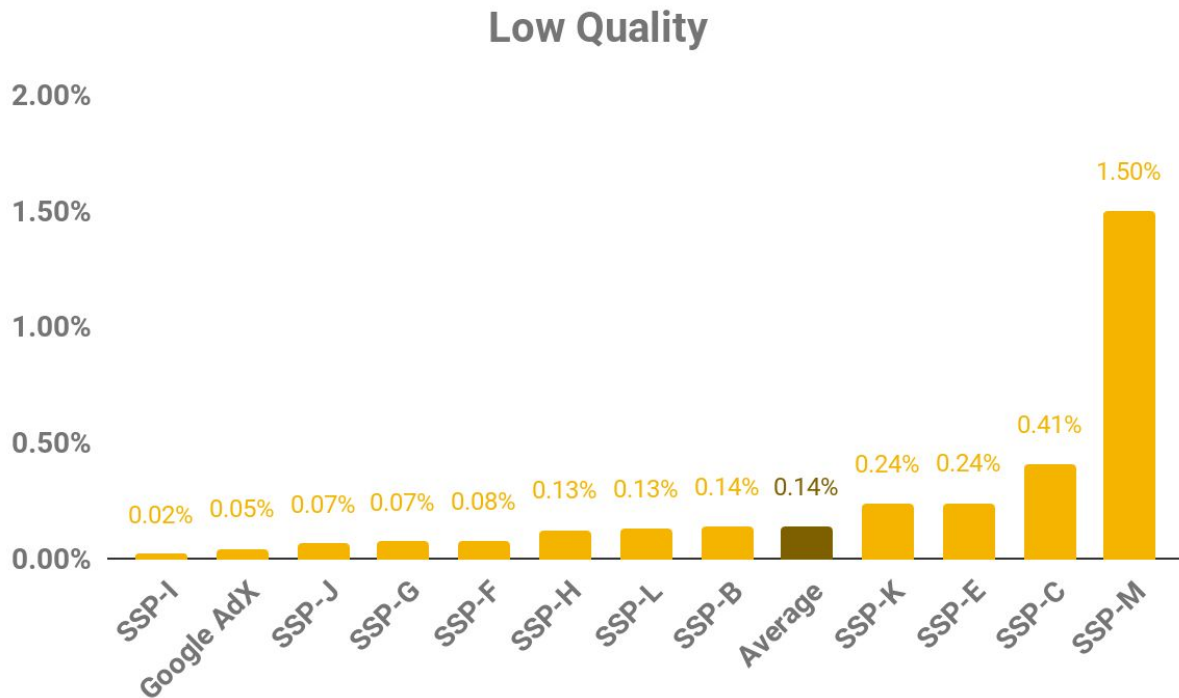


Chart 7: Low Quality impression rates of 12 top SSPs in Q1 '19

Overall, most SSPs did a solid job of adhering to publisher requirements for creative behavior and file size. Low Quality ads represented only 0.14% of the sample. However, as in past quarters, there were a few outliers. SSP-C and SSP-M held onto their second to last and last place positions, respectively, though SSP-C decreased their Low Quality ad rate by 71% this quarter. The biggest drop in ranking was registered by SSP-K, which held first place last quarter with a fantastic 0.02%, but fell to 9th place in Q1 with a rate of 0.24%.

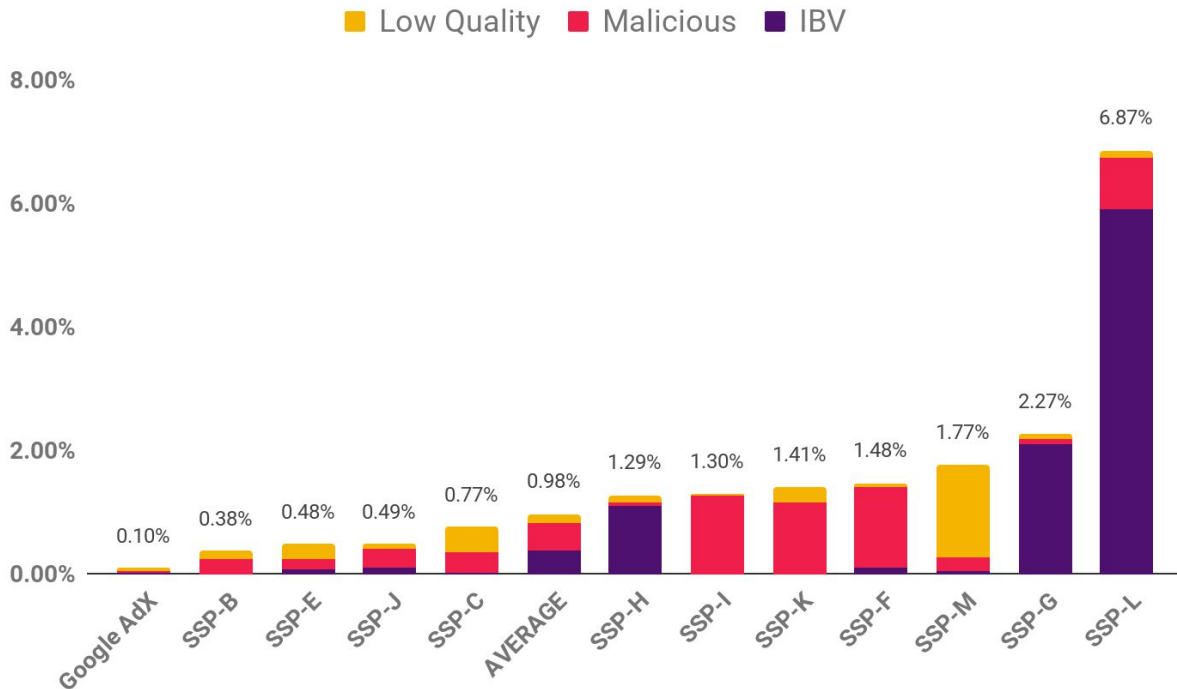


Chart 8: Q1 combined violation rates across 12 top SSPs

In the final ranking, we combine Malicious, IBV, and Low Quality to provide a holistic view into SSP performance. Google AdX returned to the top spot after falling to second in Q4. Their performance was exceptional: only 1 in 1000 impressions had issues. On the other end of the spectrum, **SSP-L had issues with almost 1 in 14 impressions, and SSP-G issues with almost 1 in 16**. Both retained their spots from Q4, with IBV again being the primary source of issues.

Confiant plans to bring further depth to this dataset before officially releasing a public ranking. Delivering actionable data requires the proper context, which is what we are delivering with these increasingly deep reports. To those readers whose busy days don't allow for the time to wade through dozens of pages of graphs, know that once the proper baseline is set, the results will be easily actionable for all publishers and platforms seeking to optimize for quality.

Activation Rate by Quality Rule

As noted above, the rules for Low Quality ads are elective in nature: publishers will choose whether or not to activate monitoring and blocking in accordance with their business needs and the expectations of their audience. In this report we are providing for the first time a view into activation rates for individual rules. The graph below summarizes the rate at which various rules were activated by our publishers for blocking across all impressions monitored by Confiant in Q1 2019:

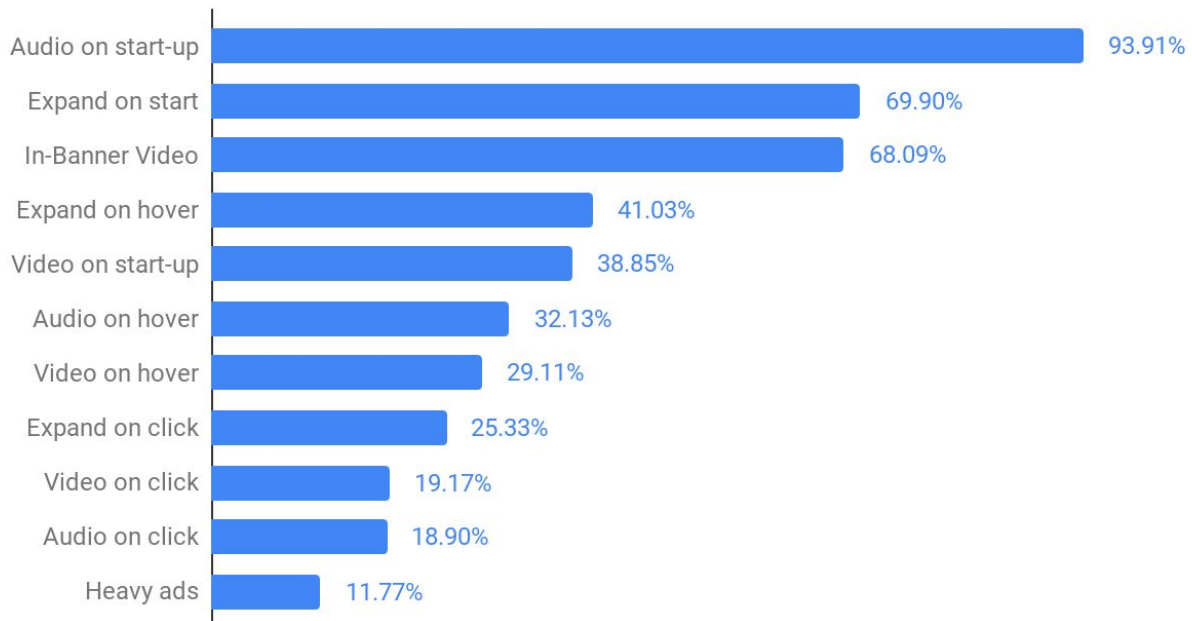


Chart 9: Blocking activation rate by Low Quality rule in Q1

Unsurprisingly, blocking activation rates for automatic creative behaviors (e.g. Audio on start-up) are far higher than those requiring user action (e.g. Audio on click). This is unsurprising: an ad that plays audio or expands without any user action is highly disruptive to the user experience. Audio on start-up is almost universally flagged by our publishers, with a 93.91% adoption rate.

Q1 US CPMs

The new year brought lower CPMs across the board in line with typical seasonal trends:

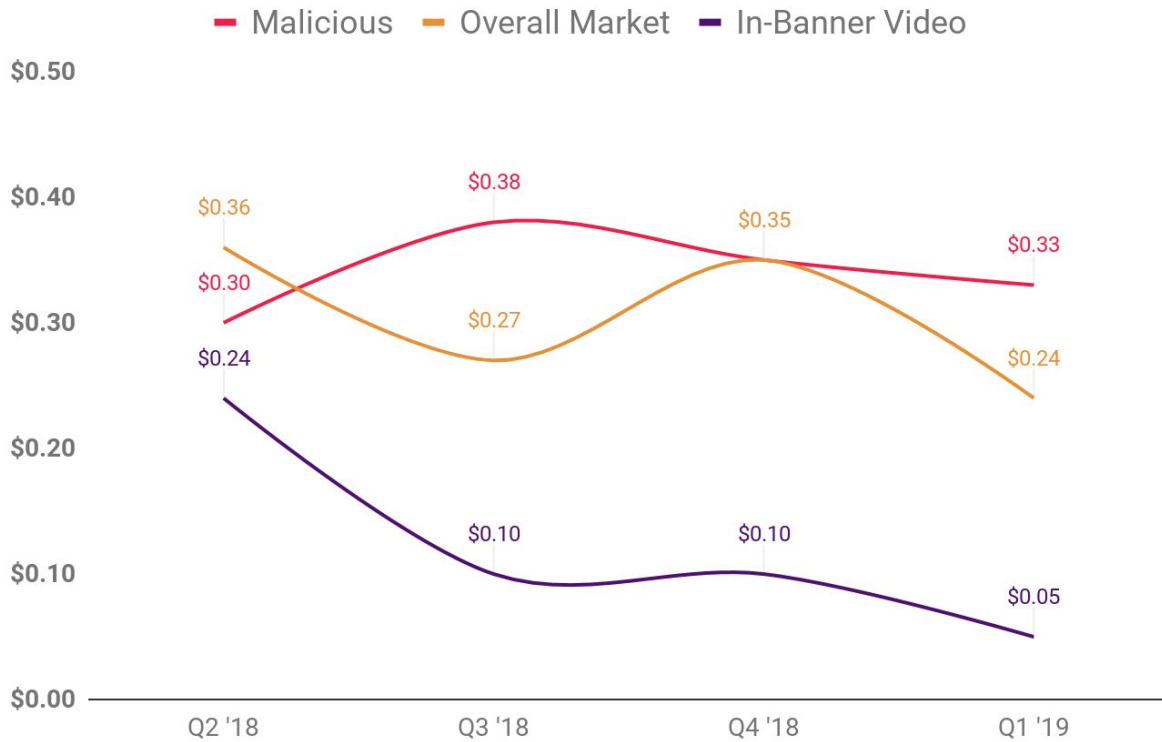


Chart 10: Quarterly comparison of Median CPMs by Ad Type

Notably, **CPMs for In-Banner Video have fallen through the floor and now stand at just 1/5th the level seen in Q2 2018**. Once again, we believe the decrease reflects both a combination of seasonal factors and industry shifts. A combination of ads.txt, supply-path optimization, and platform-specific quality initiatives may be driving In-Banner Video out of the market.

Turning our attention to the CPM distribution in Q1, we see an interesting variation by ad type:

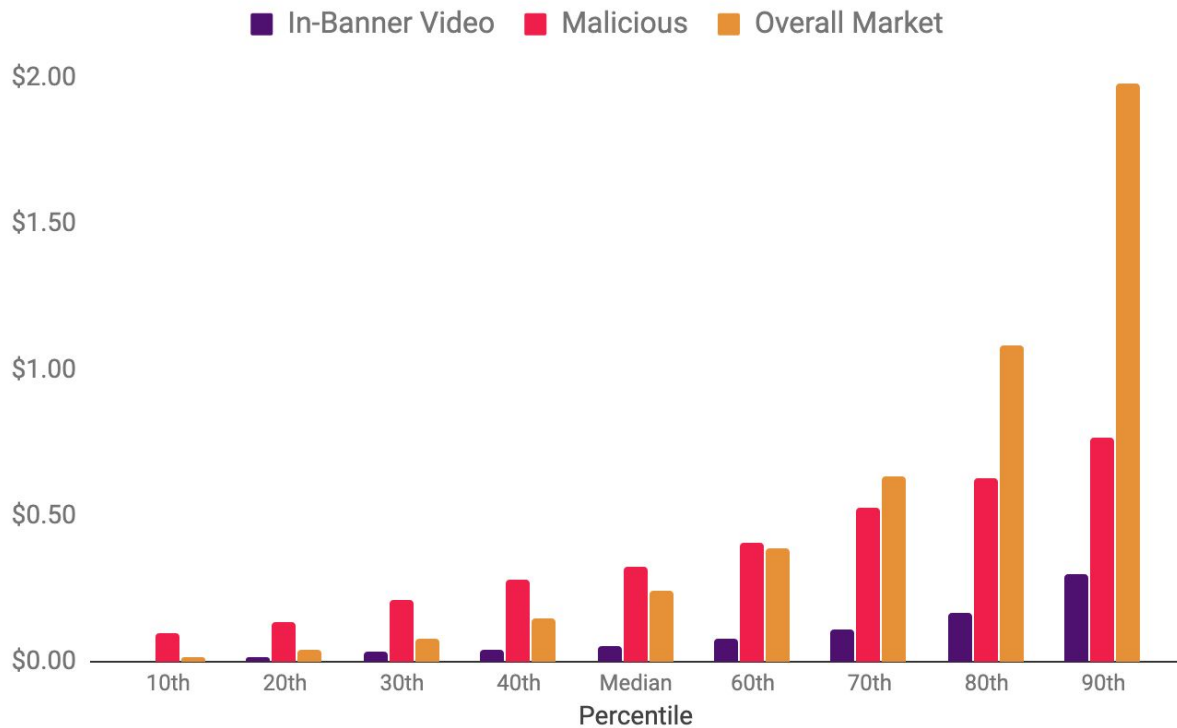


Chart 11: Distribution of CPMs by Ad Type in Q1

The data suggests that setting high floors can price out malicious ads. However, this comes at a great cost: while setting a floor at \$0.63 would block 80% of malicious ads, it would also block approximately 70% of all other ads. Clearly, a more nuanced approach is necessary to balance quality and monetization, and the ability to selectively block just malicious ads while keeping the programmatic pipes open is ideal.

Q1 Rates by Country

Our data shows significant variation in the rates of Malicious, In-Banner Video, and Low Quality ads by country:

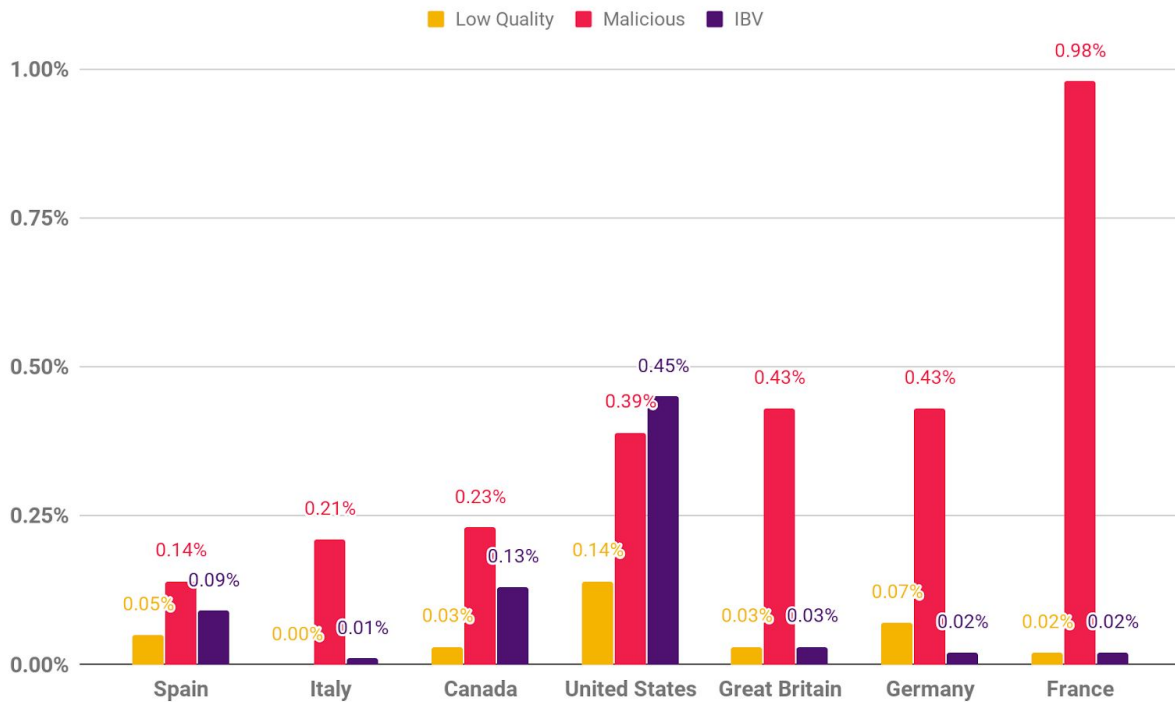


Chart 12: North American and European ad quality rates for Q1 '19

In our last report, Italy had the poorest performance for Malicious ads, with rates coming in at 0.84%. France has now claimed that place with Italy decreasing Malicious activity by 75%. The U.S. continues to be the worst country for IBV with Canada retaining second place. The variety of rates by country exemplifies how the bad actors have advanced their methods to adapt to specific local market conditions. Video has yet to pick as strongly outside the US, which yields a less attractive IBV arbitrage opportunity. Malvertisers strategically shift their attacks across markets, amplifying their ability to hide effectively.

Conclusion

Seasonal factors and industry-wide trends came to the fore in Q1 2019. We observed a substantial decrease in violation rates from Q4 2018 to Q1 2019, particularly for In-Banner Video. We suspect the decrease in IBV is driven by a broad set of industry factors, including growing ads.txt adoption and supply-path optimization, coupled with a more aggressive approach by the SSPs. The net effect is to foreclose the arbitrage opportunities that drive In-Banner Video. Despite these improvements, we found that nearly 1 in every 100 impressions was marred by Malicious ads or In-Banner Video, a statistic that

when combined with a conservative estimate of 4-5 displays ads per page and 5 pages per session, suggests that over 20% of user sessions might be at risk.

The best SSPs continue to outperform the worst by a huge margin: the worst is 67x as likely as the best to deliver a bad ad. Likewise, the data shows that many issues are highly concentrated:

- Over 60% of In-Banner Video ads came from just three SSPs.
- Almost 60% of Malicious ads came from just three SSPs.

These concentrations suggest an opportunity for publishers to exclude SSPs from their ad stack, but the reality is unfortunately a bit more complex. This is because, with the exception of SSP-L, there is no overlap between the worst performing SSPs when it comes to security and the worst performing SSPs for In-Banner Video.

Instead, publishers need to carefully consider not only which SSPs they choose to work with, but also *how* they choose to work with each SSP. The impact on a publisher's user experience and monetization varies greatly from SSP to SSP, creating a complex tradeoff that Confiant hopes to help illuminate as our solutions evolve.

Methodology

To compile the research contained in this report, Confiant analyzed a normalized sample of more than 100 billion programmatic advertising impressions from January 1 to March 31, 2019. The data was captured by Confiant's patent-pending real-time verification solution, which allows us to measure ad quality across devices and channels. This report was compiled using similar methodologies to our previous reports. Confiant enjoyed strong growth in 2018 that enabled us to monitor more than 3 times as many impressions in Q1 2019 compared to the same period last year.

Previous reports have included data on the distribution of issues across five top DSPs. Because attacks cannot be attributed to individual DSPs with the same degree of accuracy as SSPs, we have chosen to omit this data from the Q1 report. However, we believe the DSP dataset properly packaged represents significant long-term value for the industry, and it will be a focus of future reports.

About Confiant

Confiant is a cyber security company that came out of a recognition that the world's most sophisticated advertisers aren't Verizon or P&G, but criminals using the industry for their own, selfish ends. These criminals are hijacking programmatic advertising and giving publishers a bad name.

Confiant protects the reputation, revenues, and resources of publishers and platforms with always-on anti-malware software that verifies desktop, mobile, and video ads. Our sole focus is on helping advertising platforms and publishers rid the world of malware. This focus enables us to evolve quickly and meet our clients' needs for defeating the bad actors trying to undermine the industry.

We were the first to come to market with a technology that does not just detect malicious activity, but actively blocks it. We believe in the intelligent application of technology to fight back and make digital media safe for everyone.