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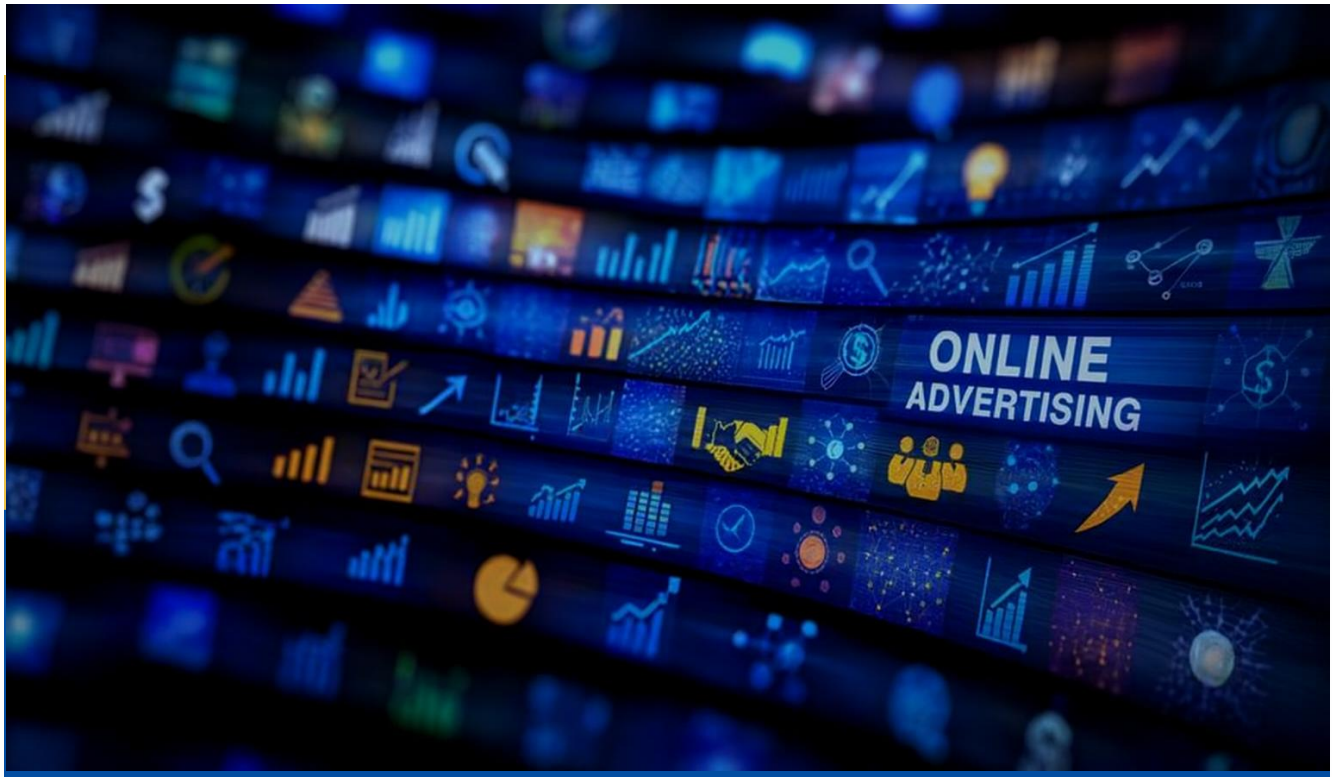
Online Advertising on IPR-Infringing Websites and Apps 2024



November 2025

ONLINE ADVERTISING ON IPR-INFRINGING WEBSITES AND APPS 2024

ISBN 978-92-9156-370-8 DOI 10.2814/2526147 TB-01-25-002-EN-N

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Executive Summary

Internet websites and mobile applications that provide access to content, goods or services infringing intellectual property rights (IPR) on a commercial-scale use the sale of advertising space as one of their revenue sources. In addition to providing a revenue stream to IPR infringers, the presence of advertising for legitimate brands on websites and mobile applications that infringe IPR can confuse consumers. It can lead them to mistakenly believe that the website or application they are accessing provides access to legal content, goods or services.

To strengthen the protection of IPR and reduce the harm caused by its infringement, the European Commission sponsored a Memorandum of Understanding on online advertising and IPR (MoU) ([1]). The MoU's signatories represent parties involved in placing, buying, selling and/or facilitating advertising, including advertisers, advertising agencies, trading desks, advertising platforms, advertising networks, advertising exchanges for publishers, sales houses, publishers and IPR owners. They also include representatives or associations of these groups.

The EU Intellectual Property Office (EUIPO) commissioned White Bullet to carry out the 2024 Ad Monitoring Exercise to assess the impact of the MoU on the online advertising found on IPR-infringing websites and apps during 2024, to evaluate the estimated amount and type of online advertising on IPR-infringing websites and apps, and to estimate the associated ad revenues. This commission is an extension of the work undertaken by White Bullet in 2021 for the EUIPO ([2]), and that undertaken by White Bullet in 2020 ([3]) and the first half of 2019 ([4]) on behalf of the European Commission.

The 2024 Ad Monitoring Exercise collected data on the ad profiles of the 2024 Monitored Websites (7 250 websites) from 18 EU Member States, and the United Kingdom (UK) and United States (US)

([1]) European Commission, https://ec.europa.eu/growth/industry/policy/intellectual-property/enforcement/memorandum-of-understanding-online-advertising-ipr_en.

([2]) European Intellectual Property Office, Online advertising on IPR-Infringing Websites and Apps, 2021.

([3]) European Commission, *Study on the impact of the memorandum of understanding on online advertising and intellectual property rights on the online advertising market – 2020 Ad Monitoring Exercise*, 2021.

([4]) European Commission, *Study on the impact of the memorandum of understanding on online advertising and intellectual property rights on the online advertising market*, 2020.

as control countries, between 1 January 2024 and 30 November 2024, divided into four equal quarters.

The periods covered by the four quarters of data monitoring were as follows:

Q1: 1 January 2024 to 22 March 2024
Q2: 23 March 2024 to 11 June 2024
Q3: 12 June 2024 to 31 August 2024
Q4: 1 September 2024 to 30 November 2024

The same countries were monitored in 2024 as in 2021, 2020 and 2019, shown in Table 1 below:

LIST OF COUNTRIES			
1	Belgium	11	Malta
2	Czech Republic	12	Netherlands
3	Denmark	13	Poland
4	Estonia	14	Portugal
5	France	15	Romania
6	Germany	16	Slovakia
7	Hungary	17	Spain
8	Ireland	18	Sweden
9	Italy	19	UK (control country)
10	Lithuania	20	US (control country)

Table 1: List of countries

In addition to collecting data on ad profiles for websites, the 2024 Ad Monitoring Exercise also collected data on ad profiles of the 2024 Monitored Apps (398 apps) from the same countries identified in Table 1 and for the same periods.

Key findings

Monitored Website/App analysis

Of the 7 250 2024 Monitored Websites, 44 % were classified as Illegal Websites and 56 % as High-Risk Websites. **Illegal Websites** are those that have been found to be illegal by national judicial, administrative or other enforcement authorities in the EU. **High-Risk Websites** have not (yet) been

adjudicated in this way, but they are still verified as infringing and popular amongst EU consumers, including by White Bullet's IPIP™ tool, or by rights holders.

Of the 398 2024 Monitored Apps, 60 % were classified as Illegal Apps – those identified by the Trustworthy Accountability Group as having been confirmed by rights holders as IP-infringing and removed from official app stores – and 40 % as High-Risk Apps.

Ad Impression analysis

- The 2024 Monitored Websites generated 14.4 billion Ad Impressions ([5]) for the 18 monitored countries, 59 % from Illegal Websites and 42 % from High-Risk Websites.
- Estimated Ad Impressions generated by websites increased 92 % from Q1 (2.5 billion) to Q4 (4.8 billion).
- The 2024 Monitored Apps generated 4 billion Ad Impressions worldwide: 54 % from Illegal Websites and 46 % from High-Risk Apps.

Brand analysis

For the purpose of this report, **Branded Advertising** is broken down into two sub-groups:

Major Brands: brands that are on selected top advertiser lists, are otherwise reputable established brands with a strong search engine presence in EU countries, or are major licensed gambling companies;

Other Brands: brands that are not major but are also not fraudulent, adult, or malicious.

- Branded Advertising represented 61 % of estimated Ad Impressions across all 2024 Monitored Websites, compared to 96 % across all 2024 Monitored Apps.
- Branded Advertising was higher on High-Risk Websites (64 %) compared to Illegal Websites (58 %), but slightly lower on Illegal Apps (95 %) compared to High-Risk Apps (96 %).

([5]) An Ad Impression is a metric of online advertising that quantifies how often an ad is loaded from its source and can be counted. It is also known as an Ad View, based on its being viewable by a visitor.

- Major Brand advertising was 186 % higher on Monitored Websites (20 %) than on Monitored Apps (7 %) in 2024.
- The Top-level Sectors for all Branded Advertising for the Monitored Websites were Media (23 %), Gambling (15 %), Shopping (11 %), Retail (8 %), and Arts & Entertainment (6 %).
- The Top-level Sectors for all Branded Advertising for the Monitored Apps were Arts & Entertainment (45 %), followed by Technology & Computing (39 %), Personal Finance (4 %), Business (3 %), and Gambling (1 %).
- The Monitored Websites had advertising from 107 144 unique advertisers, of which 4 % (4 259) were Major Brands ([6]).
- On the Monitored Apps, a total of 2 357 unique brands were identified, of which 9 % (212) were Major Brands.

Estimated ad revenue analysis ([7])

In 2024:

- the total estimated worldwide revenue generated by the 7 250 Monitored Websites was EUR 242.0 million;
- the total estimated revenue generated by the Monitored Websites in the 18 monitored EU countries alone was EUR 139.1 million;

([6]) The brands were classified as Major Brands if the brand, or parent company of the brand, was present on one of the following lists, was otherwise a reputable established brand with a strong search engine presence in EU countries, or was a major licensed gambling company:

- AdAge Global Marketers Index;
- Millward Brown Global and National brand ranking lists;
- Ranking the Brands Top 100 List;
- World Federation of Advertisers (WFA) membership;
- Association of National Advertisers (ANA) membership;
- Forbes Global 2000.

([7]) The figures shown are estimated annual figures, based on extrapolation of the monitoring period. Further details are provided in Section 2.8.

- the total estimated worldwide revenue generated by the 398 Monitored Apps was EUR 20.1 million.

Evolution from 2021 to 2024

- Total Branded Advertising on Monitored Websites increased by 106 % (30 % to 61 %).
- Total Branded Advertising on Monitored Apps was significantly higher than on websites, increasing over the period by just 17 % (82 % to 96 %).
- Major Brand advertising on Monitored Websites increased by 567 % (3 % to 20 %) but decreased for Monitored Apps (16 % to 7 %).
- Infringing Watch Lists (IWLs) ([8]) appear to have become less effective amongst premium advertisers due to an increase in global Major Brand advertising on IP-infringing websites.
- Fraud & Malware advertising increased 250 % on Monitored Websites (4 % to 14 %).
- The average eCPM was 79 % higher in 2021 on Monitored Apps (EUR 6.65) than on Monitored Websites (EUR 1.39), and 39 % higher in 2024 on Monitored Apps (EUR 5.01) than on Monitored Websites (EUR 3.05).
- The average estimated ad revenue per publisher was higher for Monitored Websites in 2021 (EUR 158 157) than for Monitored Apps (EUR 106 146), but in 2024 was higher on Monitored Apps (EUR 56 543) than for Monitored Websites (33 377).

These figures indicate an increasingly serious issue, namely that websites and apps that infringe IPR do not only derive revenue from their infringing activities, but also increasingly from advertising by legitimate brands that is placed on such websites, partly as a result of the very complex internet advertising ecosystem. The massive growth in Major Brand advertising on IPR-infringing websites may be correlated with the 2023 termination of several coordinated outreach programmes focused on educating brands that had been placing advertising on IPR-infringing websites. The IWLs that previously had an impact within countries appear to be less effective against digital advertising due to significant advertising campaigns indiscriminately run on IPR-infringing websites by some global Major Brands.

([8]) Infringing Watch Lists (IWLs) are lists of IP-infringing websites that aim to share intelligence on such websites with advertising industry stakeholders, amongst others, often as part of a strategy to demonetise those websites.

Report Content

1 Background

Revenue generated from intellectual property (IP) represents a significant part of the European Union (EU) economy. Recent studies suggest IP-intensive industries account for approximately 45 % of EU GDP and 29.2 % of employment, and generated a trade surplus of EUR 182 billion with the rest of the world during 2014-2016 ([9]). Due to this high value, IP infringement in the EU has a significant impact on the economy of EU countries through lost jobs and tax revenue, impacting innovation and business. The EU Intellectual Property Office (EUIPO) estimates the value of sales lost to IP infringement in 11 sectors in the EU to be higher than EUR 83 billion per year during 2013-2017 ([10]). IP infringement also poses serious health, safety and security threats to consumers. Additionally, in the context of online advertising on IP-infringing websites and apps, examples have been found where consumers are targeted with fraudulent advertising, phishing attempts and the dissemination of malware ([11]).

As commercial-scale IP infringement does the most harm to the EU economy, the European Commission has implemented the 'follow the money' approach to IP rights enforcement, which focuses on depriving commercial-scale infringers of their revenue ([12]). For the operators of IP-infringing websites and apps, online advertising is a significant source of revenue ([13]). To advance the 'follow the money' approach, the European Commission facilitated an MoU signed on 25 June 2018 ([14]). The MoU is a voluntary agreement between companies and associations from the

([9]) European Patent Office (EPO) and EUIPO, *IPR-intensive industries and economic performance in the European Union - Industry-Level Analysis Report*, 2019.

([10]) EUIPO, *2020 Status Report on IPR Infringement*, 2020.

([11]) OHIM, *Digital Advertising on Suspected Infringing Websites*, 2016; EUIPO, *Identification and analysis of malware on selected suspected copyright-infringing websites*, 2018; Digital Citizens Alliance, White Bullet and Unit 221B, *Unholy Triangle: From Piracy to Ads to Ransomware*, 2022.

([12]) European Commission, https://ec.europa.eu/growth/industry/policy/intellectual-property/enforcement_en.

([13]) TAG, *Measuring Digital Advertising Revenue to Infringing Sites*, 2017.

([14]) See footnote 1.

advertising industry, including advertisers, advertising intermediaries and interested stakeholders such as IP rights holders. It seeks to minimise the placement of advertising on websites and mobile apps that infringe copyright or disseminate counterfeit goods by engaging cross-party stakeholders to collaborate and share good practices.

White Bullet Solutions Limited (White Bullet) was commissioned by the European Commission to conduct assessments in 2019 and 2020 of the evolution of online advertising on IP-infringing websites (the 2019 Ad Monitoring Exercise), pursuant to paragraphs 15 and 18 of the MoU ([15]). The 2019 Ad Monitoring Exercise sought to understand the evolving landscape of ad-funded digital IP infringement and identify any discernible trends over time across the EU ([16]). In December 2019, White Bullet was commissioned by the European Commission to conduct a follow-up study for 2020 (the 2020 Ad Monitoring Exercise). The key objectives of the year-long 2020 initiative were: evaluating the estimated amount and type of online advertising on IP-infringing websites; estimating the ad revenues collected by IP-infringing website owners; and analysing the impact and effectiveness of the MoU on the online advertising market ([17]).

After coordination with the Commission, the EUIPO commissioned White Bullet to conduct follow-up studies in 2021 and in Q3 2023 ([18]). For 2024, the EUIPO also commissioned White Bullet to conduct a follow-up study (the 2024 Ad Monitoring Exercise). The key objectives of the 2024 initiative were: evaluating the estimated amount and type of online advertising on both IP-infringing websites and apps; estimating the ad revenues collected by IP-infringing website and app owners; and analysing the impact and effectiveness of the MoU on the online advertising market.

This report details the findings of the 2024 Ad Monitoring Exercise, which focuses on IP-infringing websites – including those that have no substantial legitimate uses and that have been found by judicial, administrative or other enforcement authorities to infringe copyright or to disseminate counterfeit goods on a commercial scale – as well as IP-infringing apps. No brands or Ad Intermediaries identified in the 2024 Ad Monitoring Exercise are named in this report.

A glossary of terms used in this report can be found in Annex A.

([15]) White Bullet is a signatory to the MoU.

([16]) See footnote 4.

([17]) See footnote 3.

([18]) See footnote 2. The results for Q4 2023 were provided to the EUIPO but not published.

2 Scope and methodology

2.1 Overview

The 2024 Ad Monitoring Exercise monitored the ad profiles of 7 250 websites from 18 EU countries, and the US and UK as control countries, from 1 January 2024 through 30 November 2024, divided into four equal quarters.

The periods covered by the four quarters of data monitoring were as follows:

Q1: 1 January 2024 to 22 March 2024
Q2: 23 March 2024 to 11 June 2024
Q3: 12 June 2024 to 31 August 2024
Q4: 1 September 2024 to 30 November 2024

White Bullet used its Ad Monitoring System to meet the three objectives of the 2024 Ad Monitoring Exercise:

- evaluating the estimated amount and type of online advertising on IP-infringing websites and apps,
- estimating the ad revenues collected by IP-infringing website and app owners, and
- analysing the impact and effectiveness of the MoU on the online advertising market.

The 2024 Ad Monitoring Exercise collected ad data in both the Desktop Web Advertising Ecosystem and the Mobile Web Advertising Ecosystem. Ad data was also captured on 398 IP-infringing mobile apps.

In addition, while no full report was commissioned in 2023, analysis is provided of changes in advertising profiles across all the monitored territories between the Q3 2023 Ad Monitoring Exercise and Q4 of the 2024 Ad Monitoring Exercise.

Advertising campaigns will vary in content, style, format and duration across time and may be influenced by the timing of specific brand campaigns and seasonal events. However, this report focuses on broader data comparisons, such as ad volume, ad type and ad sectors, rather than specific campaigns.

2.2 Country selection

The same set of EU countries were selected for monitoring in Q3 of the 2024 Ad Monitoring Exercise as were used in the previous studies in 2019, 2020, 2021, and Q4 2023, with the US and UK used as controls, as shown in Table 2.

These countries were chosen to provide continuity with the previous MoU Ad Monitoring Exercises and were originally selected to be representative of the EU as a whole. Factors for selection included ensuring a mix of geographic locations across the EU, as well as population size, language dispersion and duration of EU membership.

The 2024 Monitored Websites were visited from each country shown in Table 2 on an equal basis, using local IP addresses to harvest locally served ads.

LIST OF COUNTRIES			
1	Belgium	11	Malta
2	Czech Republic	12	Netherlands
3	Denmark	13	Poland
4	Estonia	14	Portugal
5	France	15	Romania
6	Germany	16	Slovakia
7	Hungary	17	Spain
8	Ireland	18	Sweden
9	Italy	19	UK (control country)
10	Lithuania	20	US (control country)

Table 2: List of countries for the 2024 Ad Monitoring Exercise

2.3 About White Bullet's Ad Monitoring System

White Bullet has developed a proprietary advertising monitoring system that captures high-volume data about advertising placed on IP-infringing websites and apps (defined as those infringing copyright or disseminating counterfeit goods) through which parties may monitor ad profile changes ('the Ad Monitoring System').

The Ad Monitoring System:

- visits IP-infringing websites and apps from local internet protocol addresses ('IP Addresses') to track locally served ads,
- captures images of ads in the context of the infringing webpage or from within the mobile application,
- uses White Bullet's proprietary technology to identify brands and advertising sectors (e.g. malware, adult, financial, fashion, travel, or technology), and
- identifies intermediaries engaged in the placement of advertising ('Ad Intermediaries'), by analysing data on all intermediaries involved in the targeting, placement and delivery of ads.

For Q3, White Bullet applied the latest innovations in its Ad Monitoring technology to the website data collection. This new technology 'clicks through' advertising to reach the landing page to which a consumer would be taken if they had clicked on the ad. This offers enhanced data because it captures and classifies more ads and in more detail, including:

- enhanced classification of advertisers, which going forward will be based directly on the domain name of the landing page, rather than using a cropped image of an ad which is then matched against known images of the same ad with the same brand features;
- the ability to capture new types of advertising and those that only display data when clicked;
- enhanced sector classification based on landing pages, now aligned with the IAB Ad Product Taxonomy ([19]) rather than the IAB Content Taxonomy;
- more data about the ad intermediaries (adtech) placing the ads, which are increasingly found on both the publisher page and in the 'referral path' from the click-through;
- more data about the affiliates involved in ad placement and traffic redirection drawn from the referral path from the click-through;
- more accurate identification of affiliate versus standard display or programmatic advertising.

As of Q3, the term 'advertiser' is used in place of 'brand' for the website data to distinguish the method of data capture and classification. While brand data is included for Q1 and Q2 in this report,

([19]) IAB Tech Lab first introduced its Ad Product Taxonomy in July 2022 to establish a standardised nomenclature for describing the product or service being advertised. Like other taxonomies, the Ad Product Taxonomy continues to evolve as it has been adopted by digital marketers (https://iabtechlab.com/standards/ad-product-taxonomy/).

the data should not be directly compared with the advertiser data collected in Q3 and Q4 due to the differences in technology between the old and new harvesters used for website data collection. For example, the volume of advertisers is much higher than the volume of brands, due in part to the capture of localised domains for advertisers (e.g. ADVERTISER.de versus ADVERTISER.fr). Note, however, that the new harvester technology applies only to website data capture; the term 'brand' continues to apply to app data capture throughout this report.

2.4 About the 2024 Ad Monitoring Exercise

The purpose of the 2024 Ad Monitoring Exercise is to track the advertising found on IP-infringing websites and apps across the EU, and the parties involved in the placement of that advertising, from 1 January 2024 to 20 November 2024 and to analyse changes in the ad profiles of those websites and apps over time. Furthermore, the 2024 Ad Monitoring Exercise would provide certain measures to evaluate the diversity of online advertising within the EU, with reference to data on online advertising collected from the US and UK (not included in the scope of the MoU itself) for comparison.

All the websites identified by White Bullet for monitoring offered access to IP-infringing content and were either (a) highly popular among EU consumers or (b) of significant interest to national judicial, administrative or other enforcement authorities in the EU (the 2024 Monitored Websites). The mobile apps identified for monitoring offered access to IP-infringing content and were either (a) highly popular among global consumers or (b) identified on a list, provided to advertisers by the Trustworthy Accountability Group, of IP-infringing apps removed from app stores by rights holders (the 2024 Monitored Apps).

The 2024 Monitored Websites were monitored daily using a dynamic and rotating cycle of URLs from multiple IP addresses in each of the EU countries selected for monitoring during the 2024 Ad Monitoring Exercise. In addition, the 2024 Monitored Websites were visited from US and UK IP addresses to harvest ad data from the US and UK as control countries ([20]). Visits were made using multiple user profiles and a neutral (i.e. cookieless) profile on an equal schedule. Similarly, the 2024 Monitored Apps were monitored daily from the same EU and control countries, with multiple user profiles.

([20]) IP addresses from various US states were used to maximise diversity and coverage.

The ad data harvested by White Bullet's Ad Monitoring System provided the following datapoints for further analysis:

- overall volume of ads identified across the reporting period from the daily visits;
- brands whose goods/services were promoted, including a differentiation between Major Brands and Other Brands;
- Top-level Sectors and Sub-sectors identified, into which brands/advertisers were categorised;
- top Ad Intermediaries responsible for engaging the advertising on the websites and apps;
- proportion of different Ad Types found;
- proportion of EU versus non-EU brands identified (where such a categorisation was possible);
- proportion of EU versus non-EU Ad Intermediaries identified (where such a categorisation was possible);
- trends in the various EU countries monitored, including a comparison of monitored countries operating Infringing Website Lists (IWLs) compared to the EU as a whole; and
- the best-performing countries according to the MoU based on lowest ad volume and fewest reputable ad campaigns, including a breakdown by country by sector.

While the data collected by White Bullet identifies named brands and Ad Intermediaries, this report does not name any companies or entities. Instead, the focus is on overall trends identified in 2024, with multi-year trends in the final section.

2.5 Publisher selection

2.5.1 Website selection

White Bullet continued to monitor many of the websites from the 2023 Ad Monitoring Exercise after the end of that project, and these websites were included in the 2024 Monitored Websites for the 2024 Monitoring Exercise if they continued to meet the original criteria set out in the 2024 Monitoring Exercise, namely the following.

- Has the website been found by judicial and administrative authorities within the EU to infringe copyright or disseminate counterfeit goods on a commercial scale?

- Does the website infringe IP and have no other substantial legitimate uses ([21])?
- Is the website popular among EU consumers?
- Is the website accessible to a web browser (i.e. can it be reached online)?
- Did the website have advertising present when first visited by White Bullet's Ad Monitoring System?

In addition, White Bullet assessed new websites and apps for inclusion in the 2024 Monitored Websites for the 2024 Monitoring Exercise. White Bullet identified websites and apps for assessment by using a range of publicly available sources and its own Intellectual Property Infringement Platform (IPIP™), which identifies and risk-scores IP-infringing websites and apps.

2.5.2 Website identification

As with the Q4 2023 Monitored Websites, the 2024 Monitored Websites were distinguished as being either Illegal Websites or High-Risk Websites:

- **Illegal Websites** included those on IWLs, those identified through publicly available information as having court-ordered adjudications against them within the EU, and those listed on the Counterfeit and Piracy Watch List published by the European Commission in December 2022;
- **High-Risk Websites** included those not found to be illegal by national judicial, administrative or other enforcement authorities in the EU, but still verified to be infringing and popular amongst EU consumers, including by White Bullet's IPIP™ or by rights holders.

([21]) White Bullet investigators researched IP-infringing content on websites to determine dominance of such content over legitimate uses.

The same criteria were used to identify Illegal Websites (a-c) and High-Risk Websites (d-f) as in the 2021 Ad Monitoring Exercise:

a. IWLs operated by the City of London Police Intellectual Property Crime Unit (PIPCU), the Danish Rights Alliance (Rettigheds Alliancen), or the WIPO ALERT platform ([22]).
b. Publicly available information to identify websites with court-ordered adjudications against them within the EU.
c. The Counterfeit and Piracy Watch List published by the European Commission in December 2022 ([23]).
d. Publicly available Similarweb data relating to website traffic including data on both global ranks and country traffic share ([24]) ([25]). White Bullet reviewed Similarweb country traffic data to identify websites that were significant for each of the monitored EU and control countries, as well as to determine globally popular IP-infringing websites. Each of these websites was then visited to check for actual infringements.
e. The publicly available Google Transparency Report (GTR) ([26]). White Bullet exported a list of websites from the GTR that had 50 or more removals in the 3 months prior to the Q1 2024 Monitoring Exercise and verified each website for actual infringements.
f. White Bullet's IPIP™. White Bullet included IP-infringing websites with a risk score indicating a high risk of IP infringement from its dynamic real-time IPIP™, which identifies infringements and scores websites based on over 400 data points related to potential infringement risk and verified infringements.

([22]) After the Danish Rights Alliance became a member of the MoU at the May 2024 MoU stakeholder meeting, White Bullet requested a copy of the Danish Rights Alliance's IWL for use in the 2024 Ad Monitoring Project. Further analyses on the impact of the Danish Rights Alliance IWL as well as the WIPO ALERT IWL websites being tracked in Italy, Lithuania and Spain are included in this report (https://www.wipo.int/wipo-alert/en/).

([23]) European Commission, Counterfeit and Piracy Watch List, 2022.

([24]) White Bullet used its subscription to the Similarweb service to facilitate API feeds of traffic data (https://www.similarweb.com/).

([25]) Prior to 2023, White Bullet used the Alexa Internet global and country rankings from Amazon for this assessment. However, Amazon retired the Alexa Internet website in May 2022, and the final API data feed for Alexa Internet ranking was in December 2022. While Similarweb and Alexa country rankings were rarely identical for the same website, they were comparable measures.

([26]) The Google Transparency Report (GTR) provides information on websites delisted from Google's search results for copyright infringement.

2.5.3 Determining the popularity of websites

As Illegal Websites are deemed to be of significant interest to national judicial, administrative or other enforcement authorities in the EU, these websites were included in the Q1 2024 Monitored Websites by default and were not subjected to any tests to determine their popularity among EU consumers.

High-Risk Websites were assessed for popularity among EU consumers and were only included for monitoring if they met at least one of the below criteria:

- the website had a Similarweb traffic share of at least 25 % of global traffic for at least one of the EU countries selected for monitoring, or auto-redirected to a website that had a Similarweb traffic share of at least 25 % of global traffic for at least one of the EU countries selected for monitoring ([27]) ([28]), and/or
- the website had at least one of the EU countries selected for monitoring in Similarweb's top 10 list of countries for global traffic share for that website, or auto-redirected to a website that had at least one of the EU countries selected for monitoring in Similarweb's top 10 list of countries for global traffic share for that website, and/or
- the website had a Similarweb global rank below 500 000 or auto-redirected to a website that had a Similarweb rank below 500 000 ([29]).

For clarity, while the cut-off threshold for monitoring for both Similarweb global was 500 000, most websites included in the 2024 Monitoring Exercise had a considerably lower rank. On this popularity assessment of High-Risk Websites, the median Similarweb global rank in 2024 was 210 588 and the median Similarweb country traffic share for the monitored EU countries appearing within the top 10 country list was 8% ([30]).

([27]) Similarweb country traffic share indicates the popularity of websites globally in the country specified.

([28]) Auto-redirecting is a blocklist evasion technique.

([29]) The Similarweb global ranking indicates the global popularity of websites.

([30]) We are unable to compare Similarweb country traffic share to the Alexa country ranking, which was used in 2021.

2.5.4 App selection

The 2024 Monitored Apps were selected to complement the 2024 Monitored Websites and to enhance the ability to analyse ongoing trends in 2024. While some of the criteria used for identifying IP-infringing websites were the same as for IP-infringing apps, some were not readily applicable to IP-infringing apps, and so were adapted in the selection process:

- Has the app been found by a recognised third party to infringe copyright or disseminate counterfeit goods on a commercial scale?
- Does the app infringe IP and have no other substantial legitimate use?
- Is the app popular among consumers?
- Is the app accessible (i.e. can it be reached online)?
- Did the app have advertising present when first visited by White Bullet's Ad Monitoring System?

As with the 2024 Monitored Websites, the 2024 Monitored Apps were distinguished as being either Illegal apps or High-Risk apps:

- **Illegal Apps** included those identified by the Trustworthy Accountability Group as having been removed by rights holders from official app stores for verified IP infringement (the Pirate Mobile App List or PMAL) ([31]);
- **High-Risk Apps** included those not included on the PMAL but still verified to be infringing and globally popular, including by White Bullet's IPIP™ or by rights holders.

2.5.5 Accessibility and advertising checks

Both Illegal and High-Risk Websites were assessed for accessibility (i.e. whether the website was online and accessible through a web browser for visits and rendering content) and the presence of digital advertising using White Bullet's Ad Monitoring System. Any website that was either inaccessible or had no advertising present was excluded from consideration.

([31]) More information on the Pirate Mobile App List is available on the website of the Trustworthy Accountability Group: https://www.tagtoday.net/brand-safety#pmal.

Websites that passed all the selection criteria were added to the list of 2024 Monitored Websites. Ads captured on a website that auto-redirected from a 2024 Monitored Website were attributed to the originating monitored website. However, this attribution did not apply to ads collected on mirror websites or outwardly independent websites that could have resulted from a domain hop that was not auto-redirected from a monitored website, as it was not possible to confirm these relationships between websites.

Both Illegal and High-Risk Apps were also reviewed for accessibility and advertising checks. Any app that was either inaccessible or had no advertising present was excluded from consideration. Apps that passed all selection criteria were added to the list of 2024 Monitored Apps.

2.6 User profiles

For the 2024 Ad Monitoring Exercise, White Bullet's Ad Monitoring System continued the use of expanded user profiles when visiting the 2024 Monitored Websites, as well as when visiting for the 2024 Monitored Apps, to better replicate the ads delivered to a typical website or app visitor and trigger potential behaviourally targeted advertising. The type of user profile used was specific to each ecosystem, as described below. The website and app user profiles were refreshed with each new quarter.

2.6.1 Website user profiles

Each URL was visited daily from all countries tracked using one of the nine user profiles below. Each profile was rotated on a scheduled cycle to ensure all 2024 Monitored Websites were visited equally. The user profiles were also refreshed with each new quarter.

- **Cookieless (neutral) profile**: for collection of non-targeted ads; this gave the 2024 Ad Monitoring Exercise a neutral benchmark but was also an important standalone category, as many consumers of digital IP-infringing content use anonymisation technology – such as VPNs and proxies – to protect their privacy and, as such, do not visit IP-infringing websites with any attributable cookie profiles.

- **Female user profiles**: four profiles, each of which included multiple interest-based user profiles within this category.
- **Male user profiles**: four profiles, each of which included multiple interest-based user profiles within this category.

Over 100 specific interest sectors were used to develop profiles (including travel, weather, fashion, personal finance, etc.). Cookies also related to previous visits to IP-infringing content.

2.6.2 App user profiles

Each app was visited daily from all tracked countries using one of the five user profiles below. Each profile was rotated on a scheduled cycle to ensure that all 2024 Monitored Apps were visited equally. The user profiles were refreshed with each new quarter.

- **Cookieless (neutral) profile**: for collection of non-targeted ads; this gave the 2024 Ad Monitoring Exercise a neutral benchmark but was also an important standalone category, as many consumers of digital IP-infringing content use anonymisation and privacy technology on mobile phones – such as privacy settings, turning off tracking, etc. – to protect their privacy.
- **Female user profiles**: two profiles, each compiled by White Bullet staff using diverse apps in a variety of Google Play categories on a mobile phone to create a profile on the device's Advertiser ID that was transferred into the Ad Monitoring System.
- **Male user profiles**: two profiles, each compiled by White Bullet staff using diverse apps in a variety of Google Play categories on a mobile phone to create a profile on the device's Advertiser ID that was transferred into the Ad Monitoring System.

2.7 Brand and Ad intermediary categorisation

White Bullet classified any brands found advertising in the 2024 Ad Monitoring Exercise as Major Brands if the brand, or parent company of the brand, was present on one of the following lists:

- AdAge Global Marketers Index,
- Millward Brown Global and National brand ranking lists,

- Ranking the Brands Top 100 List,
- WFA membership,
- ANA membership, or
- Forbes Global 2000.

White Bullet evaluated any brands that did not appear on the above lists to assess whether they should be included as a Major Brand. White Bullet included reputable brands as Major Brands if they had a strong presence in multiple search engine results in the EU countries, indicating potential significant marketing reach and consumer recognition ([32]), or were major licensed gambling companies.

No differentiation was made between:

- brands belonging to MoU signatories and brands belonging to non-MoU signatories, and
- brands to which brand safety standards or self-regulatory initiatives were applied, and other brands.

White Bullet deemed a brand or an Ad Intermediary to be based in the EU if it had either headquarters in an EU country or an established business operation in at least one EU country. To ascertain this, White Bullet visited the website of each entity to determine if an EU office was listed. If that information could not be found on the website, White Bullet then researched public sources for any indication of an established office in an EU country.

2.8 Potential ad revenue estimation methodology

Estimated annual ad revenue is the potential estimated revenue that websites and apps could generate from digital advertising worldwide annually. The results were derived from actual advertising data collected by White Bullet's Ad Monitoring System, incorporating available daily pageview data (for websites) and daily session (usage) data (for apps), and extrapolating to include full annual coverage for all countries.

([32]) Google was used as the search engine, as Statcounter indicated it continued to have a market share of more than 90 % for Europe, as it did in 2021. See https://gs.statcounter.com/search-engine-market-share/all/europe/#monthly-202401-202409.

White Bullet estimated the potential ad revenue of piracy websites and apps by combining multiple independent and proprietary data sources within a revenue calculation algorithm. This included:

- data about actual ads captured by White Bullet during ad harvesting visits,
- for websites, daily pageview data for those websites drawn from independent third-party sources indicating traffic volume, and for apps, daily session data calculated using reported app store install numbers and industry estimates for usage (see below for specific details on daily sessions), and
- advertising valuation data based on a proprietary matrix; this was created from industry advertising payment and bidding values identified in major advertising exchanges where White Bullet is integrated, industry-published average ad bidding values by ad sector and format, and ad bidding values identified by White Bullet directly from the code behind captured ads (where available).

To estimate daily sessions for app usage, White Bullet created a calculation, as no third-party data is available for app usage as an equivalent to daily pageviews for websites. Daily session data was created using the following formula: taking the number of installs of each app from app store sources; estimating how many of those installs may be retained on users' devices based on third-party data averaging retention rates for media sector apps; applying a factor for how many of those retaining users use the apps each month based on third-party usage data; and finally applying another factor to determine how many of those retaining monthly users might use each app daily, based on a conservative once-weekly usage.

To create the advertising valuation matrix for websites and for apps, White Bullet applied multipliers to core base values for the three dominant payment models in digital advertising: Cost Per Mille (CPM), Cost Per Click (CPC), and Cost Per Action (CPA). White Bullet's methodology used a different core base value for CPM, CPC or CPA advertising drawn from industry estimates from third-party sources, which depend on various data components, including digital ecosystem (e.g. desktop web, mobile web, app, search, social), market sector (e.g. health, finance, travel), ad format (e.g. display, pop-up/-under) and media type (e.g. image, video, rich media). Multipliers applied were dependent on the advertiser type (e.g. Major Brand, clickbait), ad dominance (e.g. density of ads on the publisher page, where relevant) and country where the ad was displayed. In the latter case, a multiplier was applied to each ad for that country based on average advertising spend by internet

user for that country as a percentage of average advertising spend by internet user benchmarked against the US. For CPC and CPA advertising, core base values and related click-through rates (depending on market sector and multipliers) were applied to both core base values and click-through rates (depending on the ad format, media type, advertiser type, ad dominance and country, again drawn from industry estimates from third-party sources).

Data points collected from ad harvesting visits by the Ad Monitoring System were cross-referenced with the advertising valuation matrix, after which extrapolation calculations were created using estimated third-party pageviews of those websites or daily sessions in those apps, and ratio of ads to visits by brand, by country. Third-party data included in the above calculations was drawn from numerous sources, including publicly available data from Statista, eMarketer and Google AdSense, as well as data from industry experts and ad exchange bid data available to White Bullet.

The estimated advertising revenue data in this report is an estimate of potential revenues based on extrapolated data, and as such it may vary from sums actually generated by publishers. Advertising values are heavily dependent on a range of factors and are therefore estimates based on extrapolating data using statistical correlations. White Bullet used conservative core base values and multipliers within the ad revenue matrix, and conservative daily pageview and daily session extrapolations, with the understanding that websites and apps might command varying advertising rates with different buyers. The values in the ad revenue calculation algorithm were periodically reviewed and updated as needed to reflect the digital marketplace. The worldwide country extrapolation is based on all available country traffic data for websites and total reported install numbers for apps.

2.9 Data and revenue analysis

The data in this report is divided into sections for the analysis of (a) the 2024 Monitored Websites (b) the 2024 Monitored Apps (c) the 2024 Monitored Websites and Apps compared (d) 2024 Monitored Websites and Apps trends, and (e) Trends Across Years. The analyses in these sections are presented as follows:

2.9.1 Top-level analyses for websites and apps in the 2024 Ad Monitoring Exercise

The data collected was analysed as follows.

- **2024 Overview**: provides a summary overview of the websites or apps tracked in the 2024 Ad Monitoring Exercise and the estimated revenue, with breakdown by website or app type.
- **Estimated Ad Impression Analysis**: analyses the Ad Impressions estimated for the 2024 Monitored Websites or 2024 Monitored Apps by website or app type; for websites, a breakdown by country is provided.
- **Ad Type Analysis**: defines categories of Ad Types and provides breakdowns of Ad Types by these categories and distribution by country.
- **Branded Advertising Sector Analysis**: analyses the Top-level Sectors identifying the industry in which a brand operates for brands identified in the 2024 Ad Monitoring Exercise, with details by country.
- **Brand Analysis**: analyses brands collected in the 2024 Ad Monitoring Exercise, including distribution by country; in addition, the report addresses the question of what percentage of brands collected were EU Brands, with an analysis of percentages of brand source territories by country.
- **Ad Intermediary Analysis**: analyses the variation and diversity of the Ad Intermediaries found across all advertising collected during the 2024 Ad Monitoring Exercise, with breakdowns by website or app type, and percentage of EU Ad Intermediaries by country. In 2024, the technology to identify Ad Intermediaries was enhanced to focus on the most relevant categories (Ad Tech, Ad Serving, Adware, and Anonymised Ad Tech Ad Intermediaries). Ad Intermediaries identified as domain hosts or data management platforms were excluded from the totals in 2024, resulting in a decrease in the number of total unique Ad Intermediaries for this period.
- **Estimated Ad Impressions analyses**: for websites, estimated Ad Impressions were calculated by extrapolating advertising data harvested by White Bullet's Ad Monitoring System with Pageview data on the 2024 Monitored Websites procured by third-party providers. The Pageview data used is specific to the countries where the advertisements were captured and allows estimates based on the actual Ad Impressions displayed by the 2024 Monitored Websites in the countries monitored in the 2024 Ad Monitoring Exercise. For apps, estimated Ad Impressions are calculated by extrapolating advertising data harvested by the Ad Monitoring System with download data for the 2024 Monitored Apps obtained from app stores

providing the APKs, along with a proprietary algorithm that incorporates estimates for user sessions based on third-party data. The app download data obtained from app stores is generally not specific to countries; therefore, the estimated Ad Impressions for apps provided in this report are global figures rather than country specific.

- **Ad Revenue Analysis**: analyses the estimated ad revenue generated by the 2024 Monitored Websites with breakdowns by country, including EU and worldwide projections. For the 2024 Monitored Apps, estimated ad revenue analyses include estimates of worldwide ad revenue comparisons by quarter, as well as worldwide annual estimated ad revenue.

2.9.2 Top-level trend analyses for websites and apps across the 2024 Ad Monitoring Exercise

- **Estimated Ad Impressions Trend in 2024**: analyses the changes in estimated Ad Impressions throughout the 2024 Ad Monitoring Exercise by month.
- **Ad Type Trend in 2024**: analyses the changes in Ad Type percentages by month in 2024.
- **Major Brands Trend in 2024**: analyses the trends in numbers of unique Major Brands by month and website/app type.
- **Major Brands Ad Impressions / Volume Served by EU Brands Trend in 2024**: analyses the changes by month in the percentage of Major Brands' estimated Ad Impressions that were identified as EU Brands.
- **Ad Intermediaries Trend in 2024**: analyses the trends in numbers of unique Ad Intermediaries by month and website/app type.
- **Ad Revenue Trend in 2024**: analyses the changes in estimated ad revenue by month and website/app type.

2.9.3 Top-level trends across the years

These analyse key trends between 2019 and 2024. Comparisons to previous years are based on the published data results.

- **Brands Trend Analysis**: compares the total brands and Major Brands from 2019 to 2024, with a breakdown by website type.

- **Ad Intermediary Trend Analysis**: compares the total Ad Intermediaries in 2020 and 2024, with a breakdown by website type.
- **Branded Advertising Trend Analysis**: compares the percentages of Ad Types for websites from 2019 to 2024. This section also provides comparisons for Ad Types for both Illegal and High-Risk Websites by year.
- **Impact of IWLs Trend Analysis**: analyses impact of website Ad Types for various IWLs within originating countries and in the EU as a whole, as well as the control countries, over time. For the PIPCU IWL, analyses are provided from 2019 to 2024. For WIPO ALERT (Italy) and (Lithuania), analyses are provided from 2021 to 2024.
- **Branded Advertising Sector Trend Analysis**: compares the changes in the Top-level Sectors for Branded Advertising and Major Brands between 2019 and 2024.
- **Revenue Trend Analysis**: compares key revenue factors for websites and apps across years, namely from 2020 to 2024 for websites and from 2021 to 2024 for apps.

3 2024 Ad Monitoring Exercise – web monitoring analyses

3.1 2024 Overview

3.1.1 Advertising, economic and piracy trends in 2024

Several background factors provide context for the results of the 2024 Ad Monitoring Exercise: the growth of global digital advertising markets in 2024; the ongoing recovery of the economies in the monitored EU countries; cyclical events occurring in 2024 that impacted both advertising and piracy; and the continuing evolution and dynamism of the IPR-infringing ecosystems.

Trends in the general economy and ad industry are often reflected in advertising data drawn from IPR-infringing publishers. The digital ad industry has grown following setbacks in 2022, and economies are stabilising from high levels of inflation. IAB Europe reported in May 2024 that the 2023 digital ad spend in Europe grew 11.1 % to EUR 96.9 billion amidst high levels of inflation ([33]) after a digital ad industry deceleration in 2022. In its autumn 2024 Forecast, the European Commission projected an average EU inflation rate of 2.6 % ([34]), compared to 6.5 % in 2023 ([35]). In December 2024, GroupM estimated 2024 global ad advertising revenues at USD 1.04 trillion, a 9.5 % increase over 2023 ([36]). Among the top 10 ad revenue growth markets cited were France (8.5 %) and Germany (6.3 %), as well as the control countries, namely the US (9 %) and the UK (8.3 %). The fastest-growing digital ad sector categories in 2024 included Consumer Packaged Goods (including the Fast Moving Packaged Goods sectors of Food, Drinks, Personal Care and Household Goods), Government, Betting, and Finance ([37]). The Government category reflects the large number of elections in many countries around the world in 2024, with above-average ad spend

([33]) IAB Europe, *Adex Benchmark Report 2023 Study*, May 2024.

([34]) European Commission, *European Economic Forecast August 2024, Institutional Paper 296*, November 2024.

([35]) European Commission, *European Economic Forecast August 2023, Institutional Paper 258*, November 2023.

([36]) Scott-Dawkins, Kate and Shah, Nidhi. GroupM 2024 Global End of Year Forecast. 8 December 2024.

([37]) 'MAGNA Advertising Forecast: Media Innovation to Propel the Global Ad Market Towards the Trillion Mark', 8 December 2024.

in many countries. Government-sector advertising also appeared for the first time in 2024 among the top-ranked sectors for several countries for the 2024 Monitored Websites.

Artificial intelligence (AI) is increasingly being used not only to optimise creative costs for advertising but also in programmatic advertising ([38]). The impact of AI in these environments will need to be carefully monitored going forward to ensure that inadvertent ad misplacements, such as on IPR-infringing websites, do not occur.

Piracy websites have become increasingly dynamic in 2024, perhaps in response to enforcement efforts. Website churn, a measure of domains auto-redirecting to new websites or going offline, was 33 % higher in 2024 (48 %) than in 2023 (36 %). It is not unusual to see multiple mirror websites spring up in response to website-blocking actions, expanding the total number of piracy websites. Desktop (rather than mobile) websites remain the ecosystem of choice for film and television piracy, as well as sports and live-event piracy ([39]). The results of the 2024 Ad Monitoring Project below reflect a growth in the impact of website piracy and advertising on piracy websites in comparison to 2021.

3.1.2 Overview of 2024 Ad Monitoring results – websites

An initial 4 226 websites passed the selection criteria (see Section 2.5 above) and were included in the initial monitoring pool on 1 January 2024. Illegal Websites accounted for 46 % of the 2024 Monitored Websites at the start of the 2024 Ad Monitoring Exercise, while High-Risk Websites accounted for 54 %.

The number of websites monitored over the course of each quarter of the 2024 Ad Monitoring Exercise fluctuated, reflecting changes to relevant IWLs and any new IP-infringing websites named in publicly available EU court orders during the 2024 Ad Monitoring Exercise. New High-Risk Websites that were identified during the 2024 Ad Monitoring Exercise and that passed the selection criteria were also added for monitoring. High-Risk Websites that were verified as no longer infringing were removed.

([38]) Ibid.

([39]) EUIPO, *Online Copyright Infringement in the European Union – Films, Music, Publications, Software and TV (2017-2023)*, November 2024.

As shown in Table 3, the fluctuations throughout the monitoring period resulted in a total of 7 250 websites being monitored by the end of the 2024 Ad Monitoring Exercise, a net increase of 3 024 websites during the monitoring period. Illegal Websites accounted for 44 % of the 2024 Monitored Websites, while High-Risk Websites accounted for 56 % of the 2024 Monitored Websites by the end of the monitoring period.

2024 OVERVIEW – ALL MONITORED COUNTRIES				
WEBSITE TYPE	TOTAL WEBSITES	TOTAL EST. AD IMPRESSIONS	EST. AD REVENUE FOR ALL MONITORED COUNTRIES	EST. WORLDWIDE AD REVENUE
Illegal Websites	3 165 (44 %)	14.9B	EUR 70.0M	EUR 92.2M
High-Risk Websites	4 085 (56 %)	13.4B	EUR 69.1M	EUR 149.8M
2024 Monitored Websites	**7 250**	**28.3B**	**EUR 139.1M**	**EUR 242.0M**

Table 3: 2024 Ad Monitoring Exercise overview – all monitored countries – websites

2024 OVERVIEW – 18 EU COUNTRIES				
WEBSITE TYPE	TOTAL WEBSITES	TOTAL EST. AD IMPRESSIONS	EST. AD REVENUE FOR 18 EU COUNTRIES	EST. WORLDWIDE AD REVENUE
Illegal Websites	3 165 (44 %)	8.5B	EUR 13.7M	EUR 92.2M
High-Risk Websites	4 085 (56 %)	6.0B	EUR 8.3M	EUR 149.8M
2024 Monitored Websites	**7 250**	**14.4B**	**EUR 22.0M**	**EUR 242.0M**

Table 4: 2024 Ad Monitoring Exercise overview – 18 EU countries – websites

An estimated 28.3 billion Ad Impressions were collected from the 2024 Monitored Websites during the 2024 Monitoring Exercise, with 53 % collected from Illegal Websites and 57 % from High-Risk Websites. The 2024 Monitored Websites had an estimated ad revenue of EUR 139.1 million from all monitored countries and EUR 242.0 million worldwide during calendar year 2024. Illegal Websites had an estimated ad revenue of EUR 70 million from all monitored countries (50 % of the total) and EUR 92.2 million worldwide (38 % of the total), while High-Risk Websites had an estimated ad revenue of EUR 69.1 million from the monitored countries (50 % of the total) and EUR 149.8 million worldwide (62 % of the total).

Table 4 shows the 2024 website overview for the 18 EU countries. While the Illegal Websites represented only 44 % of the total domains monitored, 59 % (8.5 billion) of the estimated Ad Impressions collected from the 18 EU countries were from Illegal Websites, generating 62 % of the estimated ad revenue (EUR 13.7 million). High-Risk Websites generated only 38 % of the estimated ad revenue from the 18 EU countries (EUR 8.3 million), although 42 % (6 billion) of the estimated Ad Impressions collected from the 18 EU countries were from High-Risk Websites.

3.2 Estimated Ad Impression analysis

3.2.1 Total estimated Ad Impressions

Estimated Ad Impressions were calculated by extrapolating advertising data harvested by White Bullet's Ad Monitoring System with Pageview data on the 2024 Monitored Websites procured by third-party providers. The Pageview data used is specific to the countries where the advertisements were captured and allows estimates based on the actual Ad Impressions the 2024 Monitored Websites displayed in the monitored countries during the 2024 Ad Monitoring Exercise.

As shown in Figure 1, the estimated Ad Impressions across all Monitored Websites increased 92 % from Q1 (2.5 billion) to Q4 (4.8 billion). The largest increase was seen from Q2 (2.4 billion) to Q3 (4.7 billion), a 96 % increase. High-Risk Websites saw the largest percentage increase in estimated Ad Impressions during the 2024 Ad Monitoring Exercise, with a 243 % increase from Q1 (0.7 billion) to Q4 (2.4 billion).

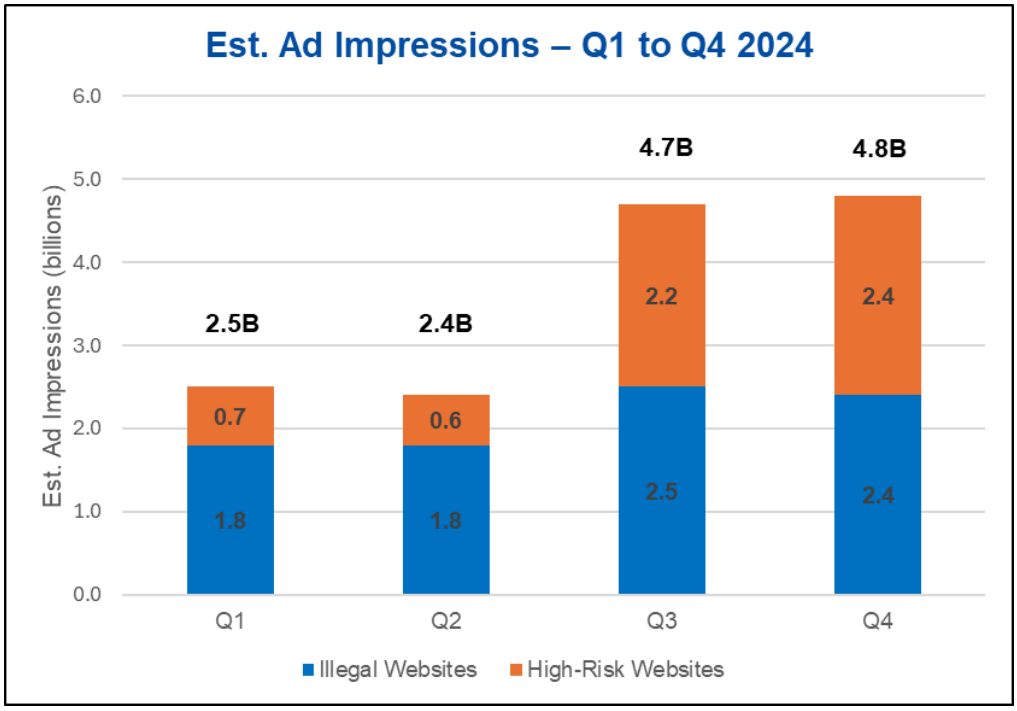


Figure 1: Estimated Ad Impressions – Q1 to Q4 2024 – websites

The increase in Ad Impressions from Q2 to Q3 reflects multiple changes in the piracy ecosystem. As noted in Section 3.1.1 above, there was a higher level of churn in the piracy websites in 2024 than in previous years, probably in response to enforcement. Monitored websites subject to active enforcement either redirected to new domains or became inactive and were replaced with one or more new domains. As domains became inactive, the 2024 Monitored Websites were continually updated from multiple sources, and it is likely that in Q3 some of the added websites had higher Ad Impressions than those previously included. Higher Ad Impressions may also be due to the traffic drawn to pirate websites in this period due to the influx of fresh pirate content from summer film and television releases. Ad Impressions remain high in Q4 with the early surge in advertising for shopping events such as Black Friday and holidays. These are reflected in the sector analyses below (see Section 3.4.1).

3.2.2 Estimated Ad Impressions by country

Figure 2 shows the estimated Ad Impressions for the 2024 Monitored Websites by country for the 2024 Ad Monitoring Exercise. This visualises the distribution of estimated Ad Impressions by territory, which also depended on the relative popularity of the 2024 Monitored Websites in each territory.

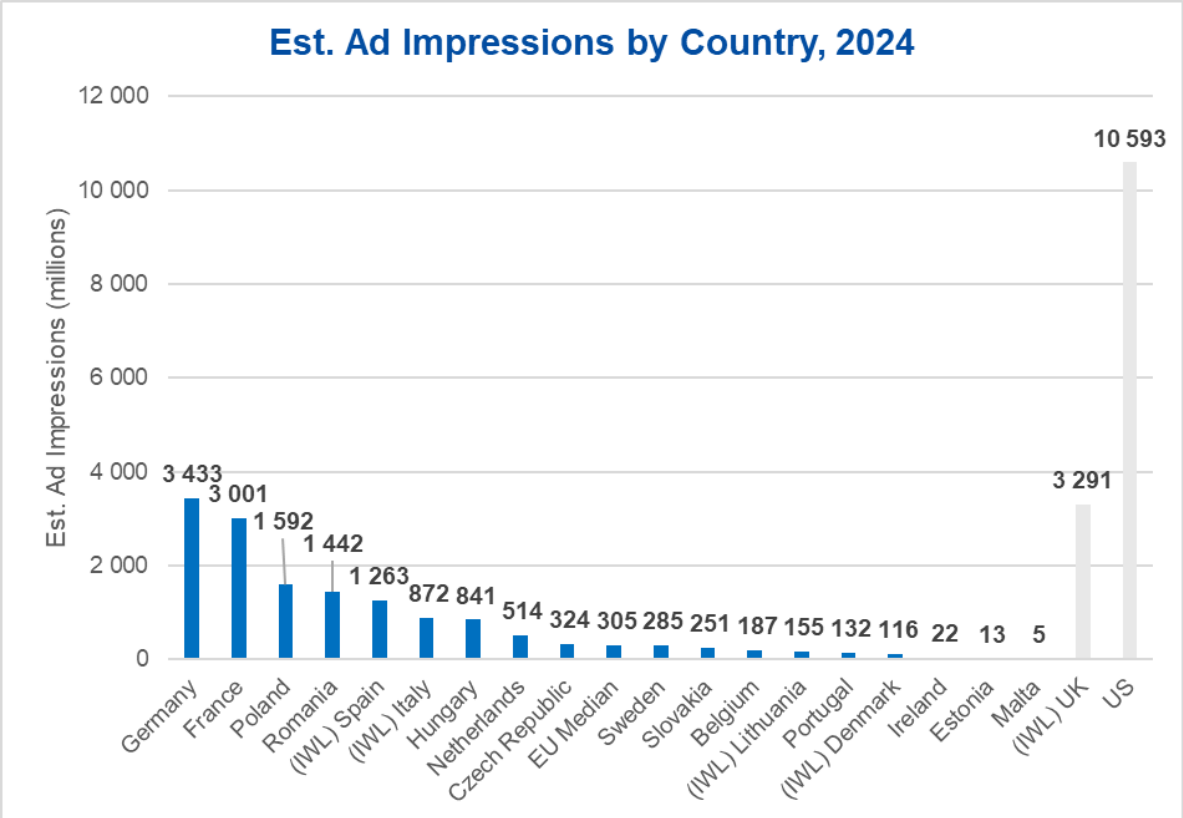


Figure 2: Estimated Ad Impressions by country – websites – 2024 Ad Monitoring Exercise

Germany had the highest level of Ad Impressions among the 18 monitored EU countries, with 24 % (3.4 billion) of the total 14.4 billion estimated Ad Impressions for the 2024 Monitored Websites for the 18 EU countries, while France had 21 % (3 billion) and Poland had 11 % (1.6 billion). The top six territories together had 80 % of the estimated Ad Impressions for the 18 EU countries: Germany, France, Poland, Romania, Spain and Italy. Germany, France, Italy and Spain are consistently the top digital ad spend markets among the monitored EU countries ([40]).

Of the two control territories, the UK – the largest digital ad market in Europe – had 3.3 billion estimated Ad Impressions. The US had 10.6 billion estimated Ad Impressions, equating to 73 % of the total estimated EU Ad Impressions.

([40]) See footnote 33. Page 27 identifies the top markets for display advertising.

Table 5 provides a detailed comparison of the estimated Ad Impressions by country for each quarter of 2024, including the percentage change for each country between quarters.

COUNTRY	Q1	Q2	Q3	Q4	% Change Q1 vs Q2	% Change Q2 vs Q3	% Change Q3 vs Q4	% Change Q1 vs Q4
Belgium	39.6	34.4	72.5	40.8	-13 %	111 %	-44 %	3 %
Czech Republic	46.6	67.0	111.8	98.4	44 %	67 %	-12 %	111 %
IWL Denmark	18.2	15.3	29.4	53.5	-16 %	93 %	82 %	193 %
Estonia	1.6	1.0	5.8	4.4	-37 %	488 %	-24 %	184 %
France	465.5	460.8	991.1	1 083.2	-1 %	115 %	9 %	133 %
Germany	700.4	641.5	1 031.2	1 059.9	-8 %	61 %	3 %	51 %
Hungary	112.0	73.8	305.6	349.5	-34 %	314 %	14 %	212 %
Ireland	3.5	2.4	8.3	8.0	-30 %	241 %	-4 %	130 %
IWL Italy	114.7	135.2	242.0	379.6	18 %	79 %	57 %	231 %
IWL Lithuania	8.4	10.3	73.2	62.9	23 %	612 %	-14 %	652 %
Malta	1.5	1.0	1.2	1.1	-29 %	20 %	-10 %	-24 %
Netherlands	139.1	146.9	110.1	118.1	6 %	-25 %	7 %	-15 %
Poland	326.4	427.9	387.8	450.4	31 %	-9 %	16 %	38 %
Portugal	67.1	29.0	18.1	18.1	-57 %	-37 %	0 %	-73 %
Romania	52.5	51.0	857.0	481.5	-3 %	1581 %	-44 %	817 %
Slovakia	32.2	30.1	93.7	94.5	-6 %	211 %	1 %	194 %
IWL Spain	299.7	193.5	330.4	439.9	-35 %	71 %	33 %	47 %
Sweden	82.3	76.3	58.2	68.5	-7 %	-24 %	18 %	61 %
EU Median	59.8	59.0	101.9	96.5	-1 %	73 %	-5 %	61 %
IWL UK	948.3	784.1	728.8	830.2	-17 %	-7 %	14 %	-12 %
US	2 079.2	1 124.3	3 317.9	4 071.3	-46 %	195 %	23 %	96 %

Table 5: Est. Ad Impressions by country and quarter for the 2024 Monitored Websites (millions)

Patterns of estimated Ad Impressions by quarter in the 2024 Ad Monitoring Exercise varied by country. For example, estimated Ad Impressions dropped in most countries from Q1 to Q2 but increased in this period in five countries (Czech Republic, 44 %; Italy, 18 %; Lithuania, 23 %; Netherlands, 6 %; Poland 31 %). Similarly, while 14 EU countries saw an increase in estimated Ad Impressions from Q2 to Q3, estimated Ad Impressions decreased in the following countries: Netherlands (-25 %), Poland (-9 %), Portugal (-37 %) and Sweden (-24 %). Romania had the highest increase from Q2 to Q3 (1 581 %), and the EU median change was 73 %. Estimated Ad Impressions decreased in the UK, a control country, from Q2 to Q3 (-7 %), but in the US they increased by 195 %.

Romania had the largest percentage increase (817 %) in estimated Ad Impressions from Q1 to Q4, compared to the EU median percentage increase of 61 %. Lithuania had the second highest percentage increase (652 %), followed by Italy (231 %). The UK, a control territory, was well below the EU median in the percentage change from Q1 to Q4 with -7 %, while the US had a 96 % increase over the same period.

3.3 Ad Type analysis

3.3.1 Ad Type breakdown

To understand the diversity in the advertising collected, ads were categorised into five Ad Types.

- **Branded Advertising**: ads that can be attributed to a brand. For the purpose of this report, Branded Advertising is broken down into two sub-groups:
  - **Major Brands**: brands that are on selected top advertiser lists or are otherwise premium reputable established brands with a strong search engine presence in EU countries;
  - **Other Brands**: brands that are not major but are also not fraudulent, adult, or malicious.
- **Adult**: ads that display sexually explicit imagery or wording.
- **Fraud & Malware**: ads that engage in click generation or known fraudulent or identifiable malicious activity.
- **Sponsored Content**: native ads placed within content boxes and including multiple advertorials in a single inventory slot.
- **Unidentifiable Ads**: ads that cannot be attributed to a specific brand or other Ad Type.

3.3.2 Branded Advertising

The presence of recognisable Branded Advertising on IP-infringing websites may lead consumers to mistakenly believe they are accessing a reputable website. In addition, misplaced Branded Advertising inadvertently funds illicit activity and damages brand equity, associating brands with high-risk content.

Figure 3 analyses the estimated Ad Impressions extrapolated from the ads collected in 2024 with breakdowns by Ad Type and website type.

Across all 2024 Monitored Websites, Branded Advertising represented 61 % of estimated Ad Impressions. The estimated Ad Impressions for Major Brands was highest on Illegal Websites, at 25 % of estimated Ad Impressions, compared to 14 % on High-Risk Websites. However, Branded

Advertising was highest overall on High-Risk Websites at 64 %, compared to 58 % on Illegal Websites.

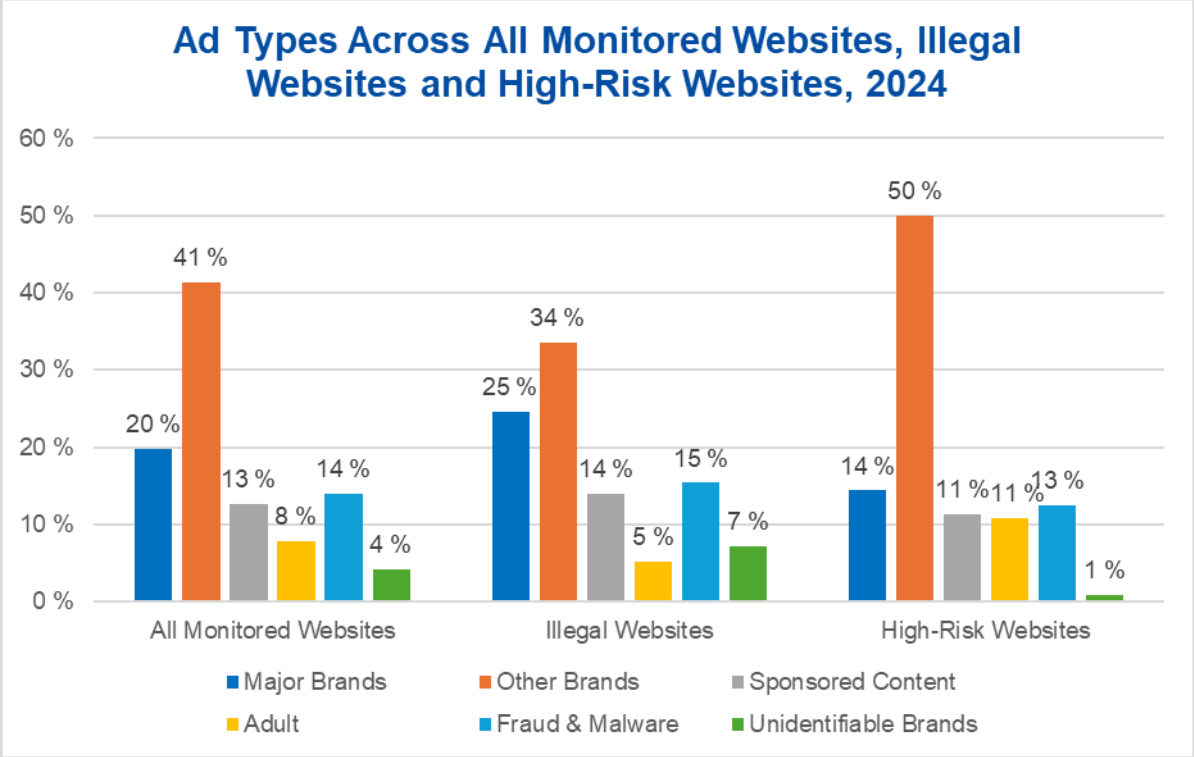


Figure 3: Ad Types across all Monitored Websites, Illegal Websites and High-Risk Websites, 2024

Figure 4 provides a comparison of the Ad Type proportions across all 2024 Monitored Websites by quarter, while Figure 5 provides a comparison of the Ad Type proportions by quarter for Illegal Websites and High-Risk Websites.

The estimated Ad Impressions for Branded Advertising across all Monitored Websites was lowest in Q1 at 57 %, but was consistent at 62 % in Q2-Q4. The percentage of estimated Ad Impressions for Major Brand advertising was highest in Q1 at 38 %, declining to 13 % in Q3 and 11 % in Q4 ([41]). Estimated Ad Impressions for Fraud & Malware were highest in Q4 at 20 %.

([41]) As will be seen in Section 3.5, the total number of Major Brands increased from Q1 to Q4. This chart represents the percentages of the estimated Ad Impressions for each Ad Type.

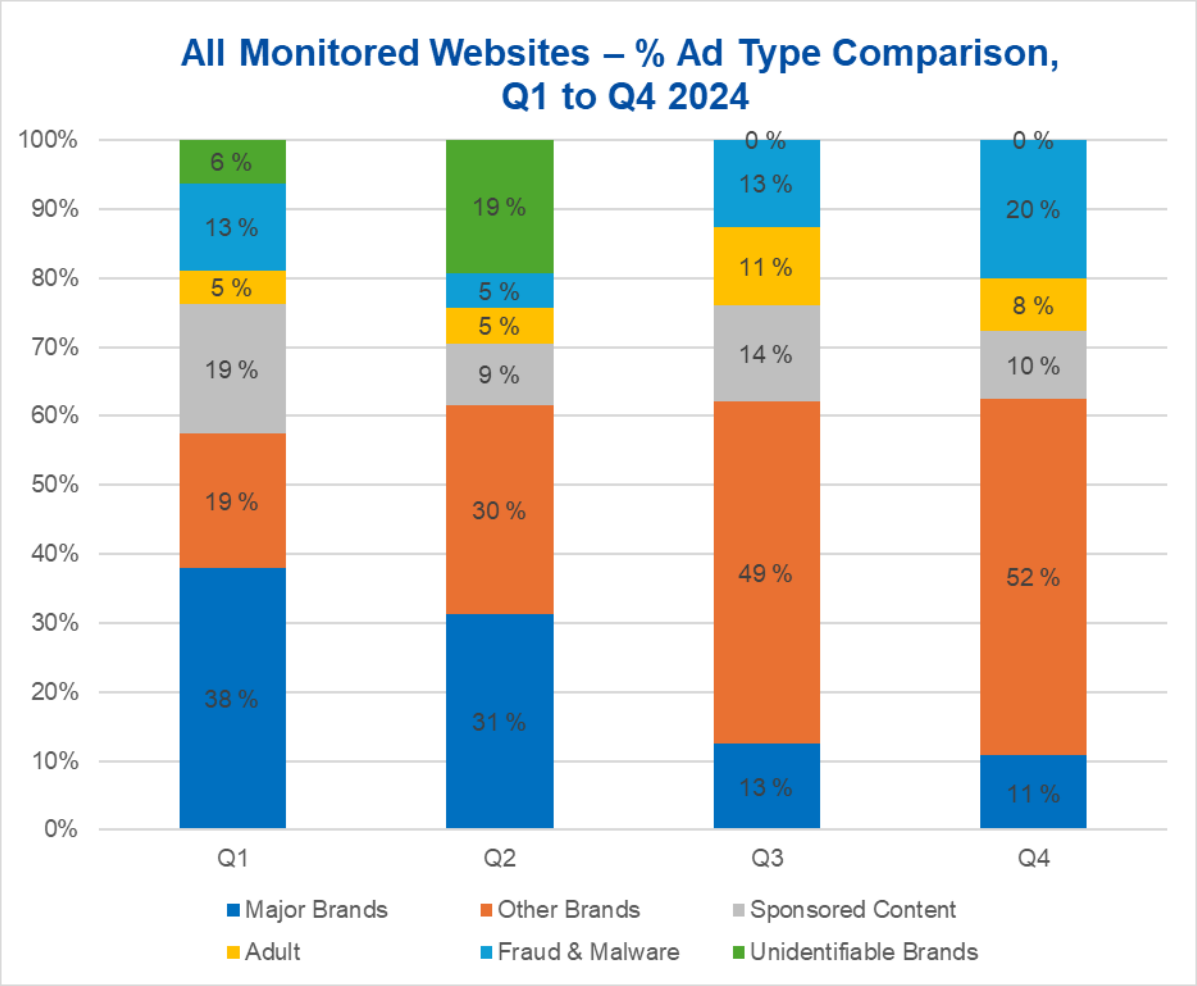
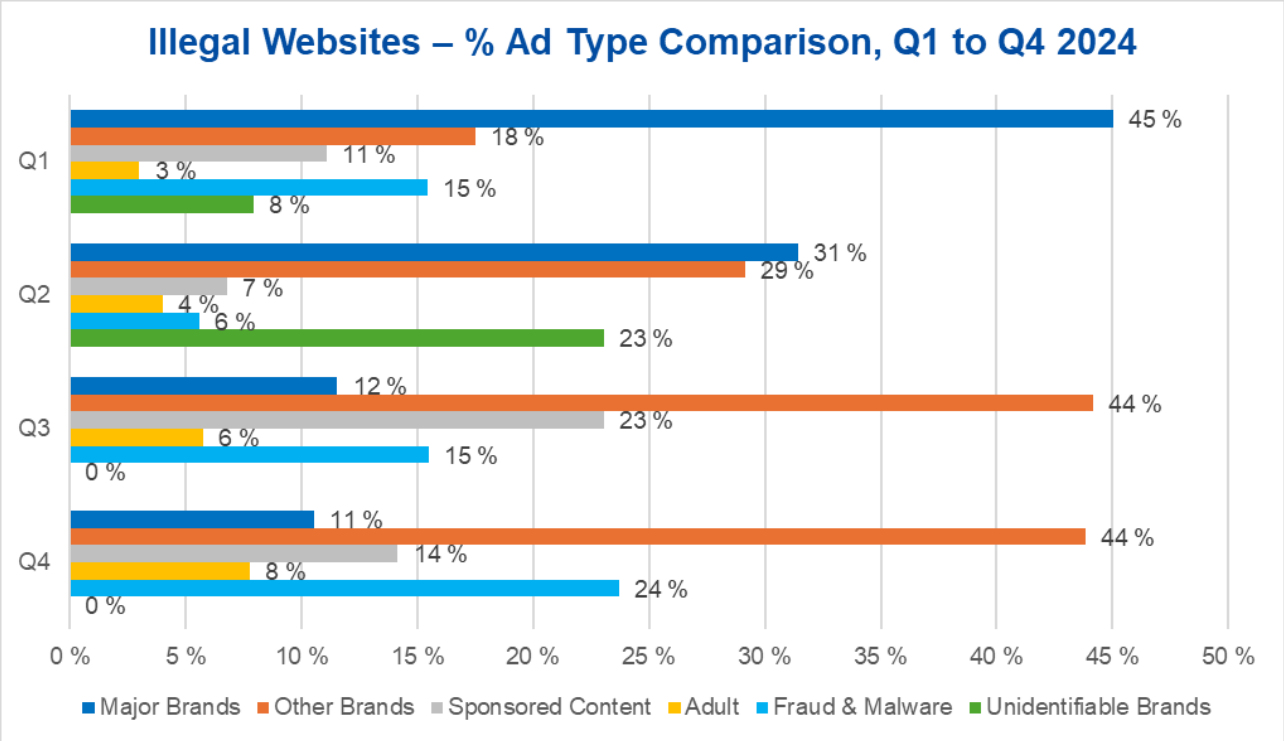


Figure 4: Ad Type comparison – Q1 to Q4 2024, all Monitored Websites

The total Branded Advertising on Illegal Websites was highest in Q1 at 63 %. By comparison, Branded Advertising was lowest on High-Risk Websites in Q1 (44 %) and increased to 68 % by Q4.

The estimated Ad Impressions for Major Brand advertising on Illegal Websites were highest in Q1 at 45 % and decreased each quarter to 11 % by Q4. In contrast, the estimated Ad Impressions for Major Brand advertising on High-Risk Websites peaked in Q2 at 31 % and decreased significantly after that to 13 % in Q3 and 11 % in Q4.



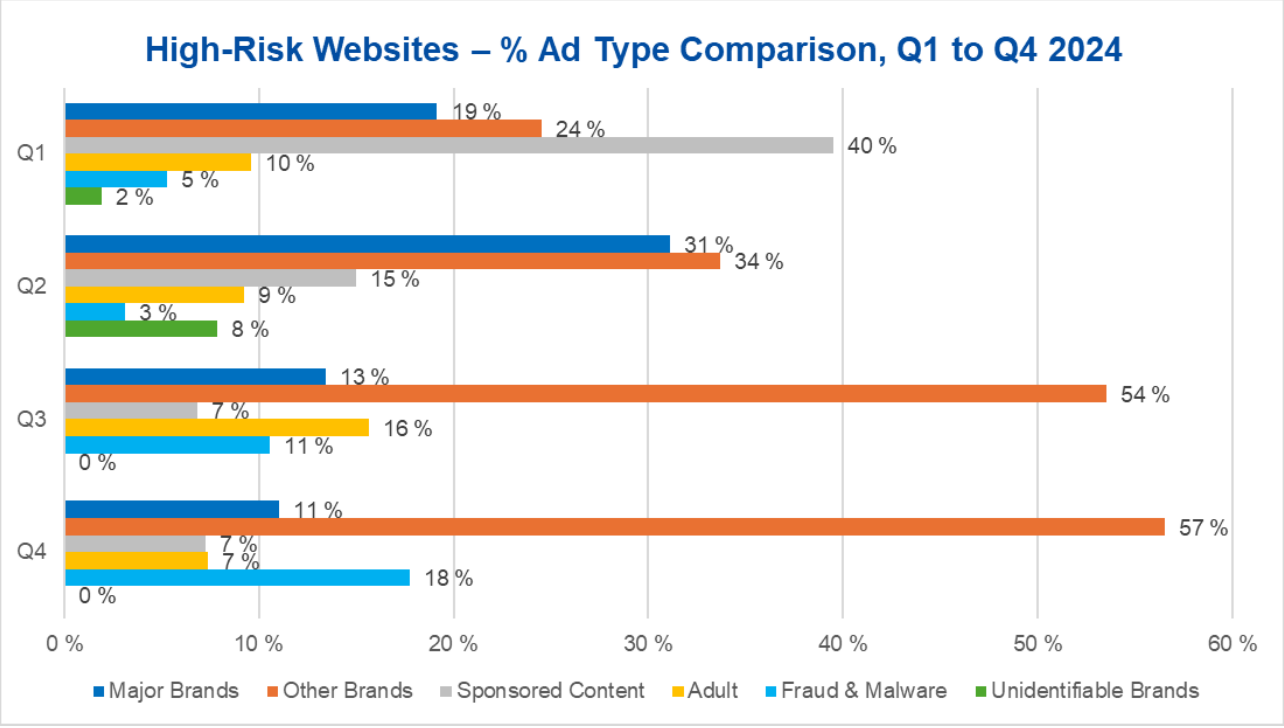


Figure 5: Ad Type comparison – Q1 to Q4 2024 – Illegal and High-Risk Websites

3.3.3 Sponsored Content, Adult and Fraud & Malware advertising

Sponsored Content advertising across all Monitored Websites was highest in Q1 with 19 % of estimated Ad Impressions, and lowest in Q2 with 9 %. Notably, the estimated Ad Impressions for Sponsored Content were the highest-volume Ad Type on High-Risk Websites in Q1 (40 %) but decreased significantly thereafter, ending at 7 % in Q3 and Q4.

Estimated Ad Impressions for Adult ads across all 2024 Monitored Websites were 5 % in Q1 and Q2 but increased to 11 % in Q3, before decreasing slightly to 8 % in Q4. High-Risk Websites had significantly higher percentages of estimated Ad Impressions for Adult ads than Illegal Websites until Q4. For example, in Q1 adult ads represented 10 % of estimated Ad Impressions on High-Risk Websites, compared to 3 % on Illegal Websites. In Q4, however, Illegal Websites had 8 % of estimated Ad Impressions from adult ads, compared to just 7 % from High-Risk Websites.

Estimated Ad Impressions for Fraud & Malware across all 2024 Monitored Websites represented 13 % in Q1 and Q2, with an increase to 20 % in Q4. Note that in Q2 there was only 5% of estimated Ad Impressions for Fraud & Malware across all 2024 Monitored Websites. Across all quarters, Fraud & Malware percentages of estimated Ad Impressions were highest on Illegal Websites. For example, in Q1, Fraud & Malware ads represented 15 % of estimated Ad Impressions on Illegal Websites, compared to just 5 % on High-Risk Websites.

3.3.4 Ad Type by country

Table 6 shows the proportion of Ad Types by country across all the 2024 Monitored Websites in 2024.

Spain had the highest levels of estimated Ad Impressions for Major Brands at 34 %, followed by Italy (29 %) and the Netherlands (28 %). Estonia had the highest level of estimated Ad Impressions for total Branded Advertising at 91 %, followed by Portugal at 81 %, well above the EU median of 51 %. Both control territories were above the EU median of 16 % for estimated Ad Impressions for Major Brands, with 27 % from the UK and 18 % from the US. In contrast, the control territories were below the EU median of 68 % for total Branded Advertising, with 64 % from the UK and 59 % from the US.

Romania had the highest levels of Ad Impressions for Fraud & Malware at 31 %, followed by Italy at 21 %, both well above the EU median of 13 %. The UK, a control country, was below the EU median for Fraud & Malware with 11 % of estimated Ad Impressions, and the US was above with 15 %.

COUNTRY	% MAJOR BRANDS	% OTHER BRANDS	% TOTAL BRANDED ADVERTISING	% SPONSORED CONTENT	% FRAUD & MALWARE	% ADULT	% UNIDENTIFIABLE ADS
Belgium	15 %	32 %	47 %	31 %	14 %	6 %	2 %
Czech Republic	8 %	67 %	74 %	4 %	13 %	8 %	0 %
IWL Denmark	20 %	51 %	71 %	6 %	13 %	7 %	3 %
Estonia	4 %	86 %	91 %	1 %	6 %	2 %	1 %
France	21 %	32 %	53 %	14 %	15 %	13 %	5 %
Germany	23 %	37 %	59 %	20 %	9 %	6 %	6 %
Hungary	5 %	56 %	61 %	4 %	14 %	21 %	0 %
Ireland	25 %	55 %	79 %	3 %	13 %	3 %	2 %
IWL Italy	29 %	32 %	62 %	10 %	21 %	4 %	5 %
IWL Lithuania	5 %	30 %	35 %	64 %	1 %	1 %	0 %
Malta	8 %	46 %	54 %	6 %	7 %	32 %	1 %
Netherlands	28 %	40 %	68 %	11 %	13 %	2 %	5 %
Poland	24 %	54 %	78 %	16 %	3 %	2 %	2 %
Portugal	10 %	71 %	81 %	4 %	11 %	2 %	2 %
Romania	1 %	54 %	55 %	12 %	31 %	1 %	0 %
Slovakia	8 %	59 %	68 %	9 %	14 %	9 %	0 %
IWL Spain	34 %	36 %	71 %	10 %	16 %	3 %	1 %
Sweden	17 %	51 %	68 %	5 %	17 %	4 %	6 %
EU Median	16 %	51 %	68 %	9 %	13 %	4 %	2 %
IWL UK	27 %	37 %	64 %	11 %	11 %	7 %	8 %
US	18 %	42 %	59 %	11 %	15 %	10 %	4 %

Table 6: Ad Types by country for the 2024 Monitored Websites

Figure 6 provides a focused analysis of the impact of the PIPCU IWL in the UK compared to the EU median and in the US by analysing the 840 active websites included in the PIPCU IWL during the 2024 Ad Monitoring Exercise. Figure 6 indicates that the UK had a noticeably lower level of Other Brands (30.9 %) on the PIPCU IWL websites, compared to 54.4 % across all 2024 Monitored Websites shown in Table 5. Surprisingly, the UK level of Major Brand advertising was higher on the PIPCU IWL websites (38.4 %) than across all 2024 Monitored Websites (27 %). This may be due to high levels of estimated Ad Impressions from the top five Major Brands on the IWL websites, which together represented 94 % of the estimated Major Brand Ad Impressions. Notably, the two brands with the highest level of estimated Ad Impressions were global operations from China. These brands do not appear to be participating in the PIPCU IWL programme, based on the data collected in the 2024 Ad Monitoring Project. Interestingly, the UK had a lower percentage of estimated Ad

Impressions for Fraud & Malware on the PIPCU IWL websites (7.6 %) than from all 2024 Monitored Websites (11 %).

The EU median of 15.0 % for Major Brand advertising for the PIPCU IWL websites was slightly lower than the 16 % for the 2024 Monitored Websites. However, the EU median of 69.3 % for Branded Advertising for the PIPCU IWL websites was slightly higher than the 68 % for 2024 Monitored Websites. However, the EU median of 30 % for adult ads was nearly double the percentage across all 2024 Monitored Websites (17 %).

Major Brand advertising was significantly higher from the US for the PIPCU IWL websites (27.8 %) than across the 2024 Monitored Websites (18 %). Fraud & Malware from the US was also higher on the PIPCU IWL websites (22.1 %) than across the 2024 Monitored Websites (15 %).

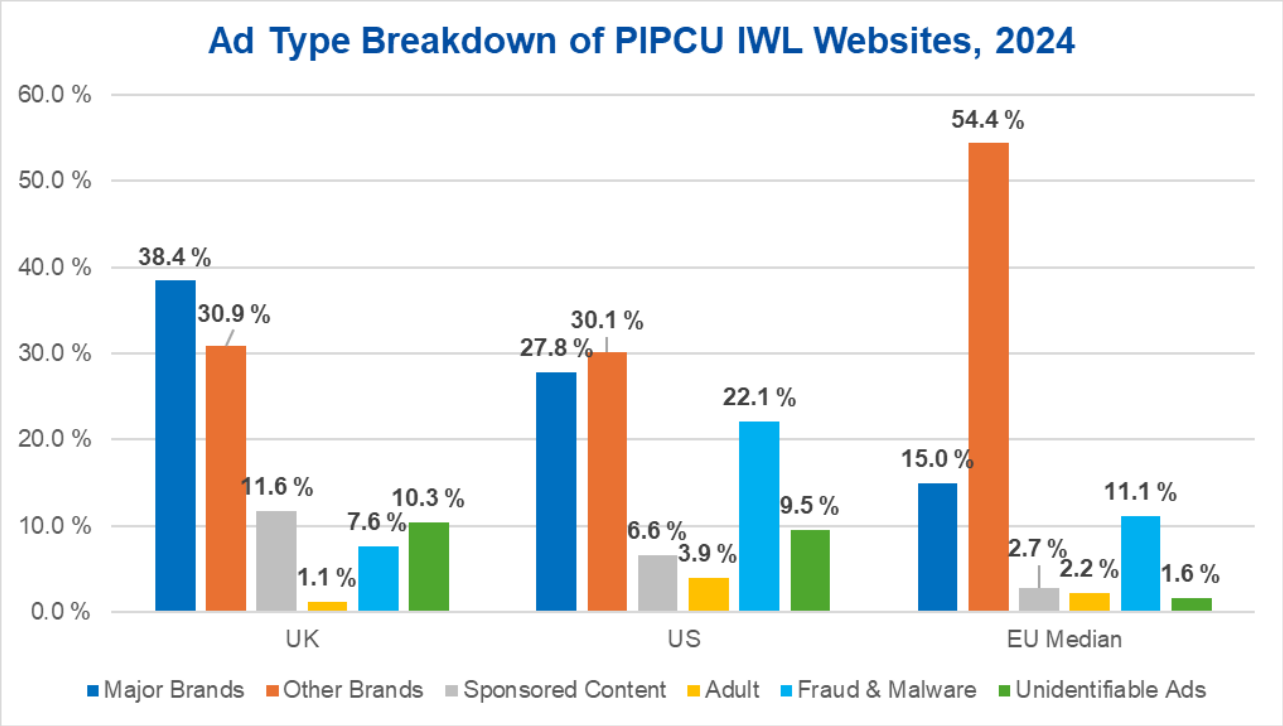


Figure 6: Ad Type breakdown on IWL websites: PIPCU IWL
840 active domains analysed

Figures 7, 8 and 9 provide focused analyses of the impact of the WIPO ALERT IWLs for Italy, Lithuania and Spain respectively compared to the rest of the countries monitored in the EU, as well

as the UK and the US, by analysing the active websites included in each IWL during the 2024 Ad Monitoring Exercise.

Figure 7 provides a focused analysis of the impact of the WIPO ALERT IWL in Italy compared to the other 17 monitored EU countries, as well as to the US and UK, by analysing the 445 active websites included in the Italy IWL during the 2024 Ad Monitoring Exercise. Figure 7 indicates that Italy had a noticeably lower level of Major Brand advertising (15.1 %) on the Italy IWL websites compared to 29 % across all 2024 Monitored Websites shown in Table 6. The Italy level of overall Branded Advertising was also lower on the Italy IWL websites (56 %) than across all 2024 Monitored Websites (62 %). Italy had a significantly higher percentage of estimated Ad Impressions for Sponsored Content on the Italy IWL websites (26.7 %) than from all 2024 Monitored Websites (10 %).

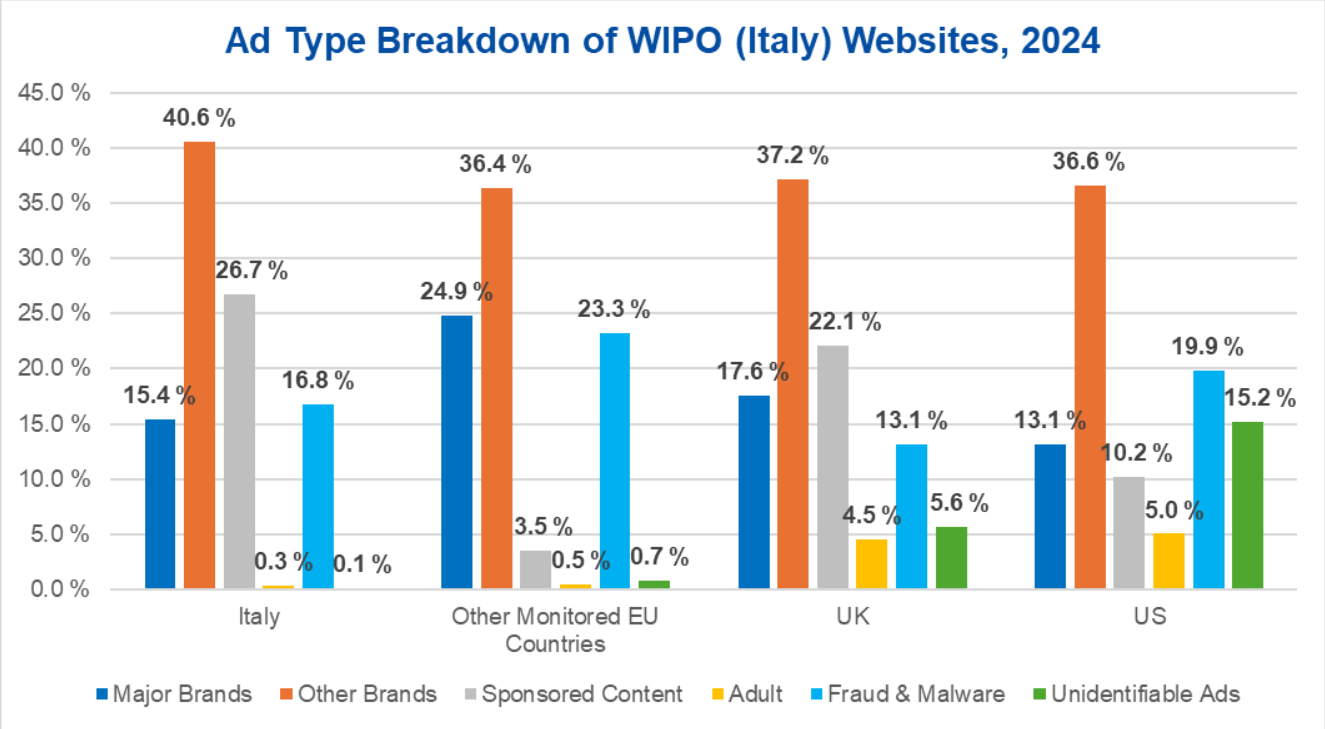


Figure 7: Ad Type breakdown on IWL websites: WIPO ALERT (Italy)
445 active domains analysed

Major Brand advertising was 24.9 % for the other monitored EU countries for the Italy IWL websites, higher than the 16 % EU median for all 2024 Monitored Websites. In contrast, the 61.3 % for total Branded Advertising for the other monitored EU countries for the Italy IWL websites was lower than the EU median of 68 % for all 2024 Monitored Websites. The US had a lower percentage of Branded

Advertising (49.7 %) on the Italy IWL websites than across all 2024 Monitored Websites (59 %). Similarly, the UK had a lower percentage of Branded Advertising (54.7 %) on the Italy IWL websites than across all 2024 Monitored Websites (64 %).

Figure 8 provides a focused analysis of the impact of the WIPO ALERT (Lithuania) IWL in Lithuania compared to the median for the other 17 monitored EU countries, as well as to the US and UK, by analysing the 44 active websites included in the Lithuania IWL during the 2024 Ad Monitoring Exercise. Figure 8 indicates that Lithuania had a significantly higher level of overall Branded Advertising (98.8 %) on the Lithuania IWL websites compared to 35 % across all 2024 Monitored Websites shown in Table 6. The Lithuania level of Major Brand advertising was 19.1 % on the Lithuania IWL websites, but just 5 % across all 2024 Monitored Websites. Three well-known global brands accounted for 99 % of the estimated Major Brands Ad Impressions on the Lithuania IWL websites. These include a gambling company, an online retailer and a video-gaming company.

Total Branded Advertising was lower on the Lithuania IWL websites from the other 17 EU countries (45.5 %) than the EU median across all 2024 Monitored Websites (68 %). However, Major Brand advertising was higher on the Lithuania IWL websites from the other 17 EU countries (24.8 %) than the EU median across all 2024 Monitored Websites (68 %). Branded Advertising was significantly lower in both control countries on the Lithuania IWL Domains (UK 47.5 % and US 21 %) compared to the 2024 Monitored Websites (UK 64 % and US 59 %).

Higher percentages were seen for Fraud & Malware advertising on the Lithuania IWL websites for the other Monitored EU Countries (33.7 %), and the control countries, namely the UK (26.2 %), and the US (35.3 %), than for these same territories across the 2024 Monitored Websites (EU median 13 %, UK 11 %, and US 13 %).

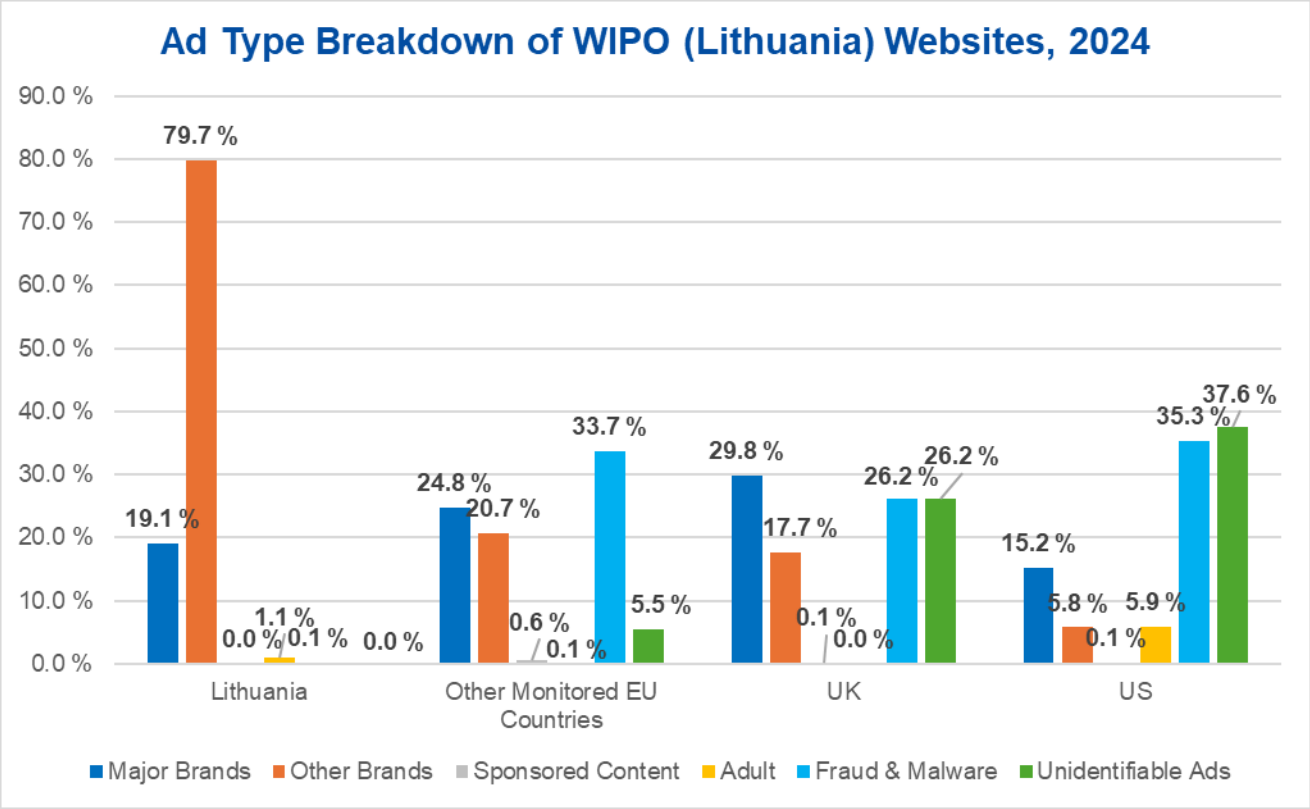


Figure 8: Ad Type breakdown on IWL websites: WIPO ALERT (Lithuania)
44 active domains analysed

Figure 9 provides a focused analysis of the impact of the WIPO ALERT (Spain) IWL in Spain compared to the median for the other 17 monitored EU countries, as well as to the US and UK, by analysing the 145 active websites included in the Spain IWL during the 2024 Ad Monitoring Exercise. The most significant impact of the Spain IWL appears to have been an increase in the percentage of estimated Ad Impressions for Fraud & Malware Advertising across all territories evaluated compared to the data shown in Table 6. For example, Figure 9 indicates that Fraud & Malware advertising in Spain was 78.7 % on the Spain IWL websites, compared to 16 % across all 2024 Monitored Websites, shown in Table 6. The other EU Countries had 21.9 % Fraud & Malware advertising on the Spain IWL Websites, compared to the EU median of 13 % across the 2024 Monitored Websites. The UK, a control territory, had 33.8 % Fraud & Malware advertising on the Spain IWL Websites, compared to 11 % across the 2024 Monitored Websites, while the US had

37.9 % Fraud & Malware advertising on the Spain IWL Websites, but 15 % across the 2024 Monitored Websites.

The Spain level of Major Brand advertising was notably reduced on the Spain IWL websites at 4.4 % compared to 34 % across all 2024 Monitored Websites. Similarly, the 20 % level for Branded Advertising for Spain on the Spain IWL websites was significantly lower than the 71 % identified across all 2024 Monitored Websites. The Major Brand advertising level for the other EU Countries on the Spain IWL websites (15.8 %) was virtually identical to the EU median across the 2024 Monitored Websites. However, all Branded Advertising was lower (48.2 %) for the other EU Countries on the Spain IWL websites than EU median (68 %) across the 2024 Monitored Websites (68 %).

Major Brand advertising was also lower on the Spain IWL websites for both control countries. The UK had 10.9 % Major Brand advertising from the Spain IWL websites, compared to 27 % across the 2024 Monitored Websites. The US had 18 % Major Brand advertising from the Spain IWL websites, compared to 34 % across the 2024 Monitored Websites.

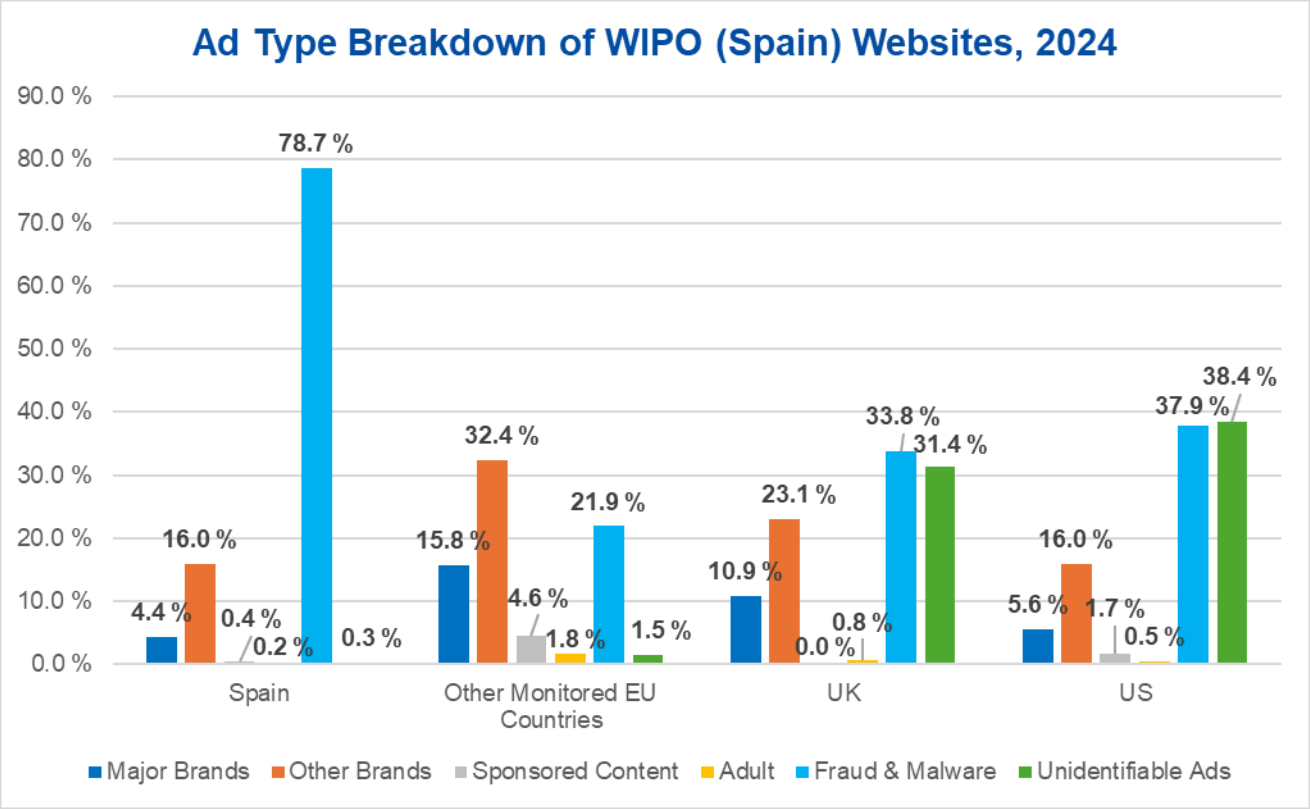


Figure 9: Ad Type breakdown on IWL websites: WIPO ALERT (Spain)
145 active domains analysed

Figure 10 provides a focused analysis of the impact of the Denmark IWL in Denmark compared to the median for other 17 monitored EU countries, as well as to the US and UK, by analysing the 349 active websites included in the Denmark IWL during the 2024 Ad Monitoring Exercise. The Denmark IWL was officially added in July 2024 after the Danish Rights Alliance (Rettigheds Alliancen) became a stakeholder in the MoU. However, many of the websites on the Denmark IWL list had already been included in the 2024 Ad Monitoring Exercise based on the criteria identified in Section 2.5. Each of the IWLs analysed in this report (PIPCU, WIPO Italy, WIPO Lithuania, WIPO Spain, Denmark) has websites in common with the others.

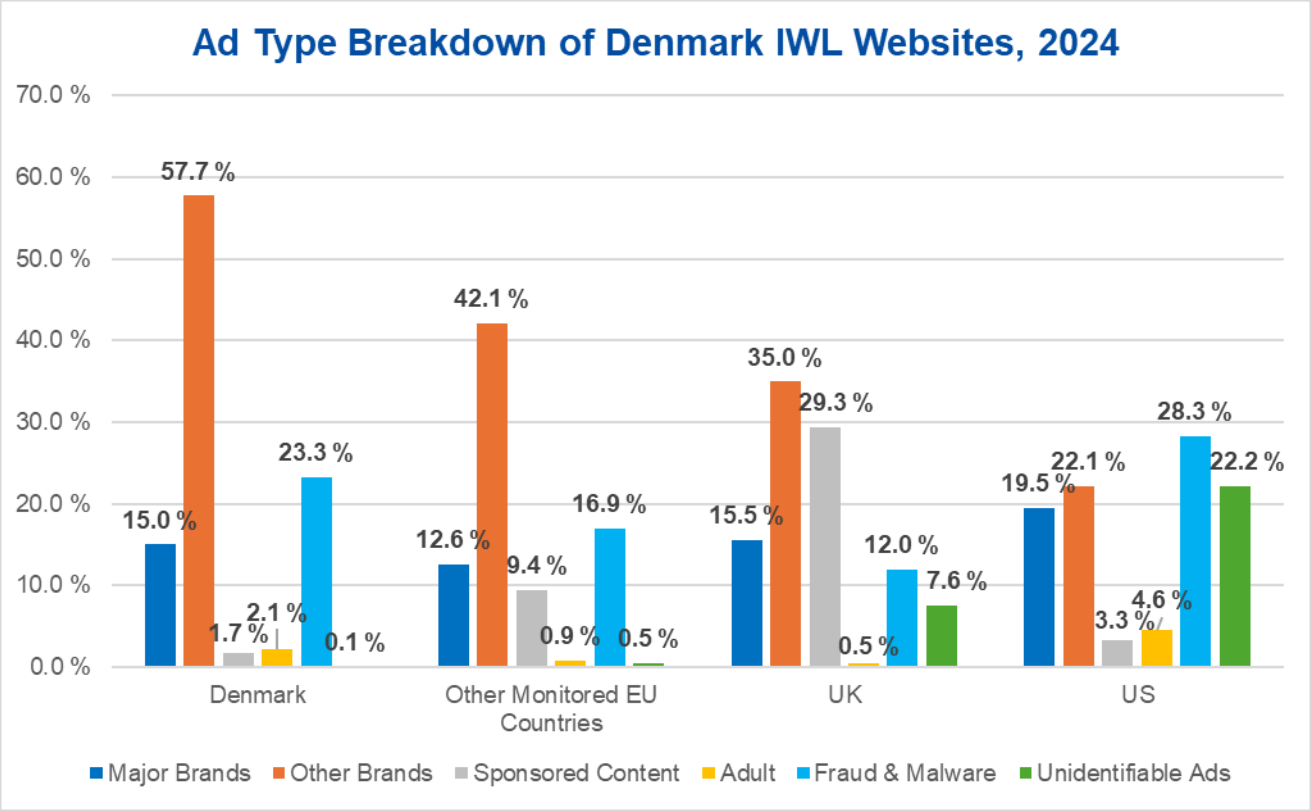


Figure 10: Ad Type breakdown on IWL websites: Denmark IWL
349 active domains analysed

Major Brand advertising was lower on the Denmark IWL websites in Denmark (15 %), the other monitored EU countries (12.6 %), and the control country of the UK (15.5 %) compared to the data shown in Table 6 across all 2024 Monitored Websites (Denmark 20 %, EU median 16 %, UK 27 %). Total Branded Advertising was slightly higher in Denmark on the Denmark IWL websites (72.8 %) than across all 2024 Monitored Websites (71 %).

Fraud & Malware advertising was higher for the Denmark IWL websites for all analysed territories compared to the data shown in Table 6 for the 2024 Monitored Websites. Figure 10 indicates that Fraud & Malware advertising in Denmark was 23.3 % on the Denmark IWL websites, compared to 13 % across all 2024 Monitored Websites shown in Table 6. The other EU Countries had 16.9 % Fraud & Malware advertising on the Denmark IWL Websites, compared to the EU median of 13 % across the 2024 Monitored Websites. The control country of UK had 12 % Fraud & Malware advertising on the Denmark IWL Websites, compared to 11 % across the 2024 Monitored Websites, while the US had 28.3 % Fraud & Malware advertising on the Denmark IWL Websites, but 15 % across the 2024 Monitored Websites.

3.4 Branded Advertising sector analysis

In Q1 and Q2, each ad collected was categorised with a brand name (if identifiable). Starting in Q3, ads were categorised by click-throughs to landing pages to identify advertisers. Both brands and advertisers were classified into Top-level Sector and Sub-sector. For brands, the classification system used was based on the IAB Content Taxonomy. For advertisers, the classification system was based on the IAB Ad Product Taxonomy. Some Top-level Sectors remained the same between these taxonomies, including Gambling. This section focuses solely on the diversity of Top-level Sectors found across Branded Advertising and Major Brands.

3.4.1 Branded Advertising sectors

As shown in Figure 11, the Top-level Sectors for all Branded Advertising in 2024 were Media (23 %), followed by Gambling (15 %), Shopping (11 %), Retail (8 %) and Arts & Entertainment (6 %). Media includes advertisers similar to the brands classified under Arts & Entertainment. Similarly, Shopping includes brands that are similar to advertisers classified under Retail ([42]).

([42]) While there is an overlap between the old and new classification sectors, they are not identical and therefore have not been merged for reporting purposes.

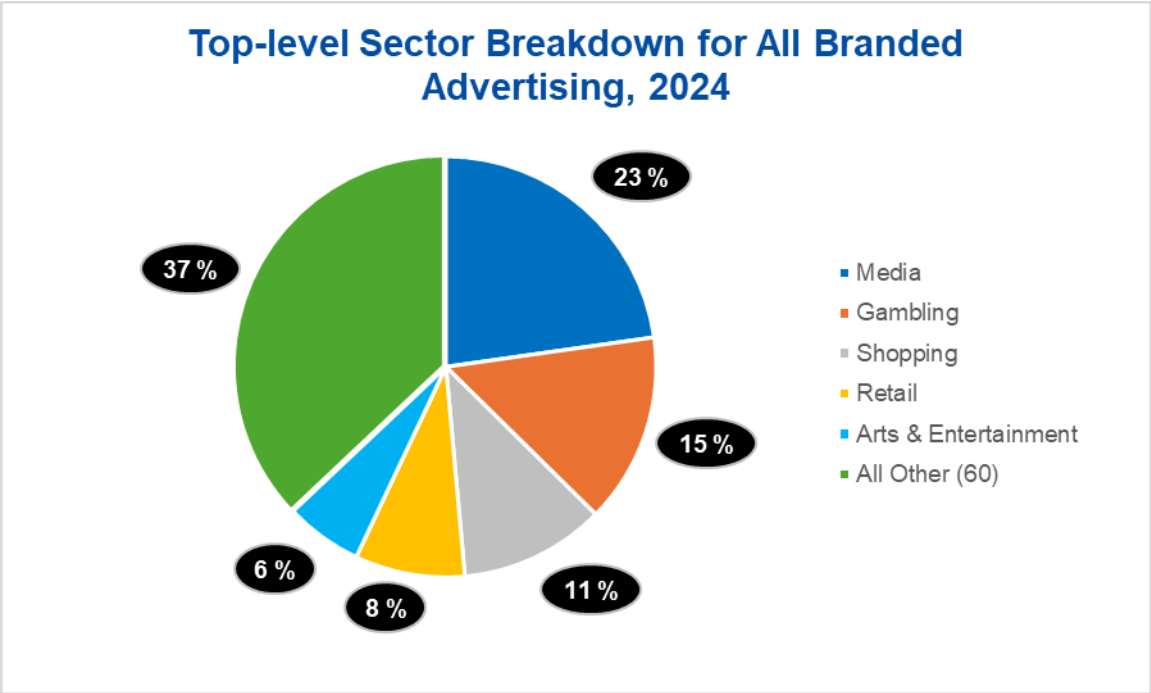
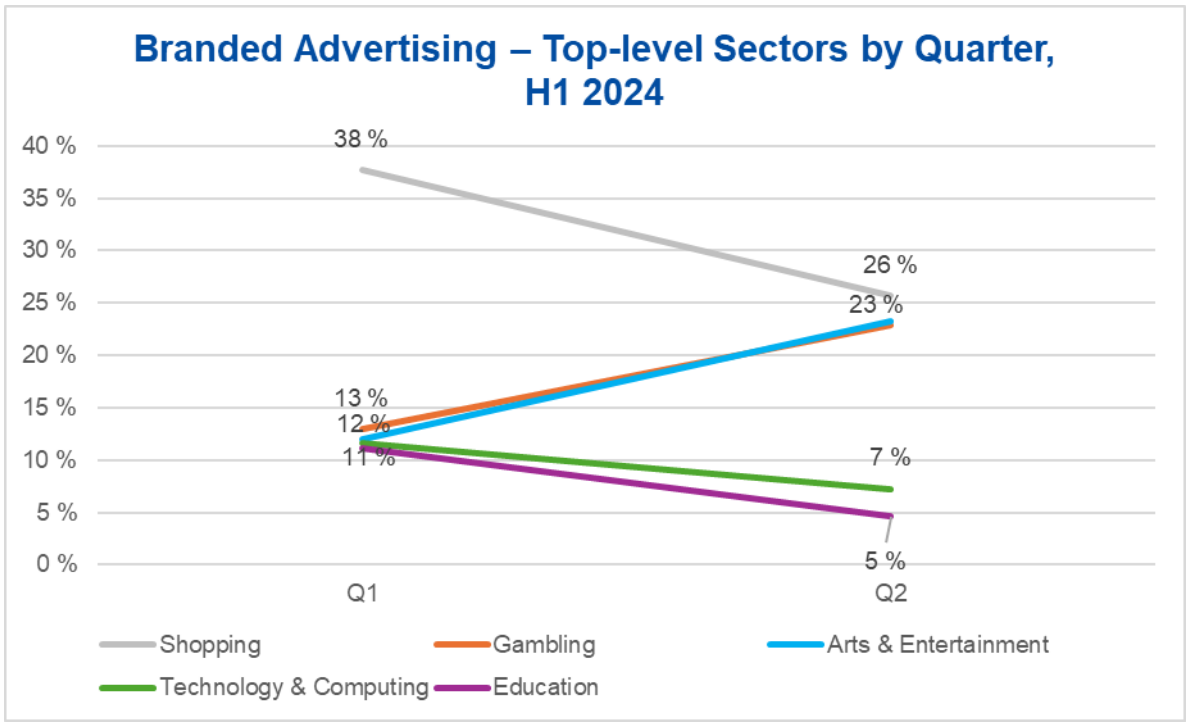


Figure 11: Branded Advertising – Top-level Sector breakdown, 2024 Monitored Websites

Figure 12 shows the changes from quarter to quarter in the Top-level Sectors for all Branded Advertising for each half of the year (H1 & H2), to better focus on the different classification systems. The estimated Ad Impressions for the Shopping sector declined from 38 % in Q1 (coming out of the holiday period) to 26 % in Q2. In contrast, the estimated Ad Impressions for the Gambling sector increased from 13 % in Q1 to 23 % in Q2. The estimated Ad Impressions for the Arts & Entertainment sector also increased in H1, going from 12 % in Q1 to 23 % in Q2. In H2, the Media sector's estimated Ad Impressions increased from 29 % in Q3 to 40 % in Q4. The Gambling sector's estimated Ad Impressions remained steady at 13 % in Q3 and Q4. The Retail sector's estimated Ad Impressions declined slightly from 14 % in Q3 to 12 % in Q4.



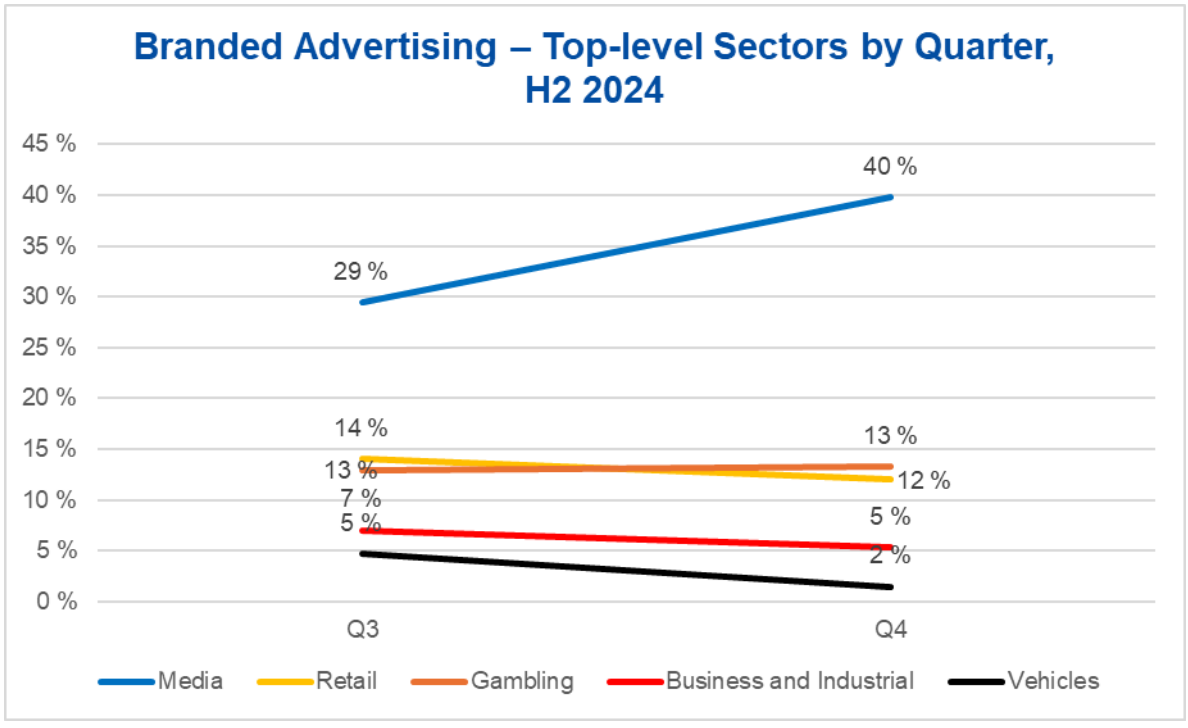


Figure 12: Branded Advertising – Top-level Sector breakdown by quarter in the 2024 Monitoring Exercise – websites

Figure 13 shows the Top-level Sectors for Major Brands in 2024, and Figure 14 shows the changes from quarter to quarter in the Top-level Sectors for Major Brands.

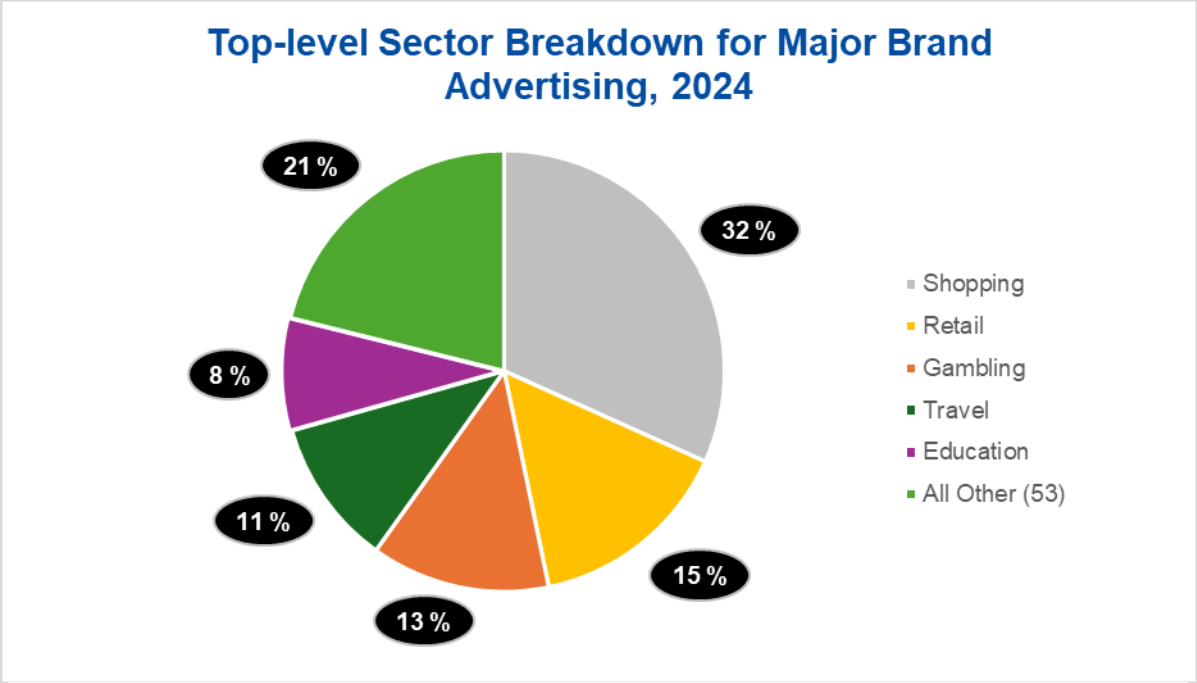


Figure 13: Major Brand advertising – Top-level Sector breakdown, 2024 Monitored Websites

Shopping (32 %) and Retail (15 %) were the top two Major Brand sectors for 2024, together comprising 47 % of the total estimated Ad Impressions for the year for similar classifications. Gambling was the third-ranked sector, with 13 % of estimated Ad Impressions. Travel was the fourth-ranked Major Brand sector with 11 %, followed by Education (8 %).

Figure 14 shows Shopping as the top H1 Major Brand sector, decreasing from 54 % in Q1 to 48 % in Q2. Travel increased from 16 % of estimated Ad Impressions in Q1 to 20 % in Q2. Gambling also increased from 6 % of estimated Ad Impressions to 13 % of estimated Ad Impressions in Q2. In H2, Retail was the top Major Brand sector and increased from 37 % in Q3 to 41 % in Q4. Gambling was the second-ranked Major Brand sector in H2, with 20 % of estimated Ad Impressions in Q3 and 22 % in Q4. Consumer Electronics increased from 5 % in Q3 to 10 % in Q4.

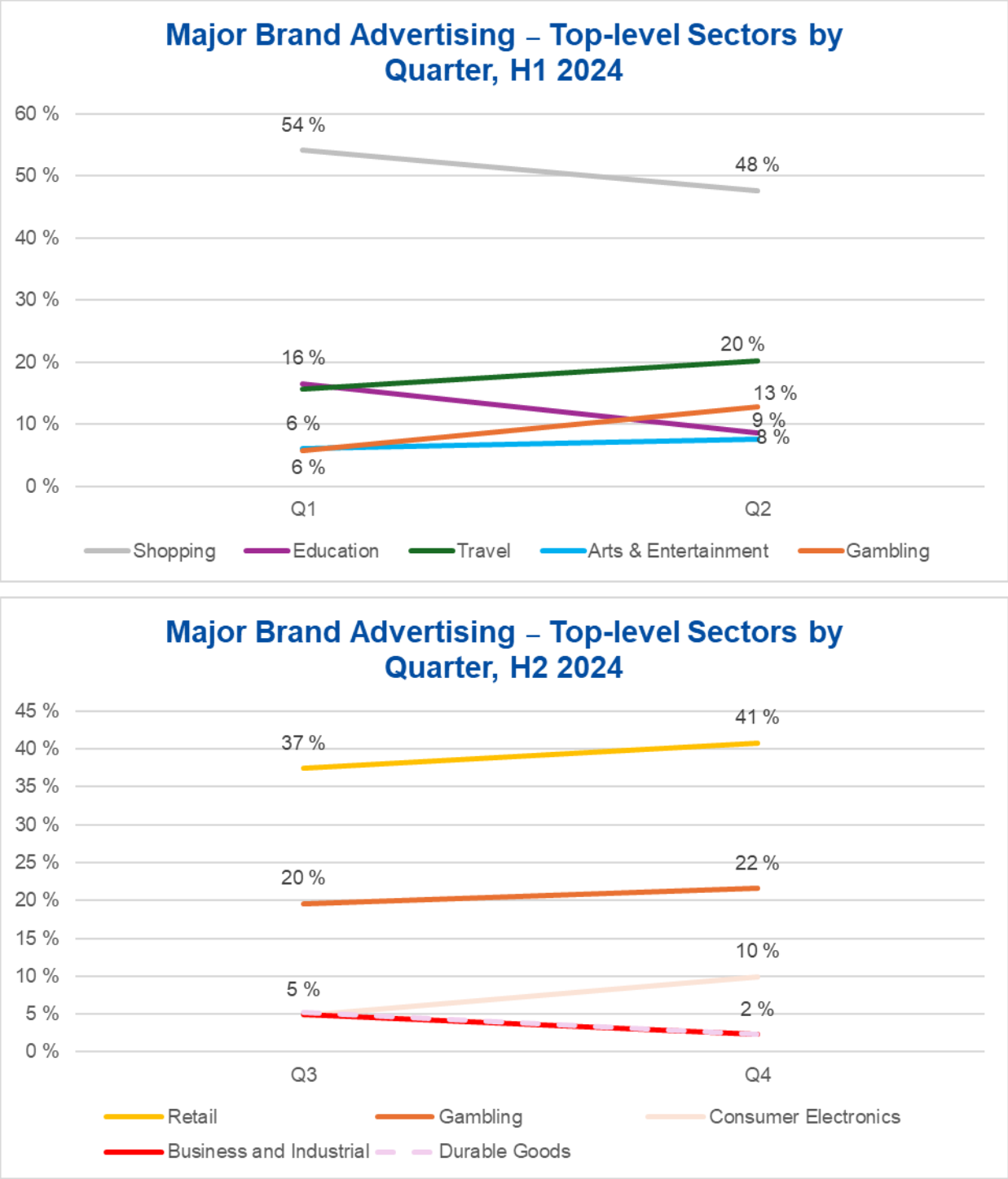


Figure 14: Major Brand advertising – Top-level Sector breakdown by quarter, 2024 Monitored Websites

3.4.2 Top sectors by country

Table 7 shows the most frequently identified top sectors for all Branded Advertising by country in 2024.

The predominant sector in 2024 for Branded Advertising was Media (seven countries, including five EU countries as well as the US and UK) followed by Gambling with six countries. Shopping and Retail each had two countries as the top-ranked sector. Law, Government & Politics was the top sector (16 %) for the Czech Republic, which held elections in 2024 for its regional councils and Senate, as well as for the European Parliament.

	ALL BRANDED ADVERTISING RANK		
COUNTRY	**1**	**2**	**3**
Belgium	Media (24 %)	Gambling (20 %)	Arts & Entertainment (13 %)
Czech Republic	Law, Government & Politics (16 %)	Arts & Entertainment (16 %)	Clothing and Accessories (14 %)
IWL Denmark	Media (33 %)	Gambling (18 %)	Finance and Insurance (7 %)
Estonia	Gambling (48 %)	Media (25 %)	Arts & Entertainment (11 %)
France	Media (22 %)	Retail (16 %)	Shopping (15 %)
Germany	Shopping (17 %)	Gambling (17 %)	Media (16 %)
Hungary	Clothing and Accessories (12 %)	Business and Industrial (12 %)	Health and Medical Services (9 %)
Ireland	Gambling (19 %)	Retail (13 %)	Shopping (13 %)
IWL Italy	Retail (21 %)	Media (17 %)	Shopping (14 %)
IWL Lithuania	Gambling (64 %)	Arts & Entertainment (17 %)	Business and Industrial (6 %)
Malta	Gambling (55 %)	Media (8 %)	Retail (7 %)
Netherlands	Shopping (19 %)	Gambling (17 %)	Media (16 %)
Poland	Gambling (42 %)	Media (18 %)	Arts & Entertainment (16 %)
Portugal	Gambling (48 %)	Arts & Entertainment (23 %)	Shopping (4 %)
Romania	Media (51 %)	Business and Industrial (22 %)	Technology & Computing (13 %)
Slovakia	Media (14 %)	Clothing and Accessories (12 %)	Law, Government & Politics (11 %)
IWL Spain	Shopping (35 %)	Retail (12 %)	Gambling (10 %)
Sweden	Arts & Entertainment (37 %)	Gambling (13 %)	Shopping (10 %)
IWL UK	Media (19 %)	Shopping (14 %)	Gambling (12 %)
US	Media (31 %)	Gambling (12 %)	Retail (10 %)

Table 7: Branded Advertising – Top sectors by country, 2024 Monitored Websites

Table 8 shows the most frequently identified top sectors for all Major Brand advertising by country in 2024.

Shopping and Retail (which are related sectors) were the top-ranked sectors for Major Brand advertising, with 12 EU countries, as well as for the control territories of the UK and US. Gambling was the top-ranked Major Brand sector for two countries (Denmark and Lithuania). The remaining

four countries each had unique top-ranked sectors. Education was the top-ranked Major Brand sector for Belgium; Arts & Entertainment for Poland; Home and Garden Services for Romania; and Computer Software for Slovakia.

	MAJOR BRAND ADVERTISING RANK		
COUNTRY	1	2	3
Belgium	Education (33 %)	Shopping (25 %)	Gambling (18 %)
Czech Republic	Retail (64 %)	Consumer Packaged Goods (6 %)	Automotive (6 %)
IWL Denmark	Gambling (32 %)	Retail (21 %)	Shopping (18 %)
Estonia	Retail (24 %)	Travel (10 %)	Gambling (10 %)
France	Shopping (38 %)	Retail (21 %)	Gambling (13 %)
Germany	Shopping (45 %)	Travel (16 %)	Retail (13 %)
Hungary	Shopping (22 %)	Vehicles (19 %)	Travel and Tourism (10 %)
Ireland	Shopping (38 %)	Retail (31 %)	Arts & Entertainment (17 %)
IWL Italy	Retail (40 %)	Shopping (29 %)	Education (9 %)
IWL Lithuania	Gambling (54 %)	Arts & Entertainment (30 %)	Shopping (7 %)
Malta	Retail (28 %)	Gambling (18 %)	Shopping (15 %)
Netherlands	Shopping (43 %)	Retail (18 %)	Education (12 %)
Poland	Arts & Entertainment (50 %)	Shopping (35 %)	Gambling (7 %)
Portugal	Shopping (34 %)	Retail (16 %)	Gambling (16 %)
Romania	Home and Garden Services (28 %)	Computer Software (22 %)	Retail (6 %)
Slovakia	Computer Software (20 %)	Education and Careers (17 %)	Consumer Electronics (13 %)
IWL Spain	Shopping (52 %)	Retail (15 %)	Consumer Electronics (10 %)
Sweden	Shopping (39 %)	Retail (18 %)	Education (17 %)
IWL UK	Shopping (32 %)	Travel (20 %)	Gambling (18 %)
US	Shopping (19 %)	Gambling (17 %)	Retail (15 %)

Table 8: Major Brand advertising – Top sectors by country, 2024 Monitored Websites

3.5 Brand analysis

This section focuses on ads that can be attributed to a brand/advertiser and excludes analysis for ads categorised as Sponsored Content or Unidentifiable Ads.

3.5.1 Brands by website type

A total of 107 144 unique brands/advertisers were identified from the 2024 Monitored Websites, with 4 520 (4 %) of these being unique Major Brands, as shown in Table 9.

	Q1			Q2			Q3			Q4			Total		
Website Type	% of Websites	Total Brands	Total Major Brands	% of Websites	Total Brands	Total Major Brands	% of Websites	Total Brands	Total Major Brands	% of Websites	Total Brands	Total Major Brands	% of Websites	Total Brands	Total Major Brands
Illegal Websites	44 %	1 021	225	42 %	901	176	43 %	29 954	1 897	43 %	23 312	1 731	44 %	47 052	2 821
High-Risk Websites	56 %	1 408	276	58 %	1 199	224	57 %	59 995	2 883	57 %	48 846	2 632	56 %	92 418	3 979
All 2024 Monitored Websites		**1 642**	**311**		**1 444**	**250**		**69 661**	**3 097**		**56 876**	**2 812**		**107 144**	**4 259**

Table 9: Number of brands by website type, Q1 to Q4 2024

High-Risk Websites had a great diversity of Branded Advertising throughout the 2024 Advertising Exercise, with 86 % of the total unique brands/advertisers identified in 2024 from just 56 % of the websites being monitored. Similarly, 93 % of the unique Major Brands were found on High-Risk Websites in 2024, compared to 66 % on Illegal Websites.

3.5.2 Brands by country and EU source

Table 10 below provides a comparison of the number of unique brands by country found in 2024, along with the percentage of those brands that were either headquartered or had established business operations in at least one EU country ('EU Brands').

Country	Total Brands	EU Brands % of Total
Belgium	20 269	17 %
Czech Republic	20 098	20 %
IWL Denmark	19 701	13 %
Estonia	20 976	9 %
France	18 564	20 %
Germany	20 255	28 %
Hungary	22 428	12 %
Ireland	19 242	14 %
IWL Italy	18 892	21 %
IWL Lithuania	20 638	18 %
Malta	14 132	8 %
Netherlands	17 968	28 %
Poland	22 561	20 %
Portugal	15 084	11 %
Romania	19 250	11 %
Slovakia	21 217	9 %
IWL Spain	18 796	17 %
Sweden	16 685	18 %
EU Median	19 476	16 %
IWL UK	20 361	7 %
US	20 679	5 %

Table 10: Number of brands and percentage of EU Brands by country, 2024 Monitored Websites

Poland had the highest number of unique brands/advertisers found in 2024 (22 561), followed closely by Hungary (22 428) and Slovakia (21 217). Germany and the Netherlands both had the highest percentage of EU Brands found in 2024, with 28 %. Malta had the lowest percentage of EU brands found in 2024, with 8 %.

Both the control countries, the UK (20 361) and the US (20 679), had higher numbers of unique brands than the EU median of 19 476. Both had a significantly lower percentage of EU Brands (UK 7 %, US 5 %) than the EU median of 16 %.

3.6 Ad Intermediary analysis

This section analyses the variation and diversity in the Ad Intermediaries found across all advertising collected from the 2024 Monitored Websites during the 2024 Ad Monitoring Exercise.

Examples of Ad Intermediary types include Ad Exchanges, Ad Networks, Supply-Side Platforms (SSPs) and Demand-Side Platforms (DSPs).

3.6.1 Breakdown of Ad Intermediaries by website type

As shown in Table 11, 2 007 total unique Ad Intermediaries were identified across the 2024 Monitored Websites during the 2024 Ad Monitoring Exercise. The highest total number of unique Ad Intermediaries was found in Q3 (1 150).

	Q1			Q2			Q3			Q4			Total		
Website Type	**% of Websites**	**Ad Intermediary Type**	**Total**	**% of Websites**	**Ad Intermediary Type**	**Total**	**% of Websites**	**Ad Intermediary Type**	**Total**	**% of Websites**	**Ad Intermediary Type**	**Total**	**% of Websites**	**Ad Intermediary Type**	**Total**
Illegal Websites	44 %	Ad Serving	256	42 %	Ad Serving	233	43 %	Ad Serving	218	43 %	Ad Serving	194	44 %	Ad Serving	404
		Ad Tech	346		Ad Tech	294		Ad Tech	368		Ad Tech	330		Ad Tech	571
		Adware	187		Adware	189		Adware	217		Adware	255		Adware	439
		Anonymised Ad Tech	79		Anonymised Ad Tech	73		Anonymised Ad Tech	59		Anonymised Ad Tech	47		Anonymised Ad Tech	126
		Total	**868**		**Total**	**789**		**Total**	**862**		**Total**	**826**		**Total**	**1 540**
High-Risk Websites	56 %	Ad Serving	288	58 %	Ad Serving	252	57 %	Ad Serving	253	57 %	Ad Serving	245	56 %	Ad Serving	465
		Ad Tech	451		Ad Tech	321		Ad Tech	461		Ad Tech	433		Ad Tech	739
		Adware	180		Adware	176		Adware	214		Adware	244		Adware	437
		Anonymised Ad Tech	79		Anonymised Ad Tech	74		Anonymised Ad Tech	58		Anonymised Ad Tech	61		Anonymised Ad Tech	129
		Total	**998**		**Total**	**823**		**Total**	**986**		**Total**	**983**		**Total**	**1 770**
All Monitored Websites		Ad Serving	343		Ad Serving	302		Ad Serving	293		Ad Serving	275		Ad Serving	526
		Ad Tech	519		Ad Tech	409		Ad Tech	529		Ad Tech	481		Ad Tech	827
		Adware	224		Adware	222		Adware	258		Adware	291		Adware	494
		Anonymised Ad Tech	106		Anonymised Ad Tech	98		Anonymised Ad Tech	70		Anonymised Ad Tech	71		Anonymised Ad Tech	160
		Total	**1 192**		**Total**	**1 031**		**Total**	**1 150**		**Total**	**1 118**		**Total**	**2 007**

Table 11: Number of Ad Intermediaries by website type, Q1 to Q4 2024

High-Risk Websites had 15 % more unique Ad Intermediaries (1 770) in the 2024 Ad Monitoring Exercise than Illegal Websites (1 540). High-Risk Websites also had a higher percentage of Ad Tech Ad Intermediaries (42 % of the total) than Illegal Websites (37 % of the total). High-Risk Websites had a lower percentage of Adware Ad Intermediaries (25 % of the total) compared to Illegal Websites (29 % of the total).

3.6.2 Ad Intermediaries by country and EU source

Table 12 below provides a count of unique Ad Intermediaries by country in 2024, along with a percentage of those Ad Intermediaries that were either headquartered or had established business operations in at least one EU country ('EU Ad Intermediaries'). Non-EU Ad Intermediaries include identified Ad Intermediaries with headquarters outside the EU. Unidentifiable Ad Intermediaries are those for which no specific headquarters could be identified.

Poland had the highest count of Ad Intermediaries with 1 462, followed closely by Hungary (1 419) and Belgium (1 416). Malta had the lowest count with 1 237. Both the number of UK Ad Intermediaries (1 403) and US Ad Intermediaries (1 366) were above the EU median of 1 357.

Poland had the highest percentage of EU Ad Intermediaries in 2024 with 14 %, and Malta was lowest with 11 %. The EU median for EU Ad Intermediaries was 13 %.

Country	Total Ad Intermediaries	EU Ad Intermediaries % of Total	Non-EU Ad Intermediaries % of Total	Unidentifiable Ad Intermediaries % of Total
Belgium	1 416	13 %	18 %	69 %
Czech Republic	1 393	13 %	16 %	70 %
IWL Denmark	1 319	12 %	16 %	72 %
Estonia	1 394	13 %	18 %	70 %
France	1 353	13 %	17 %	70 %
Germany	1 360	13 %	16 %	71 %
Hungary	1 419	13 %	17 %	70 %
Ireland	1 376	13 %	18 %	70 %
IWL Italy	1 323	13 %	16 %	71 %
IWL Lithuania	1 348	13 %	18 %	69 %
Malta	1 237	11 %	15 %	73 %
Netherlands	1 250	12 %	16 %	71 %
Poland	1 462	14 %	17 %	69 %
Portugal	1 335	12 %	16 %	73 %
Romania	1 369	13 %	17 %	70 %
Slovakia	1 362	13 %	17 %	70 %
IWL Spain	1 354	12 %	16 %	71 %
Sweden	1 286	13 %	16 %	72 %
EU Median	1 357	13 %	17 %	70 %
IWL UK	1 403	12 %	18 %	70 %
US	1 366	12 %	19 %	69 %

Table 12: Number of Ad Intermediaries and percentage of EU Ad Intermediaries by country, 2024 Monitored Websites

3.7 Estimated ad revenue analysis

This section analyses the variation in potential ad revenue generated by the 2024 Monitored Websites in 2024. The estimated ad revenue figures are given in euro.

Table 13 shows the breakdown of the potential ad revenue generated by the 2024 Monitored Websites during calendar year 2024. Worldwide, the potential ad revenue generated by the 2024 Monitored Websites was estimated to be EUR 241.98 million for calendar year 2024. In the 18 monitored EU countries alone, the potential ad revenue generated totalled EUR 21.98 million for calendar year 2024.

COUNTRY	Est. Ad Revenue (EUR)
Belgium	265 071
Czech Republic	176 884
IWL Denmark	301 145
Estonia	2 945
France	4 079 235
Germany	8 749 818
Hungary	589 334
Ireland	65 283
IWL Italy	1 361 920
IWL Lithuania	115 580
Malta	3 218
Netherlands	1 602 873
Poland	1 364 520
Portugal	67 475
Romania	586 835
Slovakia	132 261
IWL Spain	1 315 993
Sweden	1 203 027
EU Median	443 990
Subtotal Monitored Countries	*21 983 418*
IWL UK	17 585 558
US	99 582 841
Rest of World	102 828 858
Total Worldwide	**241 980 674**

Table 13: Estimated ad revenue generated by the 2024 Monitored Websites by country

Germany (EUR 8.7 million) and France (EUR 4.1 million) were the top EU countries for estimated revenue generated by the 2024 Monitored Websites, each considerably above the median of EUR 0.44 million. These two were also the among the top-ranked European markets for digital ad spend according to IAB Europe ([43]). Five other top-ranked EU countries also showed estimated ad

([43]) See footnote 33.

revenues generated by the 2024 Monitored Websites greater than EUR 1 million: the Netherlands (EUR 1.6 million), Poland (EUR 1 364 million), Italy (EUR 1 361 million), Spain (EUR 1.3 million), and Sweden (EUR 1.2 million).

The US market was estimated to generate the highest potential ad revenue for the 2024 Monitored Websites (around EUR 99.58 million); this is not surprising, as the US digital ad spend is 2.5 times higher than that of Europe ([44]). The UK was estimated to have generated EUR 17 586 million.

([44]) See footnote 33.

4 Analyses of the 2024 Ad Monitoring Exercise – app monitoring

4.1 2024 Ad Monitoring Overview – app monitoring

4.1.1 Overview of 2024 Ad Monitoring Exercise results – apps

An initial 371 mobile apps passed the selection criteria (see Section 2.5 above) and were included in the initial monitoring pool on 1 January 2024. Illegal Apps accounted for 57 % of the 2024 Monitored Apps at the start of the app monitoring component of the 2024 Ad Monitoring Exercise, while High-Risk Apps accounted for 43 %.

The number of apps monitored through the 2024 Ad Monitoring Exercise fluctuated, reflecting changes made to incorporate any new IP-infringing apps added to the Pirate Mobile App List, as well as the removal of apps that stopped delivering ads during the 2024 Ad Monitoring Exercise. New High-Risk Apps that were identified during the 2024 Ad Monitoring Exercise and passed the selection criteria were also added for monitoring. High-Risk Apps that were verified as no longer infringing were removed.

As shown in Table 14 below, the updates to the 2024 Monitored Apps resulted in a total of 398 apps being monitored by the end of the 2024 Ad Monitoring Exercise, a net increase of 27 apps since the beginning of the app monitoring period. Illegal Apps accounted for 60 % of the 2024 Monitored Apps, while High-Risk Apps accounted for 40 % of the 2024 Monitored Apps by the end of the monitoring period.

2024	TOTAL APPS	ANNUAL GLOBAL EST. AD IMPRESSIONS	ANNUAL GLOBAL EST. AD REVENUE
Illegal Apps	239 (60 %)	2.2B (54 %)	EUR 15.5M (69 %)
High-Risk Apps	159 (40 %)	1.8B (46 %)	EUR 7.0M (31 %)
2024 Monitored Apps	**398**	**4.0B**	**EUR 22.5M**

Table 14: 2024 Ad Monitoring Exercise overview – app monitoring

A total of 4 billion estimated Ad Impressions were collected from the 2024 Monitored Apps during the 2024 Monitoring Exercise, with 54 % collected from Illegal Apps and 46 % from High-Risk Apps. The 2024 Monitored Apps had an estimated ad revenue of EUR 22.5 million worldwide during calendar year 2024. Illegal Apps had an estimated ad revenue of EUR 15.5 million worldwide, while High-Risk Apps had an estimated ad revenue of EUR 7.0 million worldwide for calendar year 2024.

4.2 Estimated Ad Impression analysis

4.2.1 Total estimated Ad Impressions

Estimated Ad Impressions are calculated by extrapolating advertising data harvested by White Bullet's Ad Monitoring System with download data on the 2024 Monitored Apps obtained from app stores providing the APKs, along with a proprietary algorithm incorporating estimates for user sessions based on third-party data. The app download data obtained from app stores is generally not specific to countries, and therefore the estimated Ad Impressions for apps provided in this report are global figures rather than country specific.

As shown in Figure 15, estimated Ad Impressions across all 2024 Monitored Apps increased slightly from Q1 (1 122 million) to Q2 (1 155 million). Thereafter, total estimated Ad Impressions decreased in Q3 (902 million) and Q4 (813 million). Illegal Apps saw the largest percentage decrease in estimated Ad Impressions from Q1 to Q4 (36 %), while High-Risk Apps saw a decrease of 16.5 %.

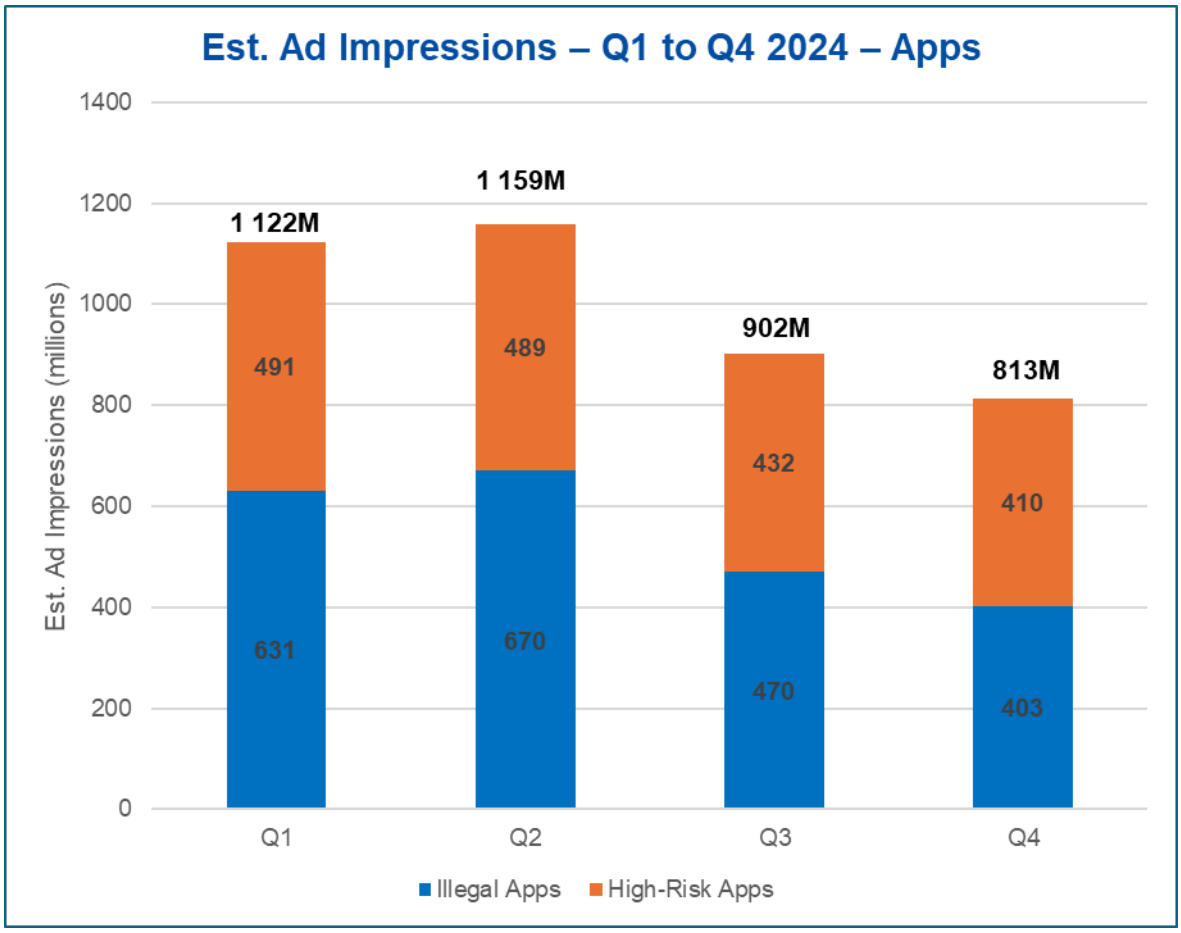


Figure 15: Estimated Ad Impressions – Q1 to Q4 2024 – 2024 Monitored Apps

4.3 Ad Type analysis

The Ad Type analysis for the 2024 Monitored Apps used the five categories of Ad Types described in Section 3.3.1 above. Notably, virtually no Sponsored Content or Adult advertising was found in app advertising during the 2024 Ad Monitoring Exercise.

4.3.1 Branded Advertising – app monitoring

As with IP-infringing websites, the presence of recognisable Branded Advertising on IP-infringing apps may lead consumers to mistakenly believe they are accessing a reputable app. In addition,

misplaced Branded Advertising inadvertently funds illicit activity and damages brand equity, associating brands with high-risk content.

Figure 16 analyses the estimated Ad Impressions extrapolated from the ads collected from the 2024 Monitored Apps, with breakdowns by Ad Type and app type.

Across all 2024 Monitored Apps, Branded Advertising represented 88 % of estimated Ad Impressions. The estimated Ad Impressions for Major Brands was highest on High-Risk Apps at 8 % of estimated Ad Impressions compared to 6 % on Illegal Apps. However, Branded Advertising was slightly higher on Illegal Apps at 89 %, compared to 88 % on High-Risk Apps.

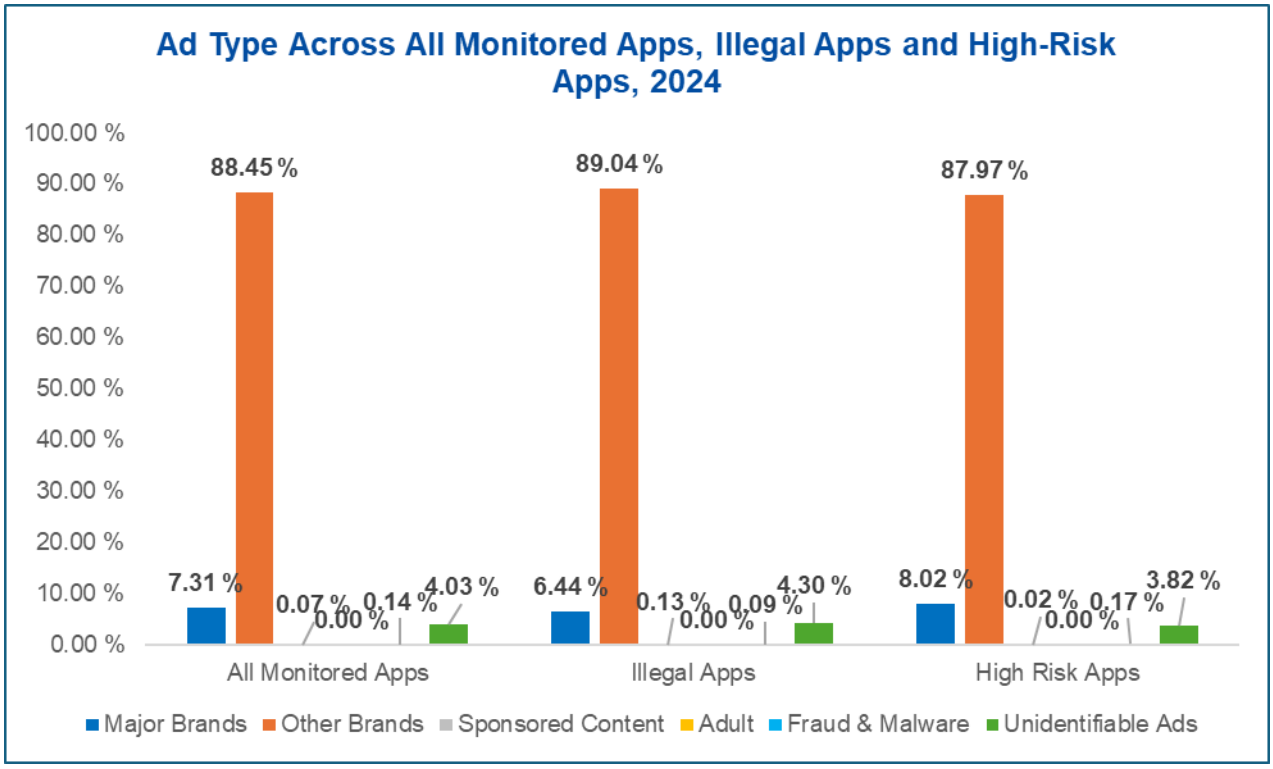


Figure 16: Ad Type across all Monitored Apps, Illegal Apps and High-Risk Apps, 2024

Figure 17 provides a comparison of Ad Type percentages across all 2024 Monitored Apps by quarter, while Figure 18 provides a comparison of Ad Type percentages by quarter for Illegal Websites and High-Risk Websites.

The estimated Ad Impressions for Branded Advertising across all Monitored Apps was fairly consistently across quarters with a high of 97 % in Q2. Estimated Major Brand advertising Ad Impressions more than doubled from Q1 (5.62 %) to Q4 (11.84 %).

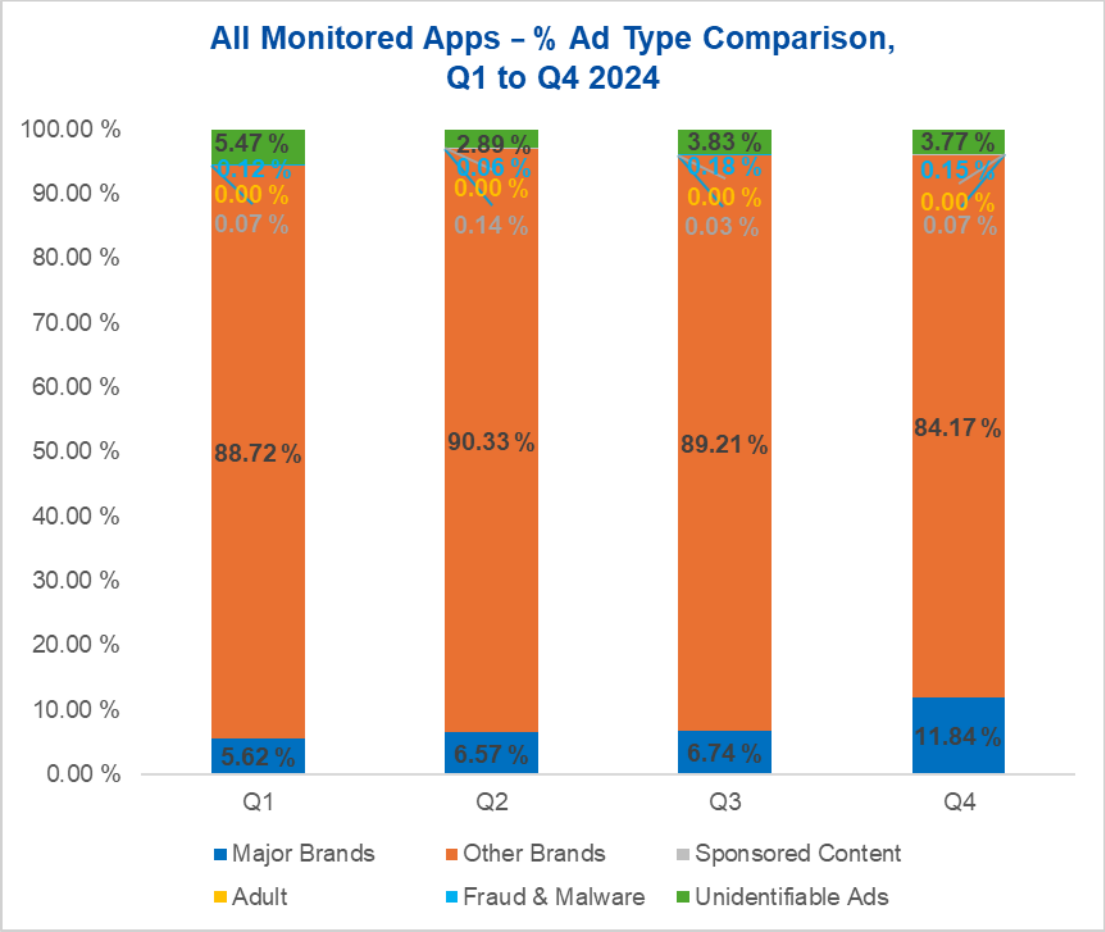
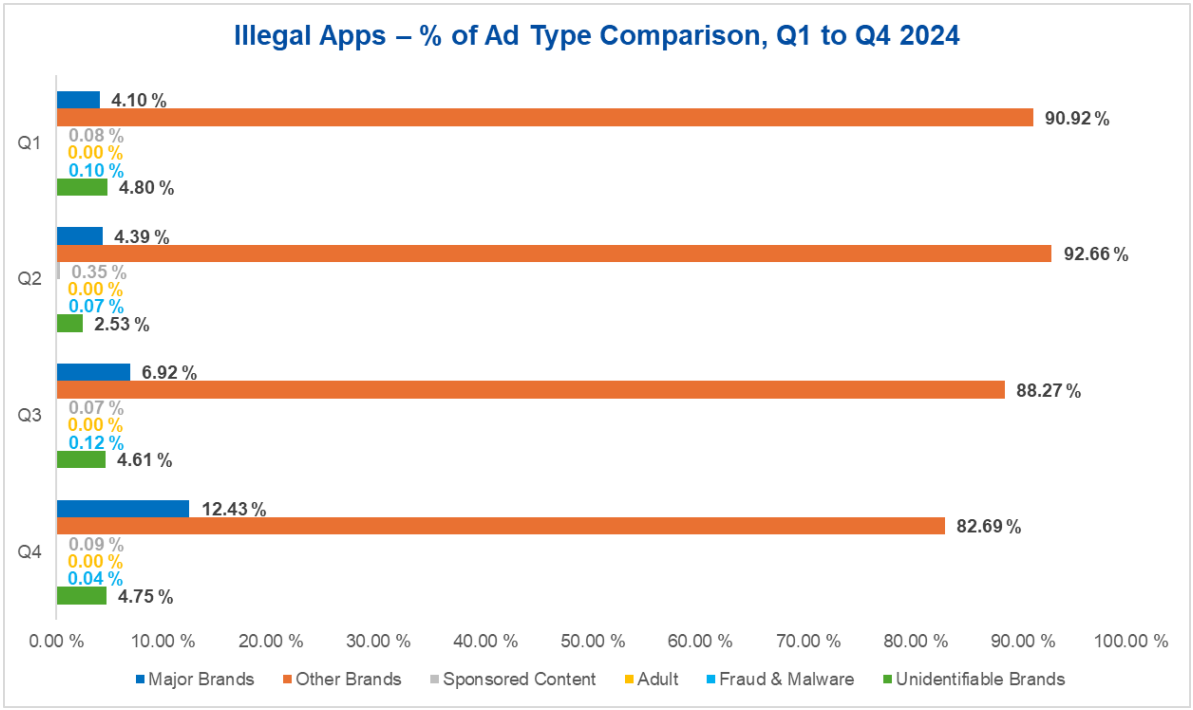


Figure 17: Ad Type comparison – Q1 to Q4 2024, all monitored apps

As shown in Figure 18 below, Major Brand advertising on Illegal Apps increased 67 % from Q1 (4.1 %) to Q4 (12.43 %). Total Branded Advertising was around 95 % in all quarters, except for an increase to 97 % in Q2.

Branded advertising on High-Risk Apps was slightly lower than on Illegal Apps in Q1 (93.4 %) and Q2 (96.8 %), but higher than on Illegal Apps in Q3 (96.4 %) and Q4 (96.7 %). The percentage of estimated Ad Impressions for Major Brand advertising was higher for High-Risk Apps than for Illegal Apps in Q1 and Q2, but lower in Q3 and Q4. Major Brand advertising on High-Risk Apps was lowest in Q3 (6.63 %) but increased by 3.5 % from Q1 (7.81 %) to Q4 (11.39 %).



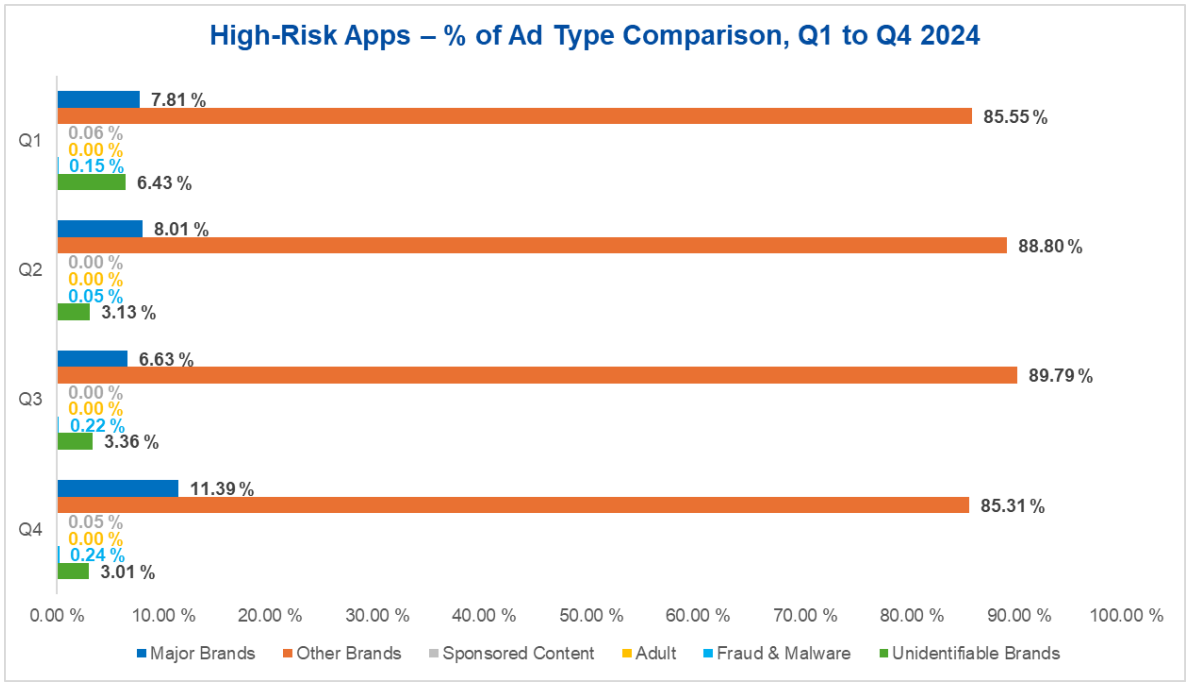


Figure 18: Ad Type comparison – Q1 to Q4 2024, Illegal and High-Risk Apps

4.3.2 Sponsored Content, Adult and Fraud & Malware advertising

Very low levels of Sponsored Content advertising were found on the 2024 Monitored Apps during the 2024 Ad Monitoring Exercise, representing less than 0.07 % of total estimated Ad Impressions, as shown in Figure 16. Sponsored Content advertising was highest on Illegal Apps with 0.13 %, compared to just 0.02 % on High-Risk Apps.

Adult advertising was almost non-existent, resulting in 0 % of estimated Ad Impressions on both Illegal Apps and High-Risk Apps ([45]).

The percentage of estimated Ad Impressions for Fraud & Malware was 0.14 % across all 2024 Monitored Apps for the 2024 Ad Monitoring Exercise, and increased 27 % from Q1 (0.12 %) to Q4 (0.15 %). Fraud & Malware advertising was highest across all 2024 Monitored Apps in Q3 (0.18 %). The percentage of estimated Ad Impressions for Fraud & Malware was slightly higher on High-Risk Apps (0.17 %) than on Illegal Apps (0.09 %) for the 2024 Ad Monitoring Exercise.

([45]) A total of four adult ads were collected from the 2024 Monitored Apps, all during Q2.

4.3.3 Ad Type by country

Table 15 shows the proportion of Ad Types by country across all 2024 Monitored Apps in 2024.

COUNTRY	% MAJOR BRANDS	% OTHER BRANDS	% TOTAL BRANDED ADVERTISING	% SPONSORED CONTENT	% FRAUD & MALWARE	% ADULT	% UNIDENTIFIABLE ADS
Belgium	6.34 %	89.21 %	95.56 %	0.02 %	0.18 %	0.00 %	4.24 %
Czech Republic	6.14 %	89.87 %	96.01 %	0.02 %	0.13 %	0.00 %	3.83 %
Denmark	10.02 %	87.27 %	97.28 %	0.04 %	0.07 %	0.00 %	2.61 %
Estonia	5.03 %	91.85 %	96.88 %	0.07 %	0.08 %	0.00 %	2.98 %
France	9.95 %	87.20 %	97.15 %	0.05 %	0.17 %	0.00 %	2.63 %
Germany	5.85 %	92.03 %	97.88 %	0.03 %	0.05 %	0.00 %	2.05 %
Hungary	6.98 %	89.76 %	96.74 %	0.06 %	0.07 %	0.00 %	3.13 %
Ireland	4.56 %	92.10 %	96.66 %	0.06 %	0.07 %	0.00 %	3.20 %
Italy	8.27 %	89.02 %	97.29 %	0.09 %	0.06 %	0.00 %	2.56 %
Lithuania	1.43 %	95.73 %	97.16 %	0.04 %	0.10 %	0.00 %	2.70 %
Malta	9.26 %	87.16 %	96.42 %	0.04 %	0.11 %	0.00 %	3.43 %
Netherlands	3.09 %	93.54 %	96.63 %	0.06 %	0.10 %	0.00 %	3.21 %
Poland	8.86 %	84.18 %	93.04 %	0.09 %	0.06 %	0.00 %	6.80 %
Portugal	8.63 %	86.65 %	95.28 %	0.09 %	0.19 %	0.00 %	4.44 %
Romania	5.70 %	80.74 %	86.45 %	0.20 %	0.34 %	0.00 %	13.01 %
Slovakia	9.61 %	86.11 %	95.72 %	0.13 %	0.16 %	0.00 %	3.99 %
Spain	7.99 %	88.36 %	96.35 %	0.04 %	0.19 %	0.00 %	3.42 %
Sweden	8.34 %	87.06 %	95.40 %	0.05 %	0.18 %	0.00 %	4.37 %
EU Median	7.49 %	88.69 %	96.52 %	0.05 %	0.10 %	0.00 %	3.31 %
UK	8.13 %	89.42 %	97.55 %	0.06 %	0.07 %	0.00 %	2.32 %
US	16.04 %	79.14 %	95.18 %	0.13 %	0.38 %	0.00 %	4.31 %

Table 15: Ad Types by country, 2024 Ad Monitoring Exercise – apps

Five countries had estimated Ad Impressions for Brand Advertising greater than 97 %, above the EU median of 96.52 %. These countries were Denmark (97.28 %), France (97.15 %), Germany (97.88 %), Italy (97.29 %), and Lithuania (97.16 %). The UK, a control country, was also above the EU median with 97.55 % of estimated Ad Impressions for Branded Advertising, while the US was below, with 95.18 %.

Denmark had the highest levels of estimated Ad Impressions for Major Brands among the monitored EU countries at 10.02 %, followed by France at 9.95 %. Lithuania had the lowest level of Major Brand advertising with just 1.43 %, well below the EU median of 7.49 %. Estimated Ad Impressions for Major Brand advertising were higher than the EU median in both control countries, with 8.13 % for the UK and 16.04 % for the US.

4.4 Branded Advertising sector analysis

Each ad collected was categorised with a brand name (if identifiable), Top-level Sector and Sub-sector. 'Top-level Sector' refers to the wider industry in which the relevant brand operates, while 'Sub-sector' denotes a specific part of that industry ([46]). This section focuses solely on the diversity of Top-level Sectors found across Branded Advertising and Major Brands collected from the 2024 Monitored Apps.

4.4.1 Branded Advertising sectors

As shown in Figure 19, the Top-level Sectors for all Branded Advertising for Apps in 2024 were Arts & Entertainment (45 %), followed by Technology & Computing (39 %), Personal Finance (4 %), Business (3 %) and Gambling (1 %).

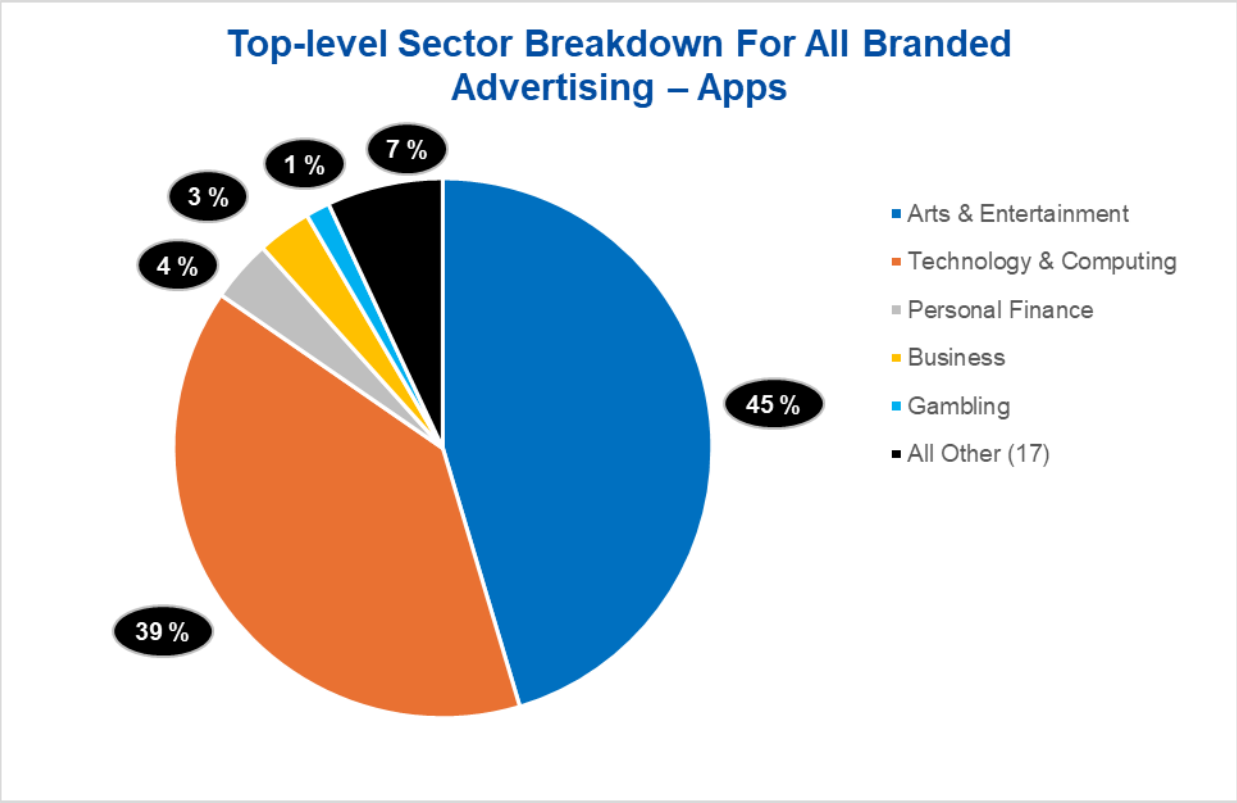


Figure 19: Branded Advertising – Top-level Sector breakdown, 2024 Monitored Apps

([46]) In 2024, the in-app brands continued to be classified using the IAB Content Taxonomy rather than the IAB Ad Product Taxonomy. See the discussion in Section 2.3.

Figure 20 shows the changes from quarter to quarter in the Top-level Sectors for all Branded Advertising. Technology & Computing decreased by 28 % from 49 % of estimated Ad Impressions in Q1 to 29 % in Q4. Estimated Ad Impressions for Arts & Entertainment increased by 28 % from Q1 (38 %) to Q4 (49 %), with a high of 51 % in Q3. Personal Finance was the third-ranked sector in all quarters, with a high of 6 % of estimated Ad Impressions in Q4. Business increased from 2 % in Q1 and Q2 to 4 % in Q3 and 5 % in Q4. Estimated Ad Impressions for Gambling varied between 1 % (Q1, Q3) and 2 % (Q2, Q4). Travel had just 1 % of estimated Ad Impressions in Q1-Q3 but increased to 2 % in Q4.

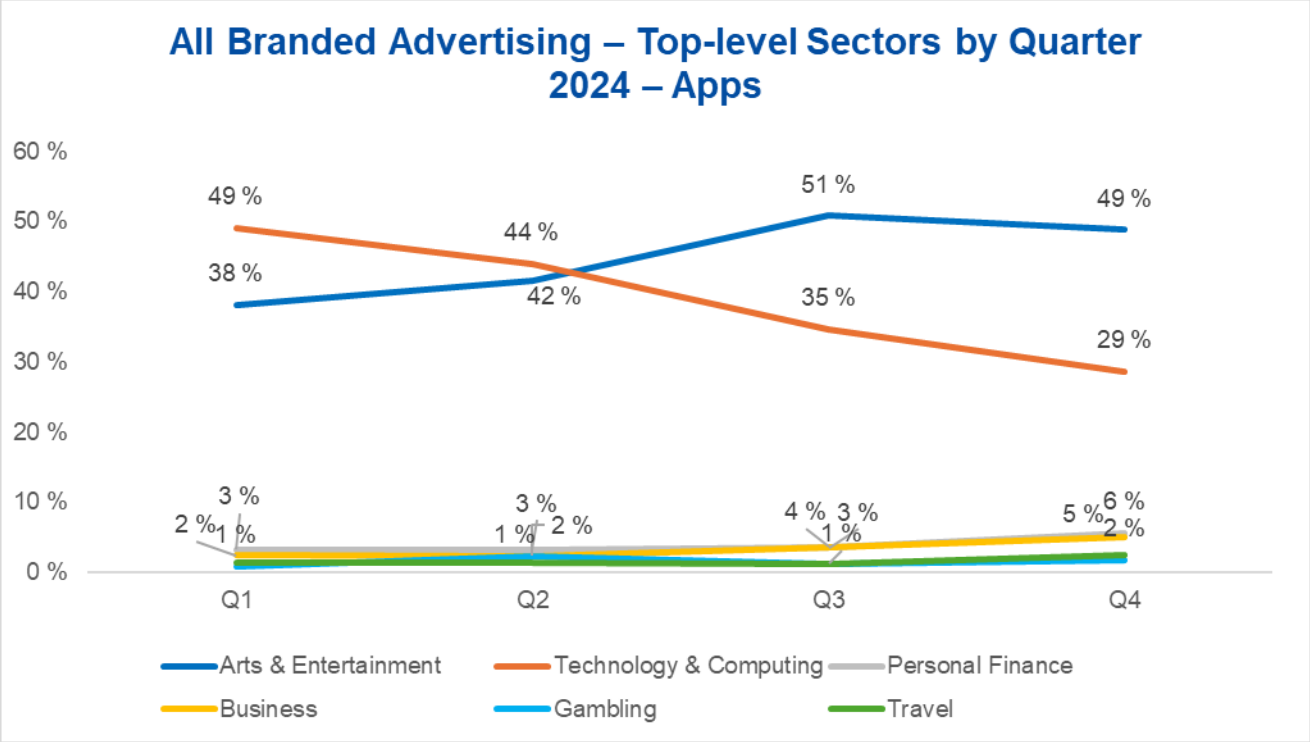


Figure 20: Branded Advertising – Top-level Sector breakdown by quarter, 2024 Ad Monitoring Exercise – apps

Figure 21 shows the Top-level Sectors for Major Brands in 2024 for Apps, and Figure 22 shows the changes from quarter to quarter in the Top-level Sectors for Major Brands.

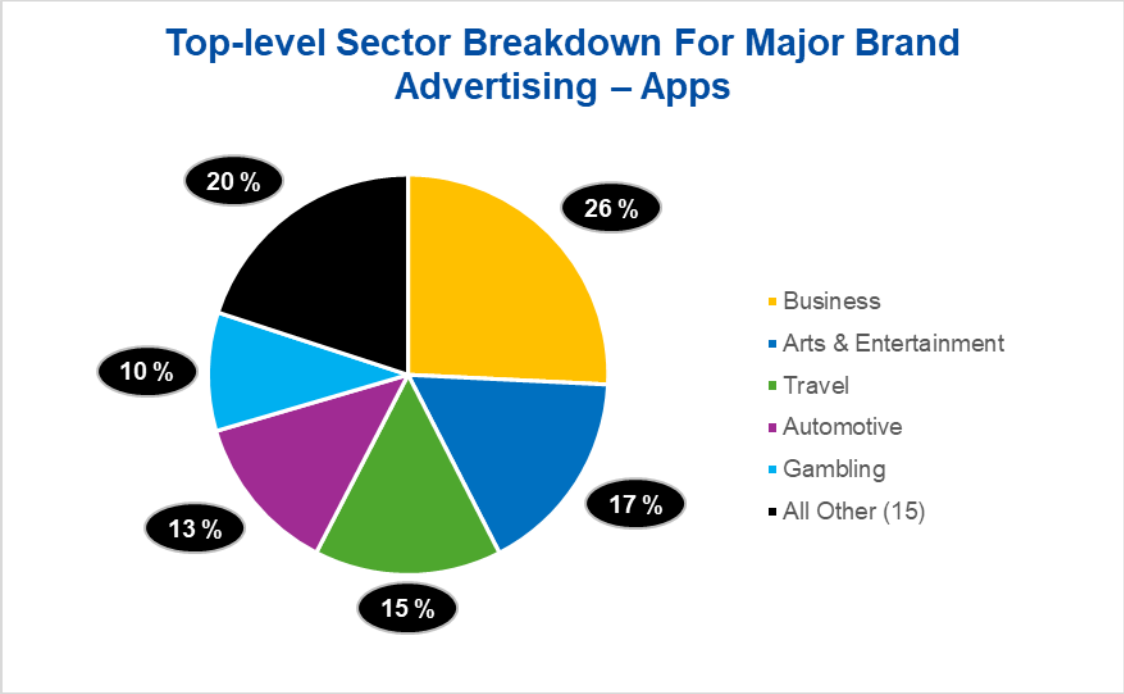


Figure 21: Major Brand advertising – Top-level Sector breakdown, 2024 Ad Monitoring Exercise – apps

Unlike the sector analysis for all Branded Advertising for Apps shown in Figure 19, Business was the top-ranked sector for Major Brand advertising with 26 % of estimated Ad Impressions. Arts & Entertainment was in second place overall for the year with 17 %, followed by Travel (15 %), Automotive (13 %), and Gambling (10 %). The top five sectors for Major Brand advertising comprised 80 % of total estimated Ad Impressions, compared to the top five sectors of Branded Advertising shown in Figure 19, which comprised 93 % of the total estimated Ad Impressions. Major Brand advertising also had a slightly greater diversity of Top-level Sectors (25) compared to Branded Advertising (22).

As shown in Figure 22 below, the percentages for the top two sectors varied from quarter to quarter. Business began at 34 % of estimated Ad Impressions in Q1 but dropped 66 % to 12 % in Q2 before rising again to 30 % by Q4. Arts & Entertainment had just 2 % of estimated Major Brand Ad Impressions in Q1, but increased to 30 % by Q3 before dropping again to 9 % in Q4. Travel had 18 % in Q1 and Q2, decreased to 12 % in Q3, and increased to 15 % in Q4. Automotive decreased from a high in Q1 (16 % of estimated Ad Impressions) to Q4 (15 %). Gambling was highest in Q2

(14 % of estimated Ad Impressions) and lowest in Q3 (8 %). Similarly, Shopping had its highest estimated Ad Impressions in Q2 (8 %) and its lowest in Q3 (4 %).

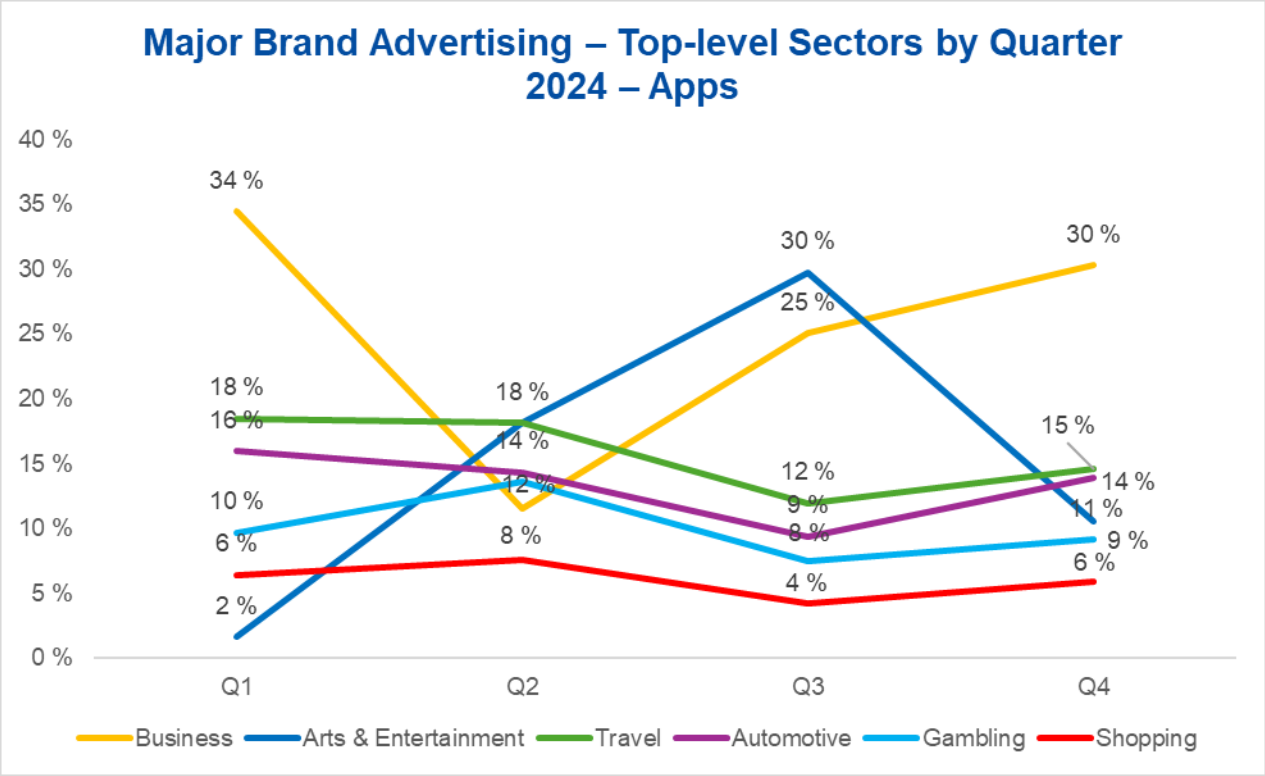


Figure 22: Major Brand advertising – Top-level Sectors by quarter, 2024 Ad Monitoring Exercise – apps

4.4.2 Top sectors by country

Table 16 shows the most frequently identified top sectors for Branded Advertising for apps by country in 2024.

The top sector in 2024 for Branded Advertising in the 2024 Monitored Apps was Arts & Entertainment with nine monitored EU countries, as well as the control countries of the US and UK. Technology & Computing was the second sector with nine countries.

	ALL BRANDED ADVERTISING RANK – APPS		
COUNTRY	1	2	3
Belgium	Arts & Entertainment (47 %)	Technology & Computing (40 %)	Personal Finance (5 %)
Czech Republic	Technology & Computing (51 %)	Arts & Entertainment (40 %)	Personal Finance (3 %)
Denmark	Arts & Entertainment (49 %)	Technology & Computing (38 %)	Business (4 %)
Estonia	Technology & Computing (46 %)	Arts & Entertainment (32 %)	Personal Finance (8 %)
France	Arts & Entertainment (67 %)	Technology & Computing (17 %)	Business (3 %)
Germany	Arts & Entertainment (65 %)	Technology & Computing (19 %)	Business (6 %)
Hungary	Technology & Computing (44 %)	Arts & Entertainment (36 %)	Personal Finance (6 %)
Ireland	Technology & Computing (54 %)	Arts & Entertainment (39 %)	Society (2 %)
Italy	Arts & Entertainment (58 %)	Technology & Computing (24 %)	Personal Finance (6 %)
Lithuania	Technology & Computing (50 %)	Arts & Entertainment (43 %)	Personal Finance (3 %)
Malta	Technology & Computing (48 %)	Arts & Entertainment (35 %)	Travel (9 %)
Netherlands	Arts & Entertainment (51 %)	Technology & Computing (39 %)	Business (3 %)
Poland	Technology & Computing (45 %)	Arts & Entertainment (34 %)	Personal Finance (5 %)
Portugal	Technology & Computing (52 %)	Arts & Entertainment (33 %)	Personal Finance (3 %)
Romania	Arts & Entertainment (45 %)	Technology & Computing (40 %)	Business (4 %)
Slovakia	Technology & Computing (47 %)	Arts & Entertainment (37 %)	Business (4 %)
Spain	Arts & Entertainment (44 %)	Technology & Computing (41 %)	Personal Finance (4 %)
Sweden	Arts & Entertainment (52 %)	Technology & Computing (33 %)	Personal Finance (4 %)
UK	Arts & Entertainment (60 %)	Technology & Computing (18 %)	Business (7 %)
US	Arts & Entertainment (56 %)	Technology & Computing (15 %)	Business (12 %)

Table 16: Branded Advertising – Top sectors by country, 2024 Ad Monitoring Exercise – apps

As shown in Table 17 below, Business was the top-ranked Major Brand sector for Apps for seven countries (Denmark, Estonia, Hungary, Lithuania, Poland, Romania, and Slovakia) as well as the control territory of the US. Arts & Entertainment was the top-ranked sector for six countries (Belgium, Czech Republic, France, Ireland, the Netherlands, and Spain) as well as the control territory of the

UK. Germany and Sweden had Automotive as the top-ranked sector, while Italy had Shopping, Malta had Travel, and Portugal had Gambling.

	MAJOR BRAND ADVERTISING RANK – APPS		
COUNTRY	1	2	3
Belgium	Arts & Entertainment (35 %)	Automotive (23 %)	Business (13 %)
Czech Republic	Arts & Entertainment (29 %)	Travel (24 %)	Personal Finance (23 %)
Denmark	Business (37 %)	Automotive (20 %)	Arts & Entertainment (19 %)
Estonia	Business (60 %)	Personal Finance (10 %)	Technology & Computing (8 %)
France	Arts & Entertainment (25 %)	Travel (17 %)	Shopping (16 %)
Germany	Automotive (20 %)	Arts & Entertainment (19 %)	Style & Fashion (15 %)
Hungary	Business (51 %)	Arts & Entertainment (22 %)	Sports (10 %)
Ireland	Arts & Entertainment (48 %)	Automotive (21 %)	Business (13 %)
Italy	Shopping (30 %)	Automotive (20 %)	Travel (16 %)
Lithuania	Business (79 %)	Technology & Computing (6 %)	Gambling (4 %)
Malta	Travel (90 %)	Business (7 %)	Home & Garden (1 %)
Netherlands	Arts & Entertainment (40 %)	Automotive (34 %)	Travel (6 %)
Poland	Business (30 %)	Arts & Entertainment (18 %)	Travel (13 %)
Portugal	Gambling (30 %)	Business (27 %)	Travel (17 %)
Romania	Business (65 %)	Automotive (12 %)	Shopping (9 %)
Slovakia	Business (40 %)	Gambling (26 %)	Automotive (15 %)
Spain	Arts & Entertainment (21 %)	Automotive (17 %)	Personal Finance (14 %)
Sweden	Automotive (30 %)	Arts & Entertainment (24 %)	Travel (24 %)
UK	Arts & Entertainment (21 %)	Gambling (17 %)	Automotive (16 %)
US	Business (55 %)	Gambling (10 %)	Arts & Entertainment (9 %)

Table 17: Major Brand advertising – Top sectors by country, 2024 Ad Monitoring Exercise – apps

4.5 Brand analysis

This section focuses on ads that can be attributed to a brand and excludes analysis for ads categorised as Unidentifiable Ads. No Sponsored Content ads were found.

4.5.1 Brands by app type

A total of 2 357 unique brands were identified from the 2024 Monitored Apps during the 2024 Ad Monitoring Exercise, with 212 (9 %) of these being unique Major Brands, as shown in Table 18.

	Q1			Q2			Q3			Q4			Total		
App Type	**% of Apps**	**Total Brands**	**Total Major Brands**	**% of Apps**	**Total Brands**	**Total Major Brands**	**% of Apps**	**Total Brands**	**Total Major Brands**	**% of Apps**	**Total Brands**	**Total Major Brands**	**% of Apps**	**Total Brands**	**Total Major Brands**
Illegal Apps	59 %	383	45	62 %	490	47	61 %	738	71	60 %	416	54	60 %	1 079	107
High-Risk Apps	41 %	891	104	38 %	762	76	39 %	996	92	40 %	525	66	40 %	2 021	181
All 2024 Monitored Apps		**1 018**	**110**		**861**	**84**		**1 222**	**113**		**647**	**77**		**2 357**	**212**

Table 18: Number of brands and Major Brands by app type, 2024 Ad Monitoring Exercise

The highest numbers of unique brands across All 2024 Monitored Apps, with 1 222 total brands and 113 Major brands, were captured in Q3. Illegal Apps showed a 9 % increase from Q1 to Q4 in total brands and a 20 % increase in Major Brands. In contrast, High-Risk Apps showed a 41 % decrease in total brands found from Q1 to Q4 and a 37 % decrease in Major Brands.

In 2024, High-Risk Apps contributed significantly more unique brands and Major Brands proportionately to the totals than Illegal Apps. Although High-Risk Apps were just 40 % of the 2024 Monitored Apps, the 2 021 unique brands found on High-Risk Apps represented 86 % of the 2 327 total unique brands identified from apps in the 2024 Ad Monitoring Exercise. Similarly, the 181 Major Brands identified from High-Risk Apps were 85 % of the total 212 Major Brands identified from the 2024 Monitored Apps.

4.5.2 Brands by country and EU source

Table 19 below provides a comparison of the number of unique brands by country collected from the 2024 Monitored Apps, along with a percentage of those brands that were either headquartered or had established business operations in at least one EU country ('EU Brands') ([47]).

Hungary had the highest count of unique brands collected from the 2024 Monitored Apps with 551, followed by Poland with 538 and Estonia with 531. Malta had the lowest number of brands with 293.

([47]) No headquarter location could be identified for 14 % of the brands found on the 2024 Monitored Apps.

Germany had the highest percentage of EU Brands collected from the 2024 Monitored Apps with 44 %, followed by Italy with 41 %.

Both the UK (470) and the US (534) numbers of unique brands were significantly higher than the EU median count of 426.5. The UK was slightly above the EU median of 28 % for EU Brands at 29 %, while the US was below at 21 %.

Country	Total Brands	EU Brands % of Total
Belgium	448	25 %
Czech Republic	389	28 %
Denmark	431	31 %
Estonia	531	19 %
France	427	38 %
Germany	479	44 %
Hungary	551	24 %
Ireland	420	28 %
Italy	426	41 %
Lithuania	323	26 %
Malta	293	33 %
Netherlands	398	37 %
Poland	538	27 %
Portugal	372	29 %
Romania	450	24 %
Slovakia	454	24 %
Spain	389	35 %
Sweden	379	36 %
EU Median	426.5	28 %
UK	470	29 %
US	534	21 %

Table 19: Number of brands and percentage source headquarters by country in the 2024 Ad Monitoring Exercise – apps

4.6 Ad Intermediary analysis

This section analyses the variation and diversity in the Ad Intermediaries found across all advertising collected from the 2024 Monitored Apps during the 2024 Ad Monitoring Exercise.

Examples of Ad Intermediary types include Ad Exchanges, Ad Networks, Supply-Side Platforms (SSPs) and Demand-Side Platforms (DSPs).

4.6.1 Breakdown of Ad Intermediaries by app type

As shown in Table 20, 276 total unique Ad Intermediaries were identified across the 2024 Monitored Apps during the 2024 Ad Monitoring Exercise.

	Q1			Q2			Q3			Q4			Total		
App Type	**% of Apps**	**Ad Intermediary Type**	**Total**	**% of Apps**	**Ad Intermediary Type**	**Total**	**% of Apps**	**Ad Intermediary Type**	**Total**	**% of Apps**	**Ad Intermediary Type**	**Total**	**% of Apps**	**Ad Intermediary Type**	**Total**
Illegal Apps	59 %	Ad Serving	13	62 %	Ad Serving	14	61 %	Ad Serving	25	60 %	Ad Serving	17	60 %	Ad Serving	33
		Ad Tech	85		Ad Tech	95		Ad Tech	102		Ad Tech	83		Ad Tech	109
		Adware	1		Adware	2		Adware	3		Adware	1		Adware	3
		Anonymised Ad Tech	3		Anonymised Ad Tech	11		Anonymised Ad Tech	9		Anonymised Ad Tech	7		Anonymised Ad Tech	19
		Total	**102**		**Total**	**122**		**Total**	**139**		**Total**	**108**		**Total**	**164**
High-Risk Apps	41 %	Ad Serving	32	38 %	Ad Serving	26	39 %	Ad Serving	46	40 %	Ad Serving	35	40 %	Ad Serving	70
		Ad Tech	96		Ad Tech	100		Ad Tech	107		Ad Tech	100		Ad Tech	132
		Adware	5		Adware	4		Adware	5		Adware	4		Adware	7
		Anonymised Ad Tech	8		Anonymised Ad Tech	19		Anonymised Ad Tech	16		Anonymised Ad Tech	11		Anonymised Ad Tech	30
		Total	**141**		**Total**	**149**		**Total**	**174**		**Total**	**150**		**Total**	**239**
All Monitored Apps		Ad Serving	34		Ad Serving	28		Ad Serving	54		Ad Serving	42		Ad Serving	80
		Ad Tech	105		Ad Tech	115		Ad Tech	122		Ad Tech	105		Ad Tech	148
		Adware	5		Adware	4		Adware	7		Adware	4		Adware	8
		Anonymised Ad Tech	9		Anonymised Ad Tech	27		Anonymised Ad Tech	20		Anonymised Ad Tech	15		Anonymised Ad Tech	40
		Total	**153**		**Total**	**174**		**Total**	**203**		**Total**	**166**		**Total**	**276**

Table 20: Number of Ad Intermediaries by app type, Q1 to Q4 2024

High-Risk Apps accounted for just 40 % of the 2024 Monitored Apps but had 87 % (239) of the total 276 Ad Intermediaries compared to Illegal Apps, which comprised 60 % of the 2024 Monitored Apps, with 59 % of unique Ad Intermediaries (164). The percentage of Ad Tech Ad Intermediaries was slightly higher on High-Risk Apps (89 %) than on Illegal Apps (74 %). Notably, 88 % of the Adware Ad Intermediaries were identified on High-Risk Apps, compared to 38 % on Illegal Apps.

4.6.2 Ad Intermediaries by country and EU source

Table 21 below provides the numbers of unique Ad Intermediaries by country collected from the 2024 Monitored Apps, along with a percentage of those Ad Intermediaries that were either headquartered or had established business operations in at least one EU country ('EU Ad Intermediaries'). Non-EU Ad Intermediaries include identified Ad Intermediaries with headquarters

outside the EU. Unidentifiable Ad Intermediaries are those for which no specific headquarters could be identified.

Country	Total Ad Intermediaries	EU Ad Intermediaries % of Total	Non-EU Ad Intermediaries % of Total	Unidentifiable Ad Intermediaries % of Total
Belgium	112	33 %	54 %	13 %
Czech Republic	96	33 %	56 %	10 %
Denmark	119	34 %	47 %	18 %
Estonia	136	30 %	51 %	19 %
France	111	32 %	52 %	16 %
Germany	108	32 %	53 %	15 %
Hungary	150	29 %	50 %	21 %
Ireland	114	32 %	54 %	14 %
Italy	92	36 %	55 %	9 %
Lithuania	117	32 %	52 %	16 %
Malta	98	35 %	54 %	11 %
Netherlands	109	34 %	55 %	11 %
Poland	123	29 %	52 %	19 %
Portugal	109	31 %	53 %	16 %
Romania	116	30 %	57 %	13 %
Slovakia	153	27 %	49 %	24 %
Spain	109	34 %	55 %	11 %
Sweden	99	33 %	52 %	15 %
EU Median	111.5	32 %	53 %	15 %
UK	127	30 %	52 %	18 %
US	175	26 %	54 %	20 %

Table 21: Number of Ad Intermediaries, % EU Ad Intermediaries, % Non-EU Ad Intermediaries and % Unidentifiable Ad Intermediaries by country – apps

Slovakia had the highest number of Ad Intermediaries with 153, following by Hungary with 150. Italy had the lowest number with 92. The UK (127) and the US (175) numbers of unique Ad Intermediaries were both higher than the EU median of 111.5. Italy (36 %) and Malta (35 %) had the highest percentages of EU Ad Intermediaries.

4.7 Estimated ad revenue analysis

This section analyses the variation in potential ad revenue generated by the 2024 Monitored Apps in 2024. The potential ad revenue figures are presented in euro.

Table 22 compares the breakdown by app type and quarter of the estimated ad revenue generated by the 2024 Monitored Apps. All estimated revenue figures provided are worldwide.

	Q1 Global		Q2 Global		Q3 Global		Q4 Global		Annual Global	
App Type	% of Apps	Est. Ad Revenue	% of Apps	Est. Ad Revenue	% of Apps	Est. Ad Revenue	% of Apps	Est. Ad Revenue	% of Apps	Est. Ad Revenue
Illegal Apps	59 %	EUR 4.1M (71.2 %)	62 %	EUR 4.3M (71.8 %)	61 %	EUR 2.9M (65.9 %)	60 %	EUR 2.5M (64.0 %)	60 %	EUR 15.5M (68.8 %)
High-Risk Apps	41 %	EUR 1.6M (28.8 %)	38 %	EUR 1.7M (28.2 %)	39 %	EUR 1.5M (34.1 %)	40 %	EUR 1.4M (36.0 %)	40 %	EUR 7.0M (31.2 %)
All 2024 Monitored Apps		EUR 5.7M		EUR 6.0M		EUR 4.4M		EUR 3.9M		EUR 22.5M

Table 22: Estimated ad revenue generated by the 2024 Monitored Apps by app type and quarter

Worldwide, the potential ad revenue generated by the 2024 Monitored Apps was estimated to be EUR 22.5 million for calendar year 2024. The worldwide revenue generated by the 2024 Monitored Apps was highest in Q1 with EUR 6 million, but the estimated ad revenue decreased 32 % by Q4 to EUR 3.9 million.

Illegal Apps were estimated to generate a higher percentage of the estimated ad revenue than they represented in the total 2024 Monitored Apps. For example, in Q1 Illegal Apps comprised 59 % of the 2024 Monitored Apps but generated 71.2 % of the estimated ad revenue. Across the 2024 Ad Monitoring Exercise, Illegal Apps comprised 60 % of the 2024 Monitored Apps but generated 68.8 % of the estimated ad revenue.

5 Comparison of analyses from 2024 Monitored Websites and 2024 Monitored Apps

This section compares the data analyses for the 2024 Monitored Websites and the 2024 Monitored Apps.

5.1 Website vs app overview

Table 23 provides an overview comparing two key factors relating to estimated ad revenue generated by the datasets for the 2024 Monitored Apps and 2024 Monitored Websites.

2024 Monitored Data	Total Monitored	Average Global Annual Est. Ad Revenue per Publisher	Average ECPM
2024 Monitored Apps	398	EUR 56 543	EUR 5.01
2024 Monitored Websites	7 250	EUR 33 377	EUR 3.05

Table 23: Comparison of estimated ad revenue factors for 2024 Monitored Apps and Websites

The average eCPM paid to mobile app publishers for an ad (EUR 5.01) is more than 1.5 times greater than the average eCPM paid to website publishers (EUR 3.05). This value per ad makes mobile apps a desirable environment for publishers in general, including those dedicated to IP infringement.

During the 2024 Ad Monitoring Exercise, the average global annual estimated ad revenue generated per publisher (app or website) was also more than 1.5 times higher for the 2024 Monitored Apps (EUR 56 543) than for the 2024 Monitored Websites (EUR 33 377). However, the dataset size for the apps was only 6 % of that of the websites, which may distort the results.

Websites continue to be a relatively easy way for the average publisher to generate revenue. Revenue is driven by getting traffic to the publisher (i.e. the website or app), which requires search engine optimisation (SEO). For websites, SEO is native to the website itself, although it requires

setting up the website to be attractive to search engines. For apps, SEO requires maintaining a landing page or website for search engines to scrape, so the SEO is secondary to the app itself.

Affiliate marketing is increasingly used for monetisation on websites. For apps, affiliate marketing seems to be used primarily to drive installations, rather than for monetisation. Websites have more ads per page than apps, which drives revenue. Websites also may have hundreds or thousands of pages of content, each of which can have ads.

In addition to affiliate marketing, paid influencers on social media may link to either websites or apps to draw traffic.

5.2 Ad Type percentage comparison – 2024 Monitored Apps and Websites

Figure 23 compares the percentage of estimated Ad Impressions by Ad Type for the 2024 Monitored Apps and 2024 Monitored Websites.

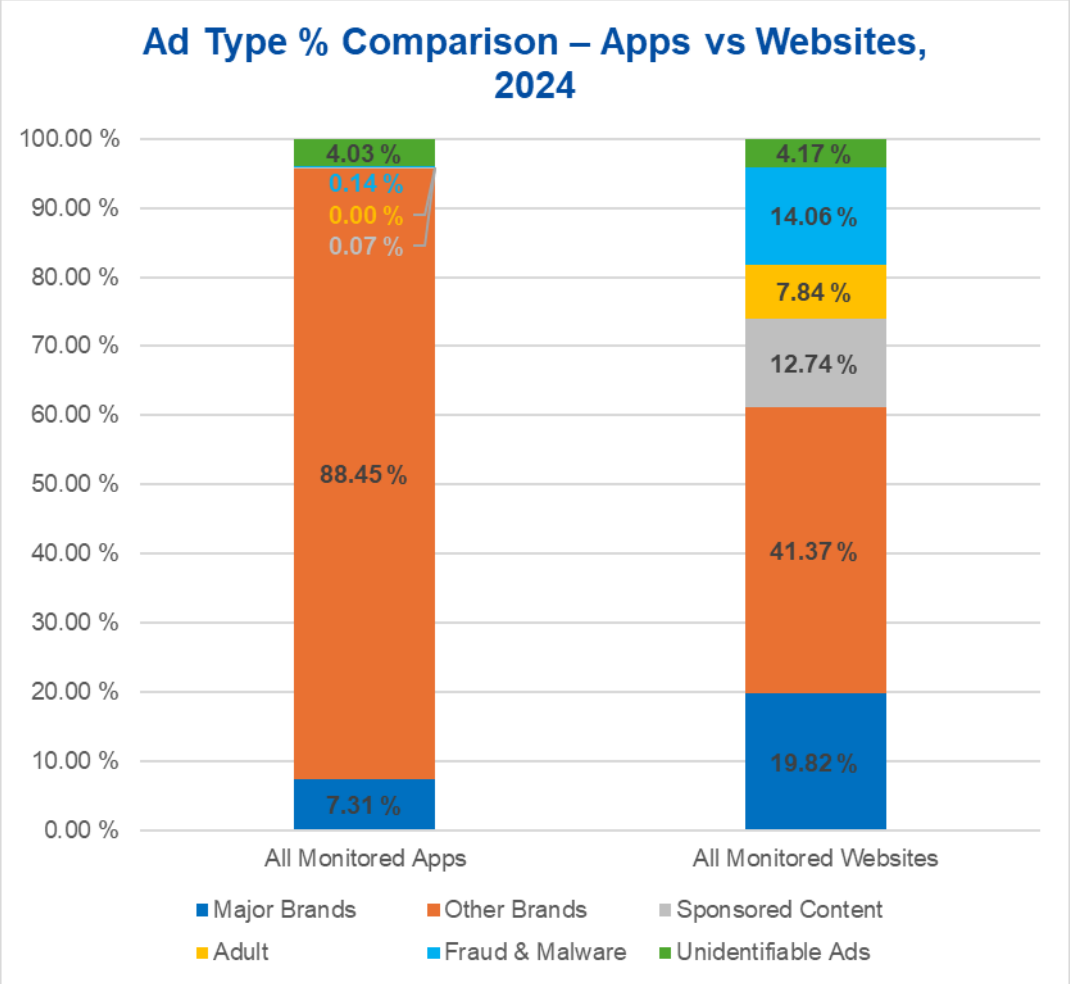


Figure 23: Comparison of Ad Type percentages for the 2024 Monitored Apps and Websites

As clearly indicated in Figure 23, the Ad Type profiles for the 2024 Monitored Apps are quite distinct from those for the 2024 Monitored Websites. The 2024 Monitored Apps had 96 % of estimated Ad Impressions for Branded Advertising, compared to 61 % on the 2024 Monitored Websites; they also had 7.31 % for Major Brands, compared to 19.82 % on Websites.

The percentage of Estimated Ad Impressions for Fraud & Malware was just 0.14 % on the 2024 Monitored Apps, but 14.06 % on the 2024 Monitored Websites. Virtually no adult advertising was

found on the 2024 Monitored Apps, while 7.84 % of the estimated Ad Impressions on the 2024 Monitored Websites were for adult ads. Adult ads on websites are often delivered by affiliate marketing rather than as programmatic ads. There is a high level of affiliate marketing on pirate websites, which has increased over time. Affiliate marketing was not found on the 2024 Monitored Apps. In addition, it is possible that adult ads on apps may be focused on specific types of apps with adult content.

Websites also had 12.74 % Sponsored Content, compared to <1 % on apps. The top Ad Tech companies delivering Sponsored Content ads on the 2024 Monitored Websites are members of TAG and are certified for brand safety. The TAG brand safety guidelines require use of PMAL to guide ad placement on apps. Although these Sponsored Content Ad Tech companies do provide advertising on apps, it is possible they are using the PMAL list to avoid placing ads on this list ([48]).

([48]) The 2024 TAG guidelines for website piracy compliance were not as prescriptive as for apps, leaving it to each company to decide how best to comply.

5.3 Branded Advertising sector comparison for the 2024 Monitored Apps and 2024 Monitored Websites

Figure 24 compares the Top-level Sectors for Branded Advertising on the 2024 Monitored Apps and 2024 Monitored Websites.

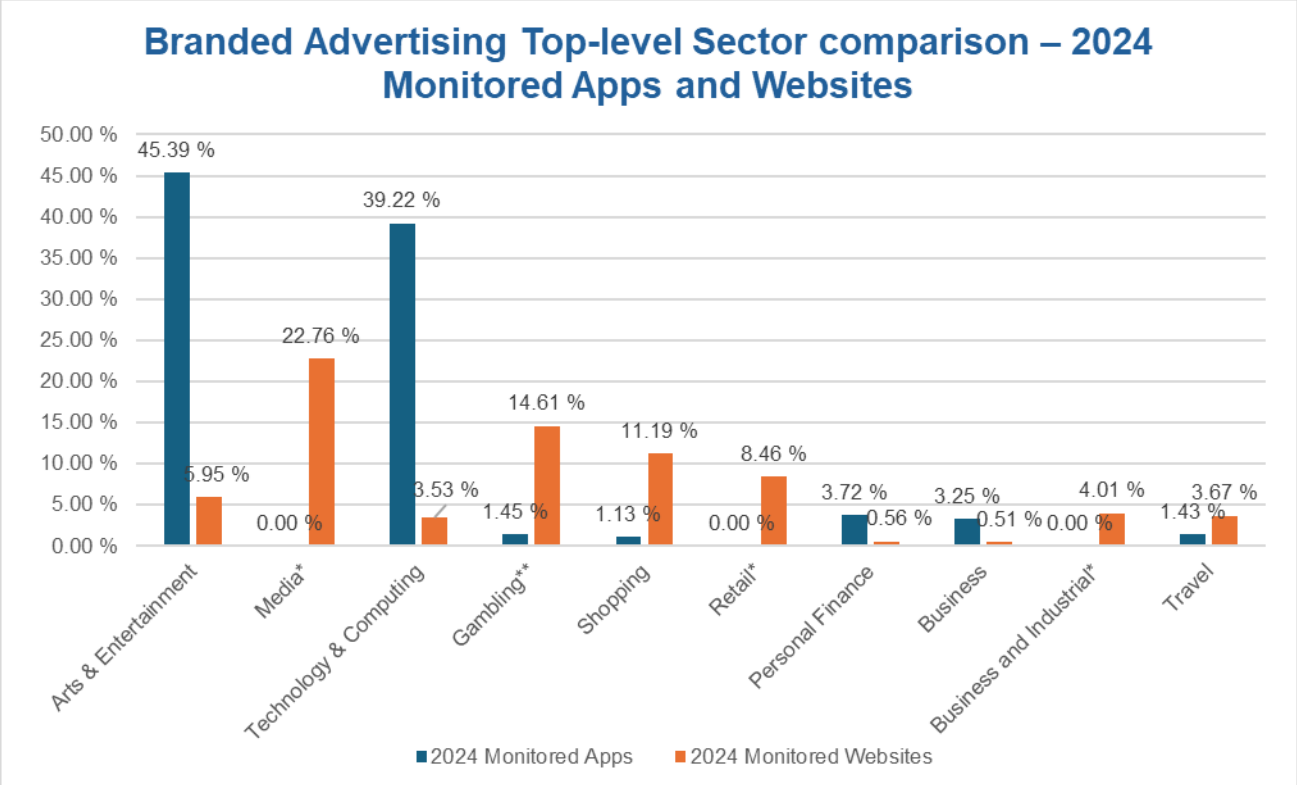


Figure 24: Branded Advertising top sector comparison between 2024 Monitored Apps and 2024 Monitored Websites
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*

The sectors included for the 2024 Monitored Websites are a combination of the IAB Content Taxonomy in H1 and the IAB Ad Product Taxonomy in H2, while those for the 2024 Monitored Apps are solely from the IAB Content Taxonomy. Similar sectors from the two taxonomies have been grouped together in the figure for the purposes of comparison, although the scope of the two sectors may not be identical. These pairings include Arts & Entertainment vs Media; Shopping vs Retail; and Business vs Business & Industrial.

The top Branded Advertising sector for apps was Arts & Entertainment (45.4 %), while for websites it was the related sector of Media (22.8 %). Technology & Computing (39.2 %) was the second-

ranked sector for apps, but it was just 3.5 % for websites as a sector in H1. Gambling is a sector used in both taxonomies and was the second-ranked sector for websites (14.6 %), but it was tied in the fifth rank for apps, with just 1.4 %. Shopping (11.2 %) and the related Retail (8.5 %) sectors together comprised nearly 20 % of the estimated Ad Impressions for the 2024 Monitored Websites, while apps had just 1.1 % of estimated Ad Impressions for Shopping.

Personal Finance was third-ranked for apps with 3.7 % of estimated Ad Impressions, but websites had just 0.6 %. Business was fourth-ranked for apps (3.3 %), while websites had 0.5 % from Business and 4 % from the related Business & Industrial sector. Websites (3.7 %) also had a higher percentage of estimated Ad Impressions for Travel than apps (1.4 %).

5.4 Major Brand advertising comparison for the 2024 Monitored Apps and 2024 Monitored Websites

Figure 25 compares the Top-level Sectors for Major Brand advertising collected from the 2024 Monitored Apps and 2024 Monitored Websites.

The sectors included for the 2024 Monitored Websites are a combination of the IAB Content Taxonomy in H1 and the IAB Ad Product Taxonomy in H2, while those for the 2024 Monitored Apps are solely from the IAB Content Taxonomy. Similar sectors from the two taxonomies have been grouped together in the figure for the purposes of comparison, although the scope of the two sectors may not be identical.

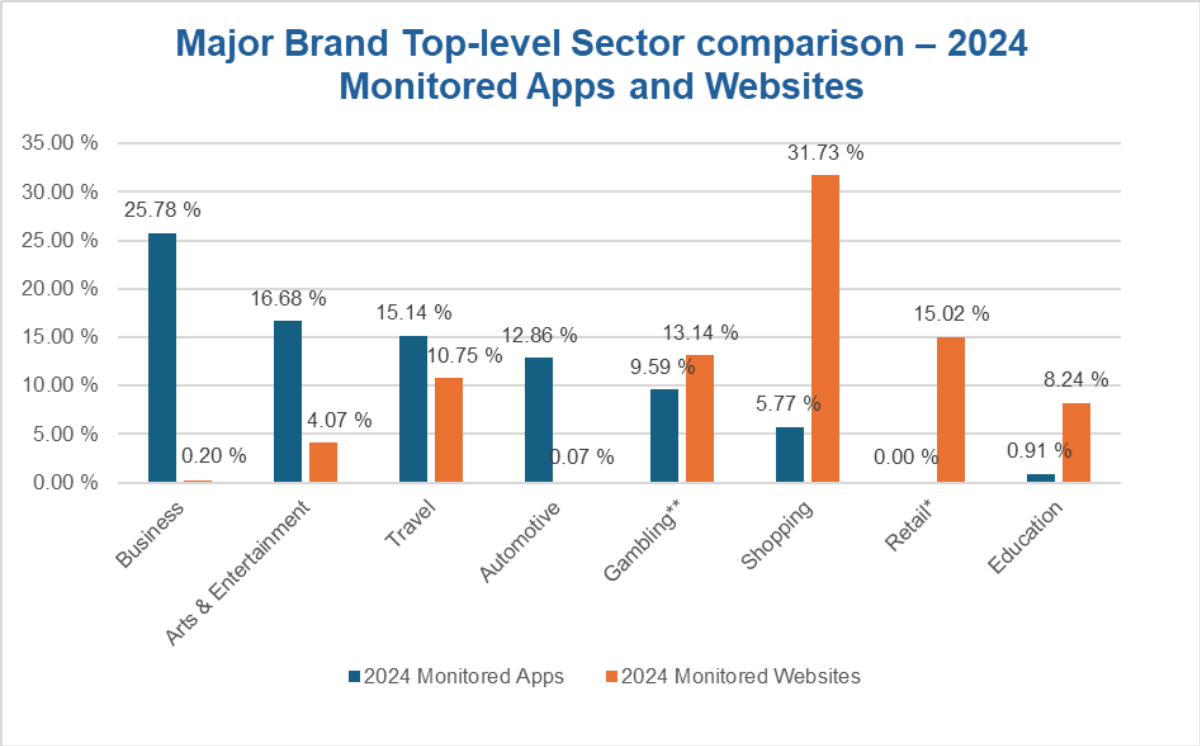


Figure 25: Major Brand advertising sector comparison between 2024 Monitored Apps and Websites
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*

Business was the top Major Brand sector for apps (25.8 %), but websites had just 0.2 % of estimated Ad Impressions for Business. Shopping (31.7 %) and the related Retail (15 %) sectors together comprised nearly 47 % of the estimated Ad Impressions for the 2024 Monitored Websites, while apps had just 5.8 % of estimated Ad Impressions for Shopping. Arts & Entertainment was the second-ranked Major Brand sector for apps (16.7 %) but was ranked sixth for websites (4.1 %). Travel was third-ranked for apps (15.1 %) and fifth-ranked for websites (10.8 %). Gambling was third-ranked for websites (13.1 %) but fifth-ranked for apps.

Automotive was fourth-ranked on apps (12.9 %) but last ranked among the top Major Brand sectors for websites (0.1 %). Education was fifth-ranked for websites (8.2 %) and last ranked among the top Major Brand sectors for apps (0.9 %).

5.5 EU Brands by country comparison – 2024 Monitored Apps and Websites

Table 24 below provides a comparison of the percentages of EU Brands by country for the 2024 Monitored Apps and 2024 Monitored Websites.

Country	2024 Monitored Apps EU Brands % of Total	2024 Monitored Websites EU Brands % of Total
Belgium	25 %	17 %
Czech Republic	28 %	20 %
Denmark	31 %	13 %
Estonia	19 %	9 %
France	38 %	20 %
Germany	44 %	28 %
Hungary	24 %	12 %
Ireland	28 %	14 %
Italy	41 %	21 %
Lithuania	26 %	18 %
Malta	33 %	8 %
Netherlands	37 %	28 %
Poland	27 %	20 %
Portugal	29 %	11 %
Romania	24 %	11 %
Slovakia	24 %	9 %
Spain	35 %	17 %
Sweden	36 %	18 %
EU Median	28 %	16 %
UK	29 %	7 %
US	21 %	5 %

Table 24: Comparison of EU Brand percentages by country for the 2024 Monitored Apps and 2024 Monitored Websites

The EU Brand percentages were higher on the 2024 Monitored Apps than on the 2024 Monitored Websites for all countries. However, the percentage differences varied from 33 % for the Netherlands (apps 37 %, websites 28 %) and Poland (apps 27 %, websites 20 %) to a high of 302 % for Malta (apps 33 %, websites 8 %).

The EU median percentage of EU Brands was higher on the 2024 Monitored Apps (28 %) than on the 2024 Monitored Websites (16 %). The UK was above the EU median for apps (29 %) but

significantly below the EU median for websites (7 %). The US was below the EU median for both apps (21 %) and websites (5 %).

5.6 EU Ad Intermediaries by country comparison – 2024 Monitored Apps and 2024 Monitored Websites

Table 25 provides a comparison of the percentages of EU Ad Intermediaries by country for the 2024 Monitored Apps and 2024 Monitored Websites.

Country	2024 Monitored Apps EU Ad Intermediaries % of Total	2024 Monitored Websites EU Ad Intermediaries % of Total
Belgium	33 %	13 %
Czech Republic	33 %	13 %
Denmark	34 %	12 %
Estonia	30 %	13 %
France	32 %	13 %
Germany	32 %	13 %
Hungary	29 %	13 %
Ireland	32 %	13 %
Italy	36 %	13 %
Lithuania	32 %	13 %
Malta	35 %	11 %
Netherlands	34 %	12 %
Poland	29 %	14 %
Portugal	31 %	12 %
Romania	30 %	13 %
Slovakia	27 %	13 %
Spain	34 %	12 %
Sweden	33 %	13 %
EU Median	32 %	13 %
UK	30 %	12 %
US	26 %	12 %

Table 25: Comparison of EU Ad Intermediaries by country for the 2024 Monitored Apps and 2024 Monitored Websites

The EU Ad Intermediary percentages were significantly higher on the 2024 Monitored Apps than on the 2024 Monitored Apps for all countries. However, the percentage differences varied from a high

of 207 % higher for Malta (apps 35 %, websites 11 %) to a low of 108 % higher for Slovakia (apps 27 %, websites 13 %).

The EU median was 19 % for the 2024 Monitored Apps compared to 21 % for the 2024 Monitored Websites. The UK was below the EU median for both apps (18 %) and websites (20 %). The US was the same as the EU median for apps and below the EU median for websites (19 %).

6 Trend analyses

This section assesses the impact and effectiveness of the MoU on the online advertising market by reviewing three categories of trends:

- Section 6.1 details the top-level trends for websites from 2024, drilling further into analyses touched on in Section 3 of the report;
- Section 6.2 details the top-level trends for apps from 2024, drilling further into analyses touched on in Section 4 of the report;
- Section 6.3 details ad revenue trends comparing apps and websites in 2024;
- Section 6.4 details trends on websites from 2019 to 2024;
- Section 6.5 provides trends comparing apps and websites from 2021 to 2024.

6.1 2024 Monitored Website trends

6.1.1 Estimated Ad Impressions trend in 2024

Figure 26 charts the estimated Ad Impressions for the 2024 Monitored Websites by month.

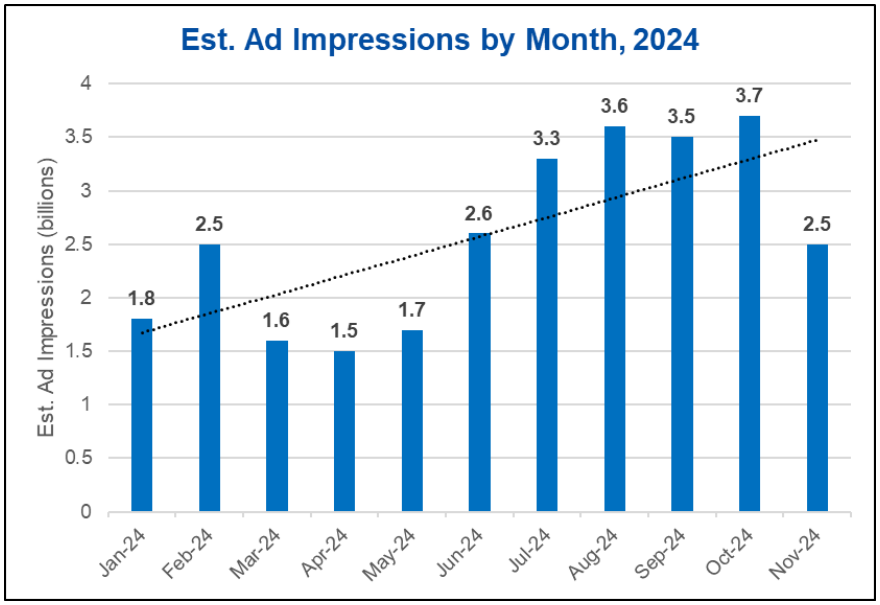


Figure 26: Estimated Ad Impressions by month, 2024 Monitored Websites

As described in Sections 2.5.3 and 3.2.1 above, the key factors influencing estimated Ad Impressions are the popularity of the changing websites included in the 2024 Monitored Websites and the volume of ads collected during each period. The general trendline shows a 106 % increase in estimated Ad Impressions from January 2024 (1.8 billion) to the last full month of data collection in October 2024 (3.7 billion). Although Q4 2024 ended on 20 November, it is likely that the trend line for estimated Ad Impressions would have continue at the same level as October 2024 with another 10 days of data collection. This overall increase reflects the continuing growth in piracy, with new websites rapidly replacing those targeted for enforcement, as well as growth in the ad industry.

6.1.2 EU Major Brands trend in 2024

Figure 27 shows the trend by month of the proportion of Major Brand estimated Ad Impressions for the 2024 Monitored Websites served by EU Major Brands.

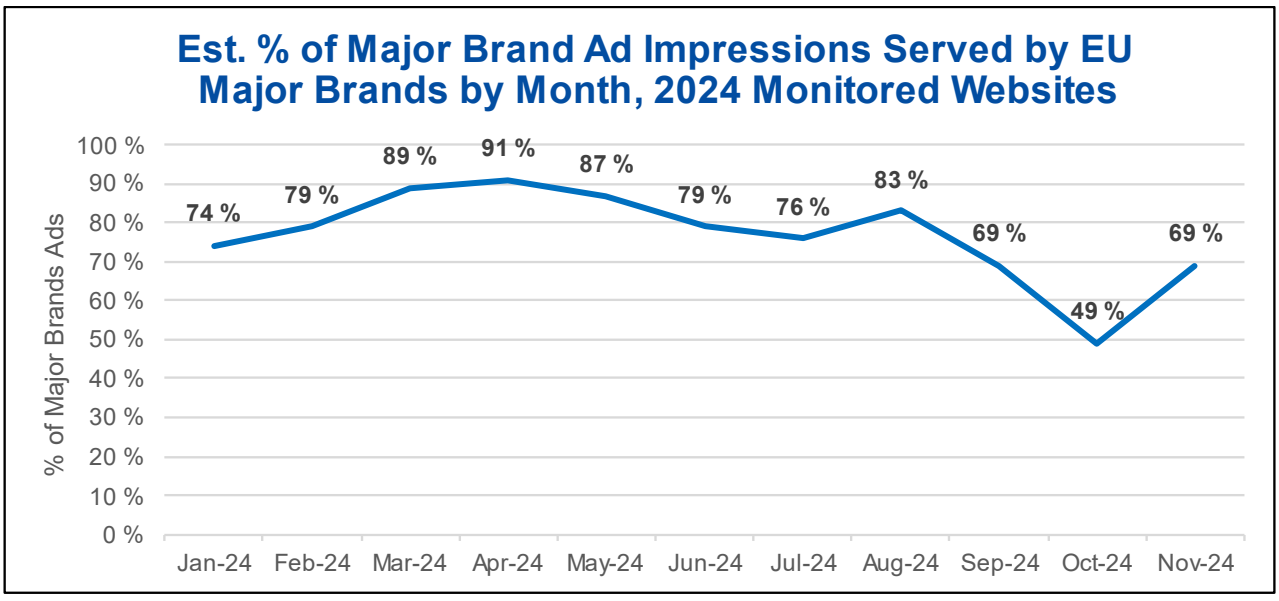


Figure 27: Percentage of estimated Major Brand Ad Impressions served by EU Major Brands by month, 2024 Monitored Websites

Figure 27 shows that there was an increase in the proportion of estimated Ad Impressions served by EU Major Brands from January 2024 (74 %) to a peak in April 2024 (91 %). From April 2024, the proportion declines again to 76 % by July 2024, before an increase to 83 % in August 2024. Thereafter, there was a sharp decline in the proportion of estimated Ad Impressions served by EU Major Brands to the lowest point of the year in October 2024 (49 %). The proportion increased again

in November to 69 %. Interestingly, in October 2024, when the proportion of EU Major Brands was lowest, Illegal Websites had the highest number of Major Brands, and both all Monitored Websites and High-Risk Websites had the second highest numbers of Major Brands for the year. It appears that these additional Major Brands were disproportionately non-EU Brands. The median percentage of Major Brand ads served by EU Major Brands on the 2024 Monitored Websites each month was 79 %.

6.1.3 Estimated ad revenue trend in 2024

Figure 28 shows the trend in estimated ad revenue generated by the 2024 Monitored Websites in the monitored countries by month and website type during the 2024 Ad Monitoring Exercise.

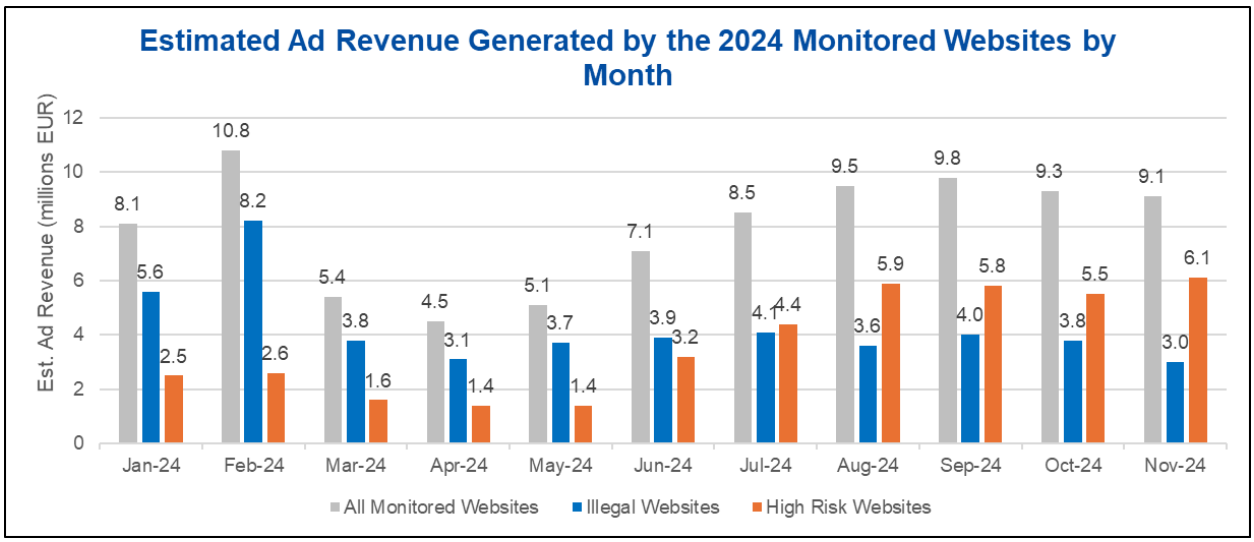


Figure 28: Estimated ad revenue generated by the 2024 Monitored Websites by month and website type

Revenue generated by the 2024 Monitored Websites was highest in February 2024 (EUR 10.8 million) and lowest in April 2024 (EUR 4.5 million). From the low in April 2024 to November 2024, the estimated ad revenue doubled to EUR 9.1 million. From January to June 2024, the estimated ad revenue generated by Illegal Websites was higher than that from High-Risk Websites, with a median 130 % difference. However, from July to November 2024, the estimated ad revenue generated by High-Risk Websites was higher than that from Illegal Websites. Throughout the 2024 Ad Monitoring Exercise, 33 % more High-Risk Websites on average were included in ad

tracking than Illegal Websites ([49]). It may be relevant that domains from an additional IWL (Denmark IWL) were incorporated into the 2024 Ad Monitoring Exercise after June 2024.

Figure 29 below shows the trend for the average eCPM generated by the 2024 Monitored Websites by month and website type during the 2024 Ad Monitoring Exercise.

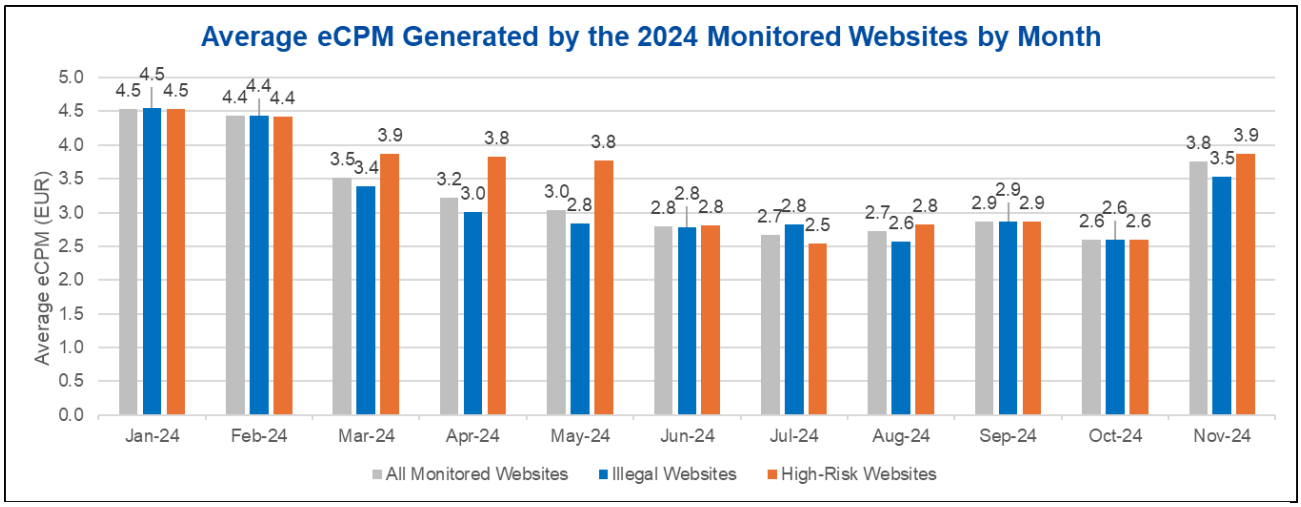


Figure 29: Average eCPM Generated by the 2024 Monitored Websites by month and website type

The average eCPM generated by all Monitored Websites in 2024 was highest in January 2024 (EUR 4.5) and decreased by 41 % to a low of EUR 2.7 in July 2024. From July to November 2024, the average eCPM generated by all Monitored Websites increased by 40 % to end at EUR 3.8.

The average eCPM generated by High-Risk Websites was either higher than or equal to that of Illegal Websites in all months except for July 2024.

As with ad revenue in general, eCPM is dependent on both the popularity of the set of websites included in the 2024 Monitored Websites – which changed over time – and on advertising activity. The more popular the website, the more likely it is that advertisers will be drawn to place advertising there, as they are seeking impressions (i.e. eyeballs) in order to obtain the best ROI for their ad spend.

([49]) See Table 9 above, Count of brands by website type, Q1 to Q4, 2024.

In addition, there is a seasonality to certain types of advertising. The most significant impact on eCPM shown in Figure 29 probably relates to the top advertisers. As shown in Figure 14 above, Shopping/Retail was the top sector for the year (ranging from 41 % to 54 % of all estimated Ad Impressions in each quarter). Certain Major Brand retailers spend a significant portion of their advertising budget in the holiday period from November through January each year. While there is a seasonality to other industry sectors (e.g. Travel and Automotive), the eCPM calculations generally balance out with the other ad sectors, as the estimated Ad Impressions vary by month and are not as significant as those for Shopping/Retail.

6.2 2024 Monitored App trends

This section provides trend analyses by month of the data collected from the 2024 Monitored Apps, which were monitored in Q3 and Q4 of 2024.

6.2.1 Estimated Ad Impressions trend for the 2024 Monitored Apps

Figure 30 below shows the estimated Ad Impressions by month for the 2024 Monitored Apps.

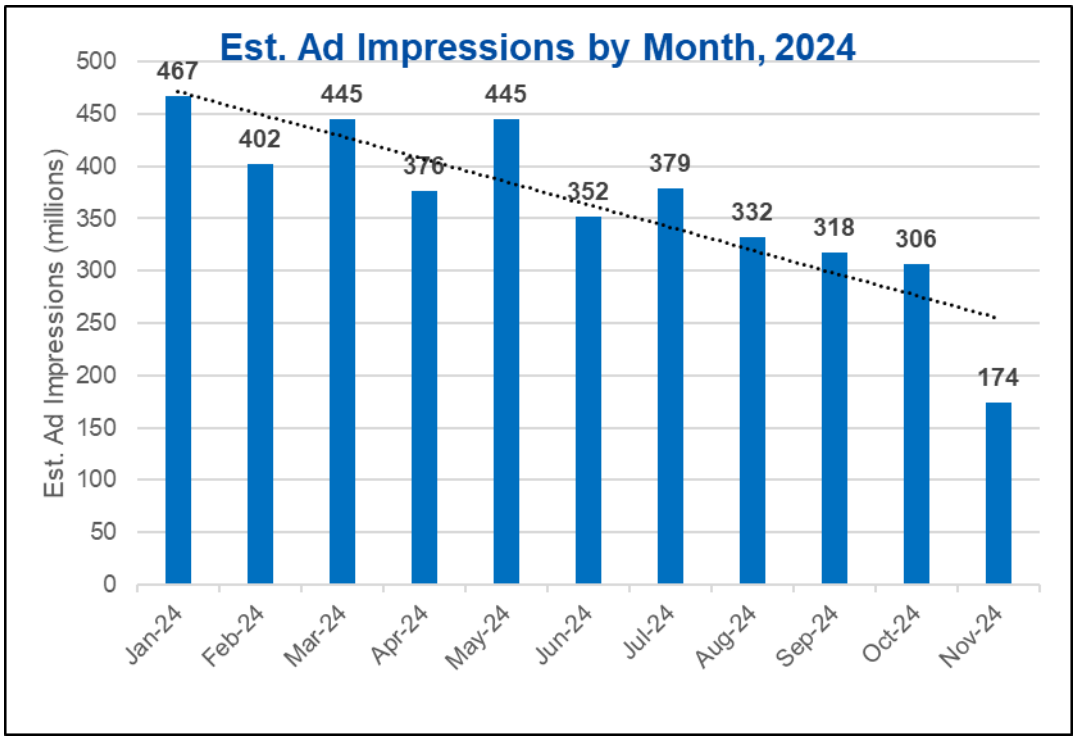


Figure 30: Estimated Ad Impressions by month, 2024 Monitored Apps

The key factors influencing estimated Ad Impressions for apps are the popularity of the changing apps included in the 2024 Monitored Apps and the volume of ads collected during each period; see also Section 2.9.1. Estimated Ad Impressions were highest in January 2024 (467 million), gradually dropping by 23% to July 2024 (379 million) after fluctuating each month. From July to October 2024, estimated Ad Impressions decreased an additional 24 % to 306 million.

6.2.2 EU Major Brands trend across 2024 Monitored Apps

Figure 31 shows the trend by month for the 2024 Monitored Apps for the proportion of estimated Major Brand Ad Impressions served by EU Major Brands.

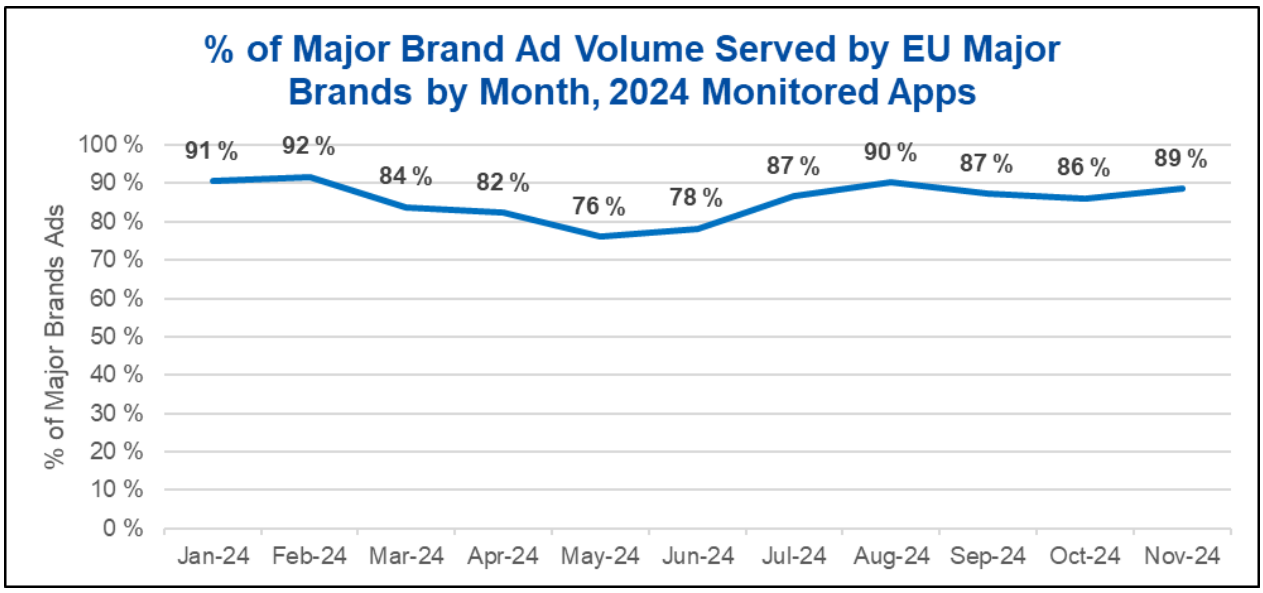


Figure 31: Percentage of Major Brands ads served by EU Major Brands by month, 2024 Monitored Apps

February 2024 had the highest proportion of estimated Ad Impressions served by EU Major Brands, with 92 %. From February to the lowest point in May 2024 (76 %), there was a 17 % decrease in the proportion, but it increased by 17 % again to 90 % by October 2024. The median percentage of Major Brand ads served by EU Major Brands for apps (87 %) was 10 % higher than the median for websites (79 %) (see Section 6.1.2).

6.2.3 Estimated ad revenue trend for the 2024 Monitored Apps

Figure 32 below shows the trend for estimated ad revenue generated by the 2024 Monitored Apps for the monitored period by month and app type.

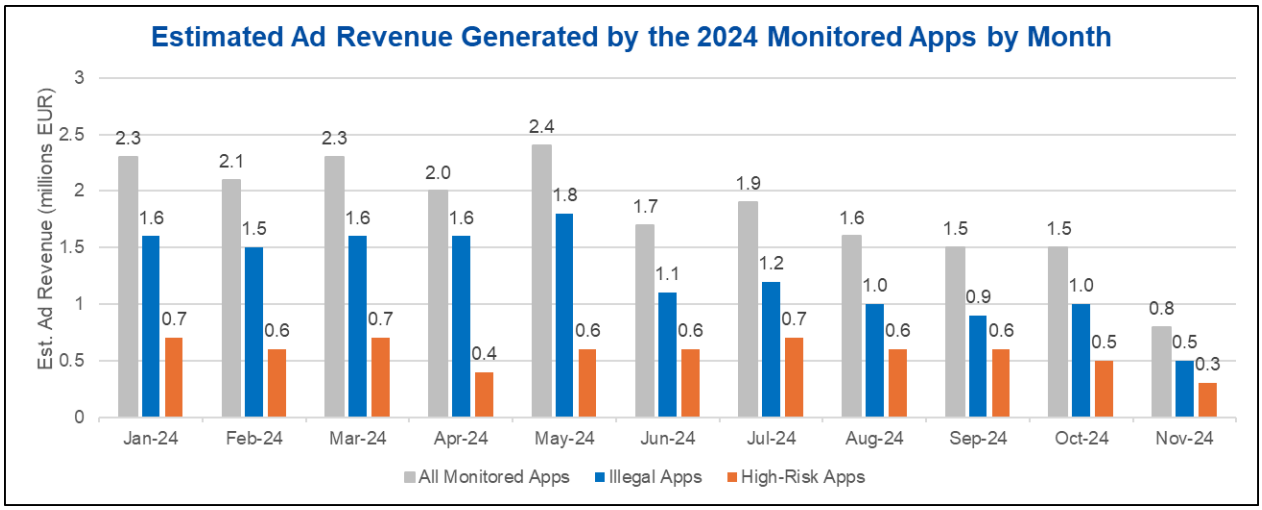


Figure 32: Estimated ad revenue generated by apps trend by month and app type, 2024 Monitored Apps

Estimated ad revenue generated by the 2024 Monitored Apps fluctuated from month and was highest in May 2024 for all monitored apps (EUR 2.4 million) and Illegal Apps (EUR 1.8 million). All monitored apps saw a 53 % decrease in estimated ad revenue from January 2024 (EUR 2.3 million) to October 2024 (EUR 1.5 million). Illegal Apps over-contributed to the total ad revenue in proportion to their share of the 2024 Monitored Apps in all months except for September 2024. The median proportion of revenue generated by Illegal Apps from January to October 2024 was 68.1 %, while the median proportion represented by Illegal Apps in the 2024 Monitored Apps was 60.5 % ([50]).

Figure 33 shows the trend in average eCPM generated by the 2024 Monitored Apps by month and app type during the 2024 Ad Monitoring Exercise.

Average eCPM generated by all monitored apps in 2024 fluctuated slightly from month to month, with a high in May 2024 of EUR 5.4. The median average eCPM generated by all monitored apps in

([50]) See Table 18, Number of brands and Major Brands by app type, 2024 Ad Monitoring Exercise.

2024 was EUR 5.0. The average eCPM generated from Illegal Apps was significantly higher than that from High-Risk Apps in all months, with a median difference of 70 %.

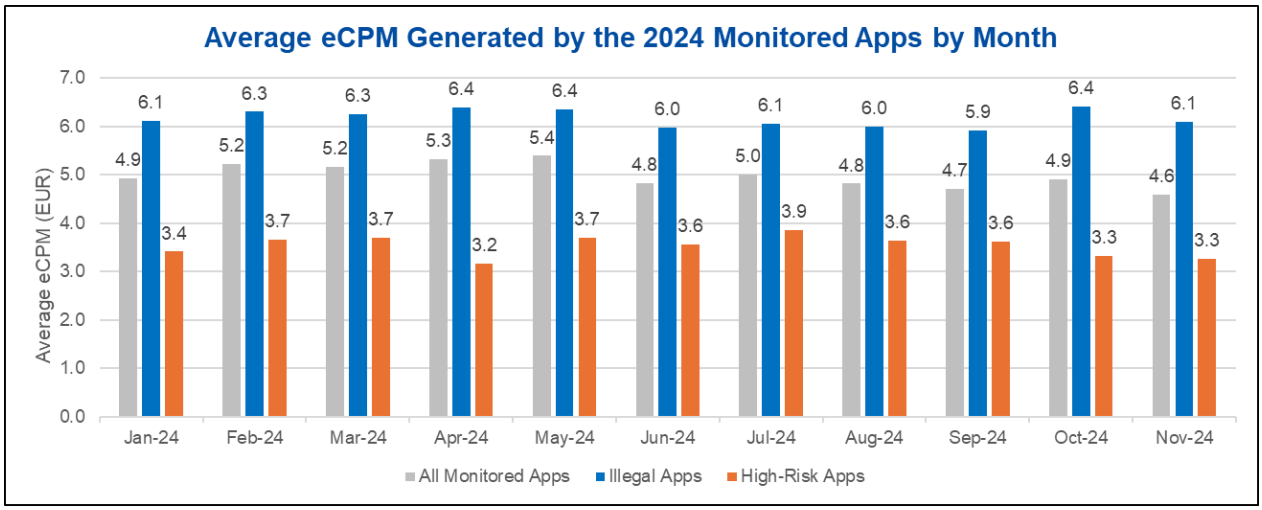


Figure 33: Average eCPM generated by the 2024 Monitored Apps by month and app type

6.3 Comparison of 2024 Monitored Apps and 2024 Monitored Websites ad revenue trends

This section draws out additional insights relating to the ad revenue generated from the 2024 Monitored Apps and 2024 Monitored Websites.

6.3.1 Average eCPM comparison for all monitored apps and websites

Figure 34 provides a comparison of average eCPM generated by the 2024 Monitored Apps and the 2024 Monitored Websites by month.

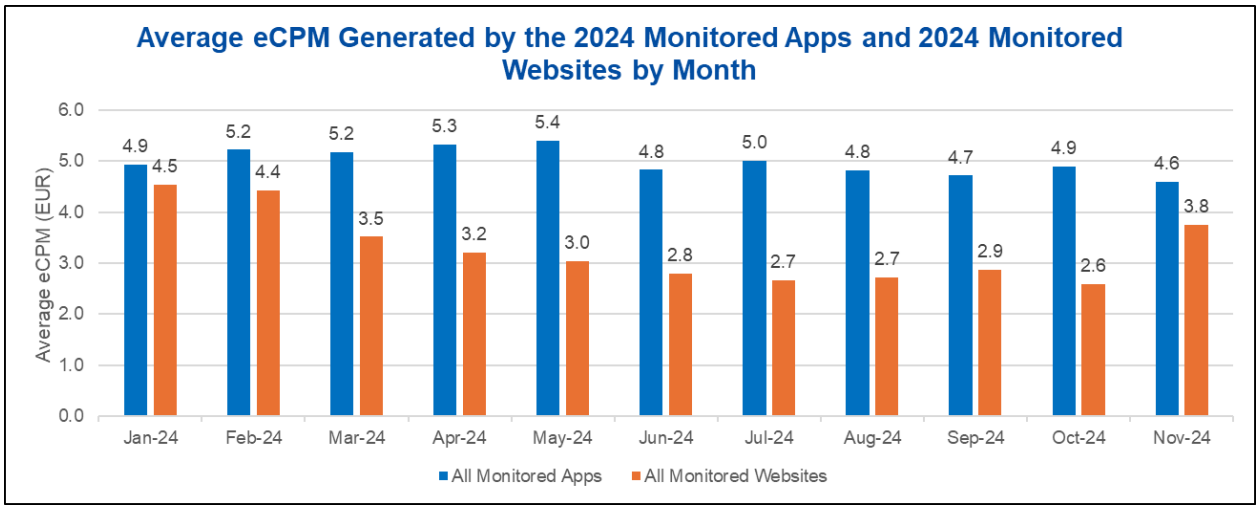


Figure 34: Comparison of average eCPM for the 2024 Monitored Apps and Websites by month

The average value per ad unit on apps was higher than that on websites in each month during the 2024 Ad Monitoring Exercise. The median of the average eCPM generated from the 2024 Monitored Apps (EUR 5.0) from January to October 2024 was 41 % higher than that from the 2024 Monitored Websites (EUR 3.0).

6.3.2 Average eCPM comparison for Illegal Apps and Illegal Websites

Figure 35 below provides a comparison of average eCPM generated by Illegal Apps and Illegal Websites by month during the 2024 Ad Monitoring Exercise.

The average value per ad unit on Illegal Apps was higher than that on Illegal Websites in each month during the 2024 Ad Monitoring Exercise. The median of the average eCPM generated from the Illegal

Apps (EUR 6.2) from January to October 2024 was 59 % higher than that from the Illegal Websites (EUR 2.8).

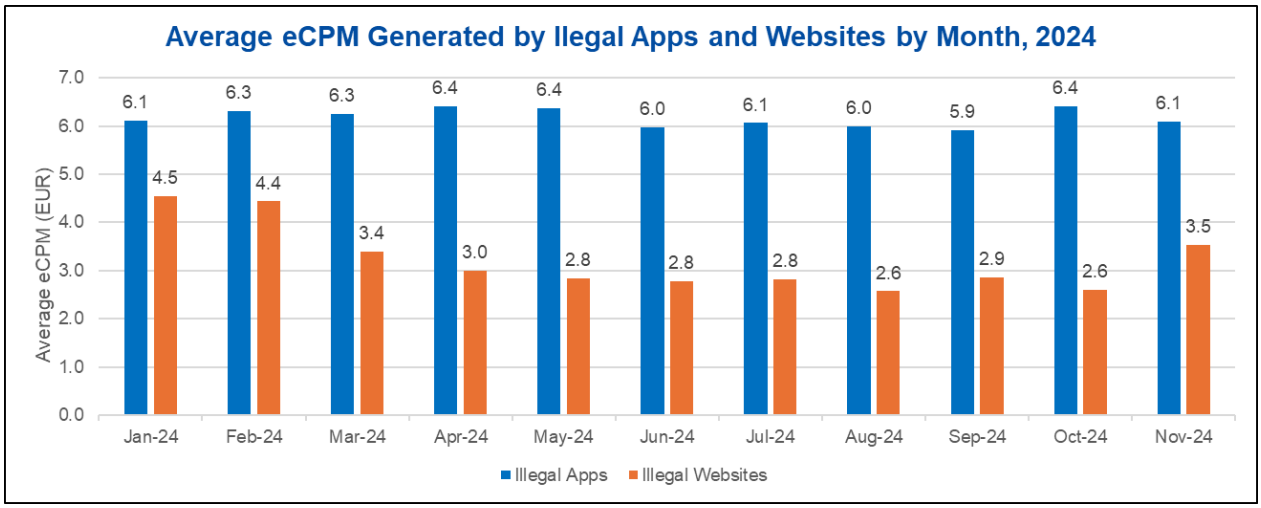


Figure 35: Comparison of average eCPM for Illegal Apps and Websites by month, 2024

6.3.3 Average eCPM comparison for High-Risk Apps and High-Risk Websites

Figure 36 below provides a comparison of the average eCPM generated by High-Risk Apps and High-Risk Websites by month during the 2024 Ad Monitoring Exercise.

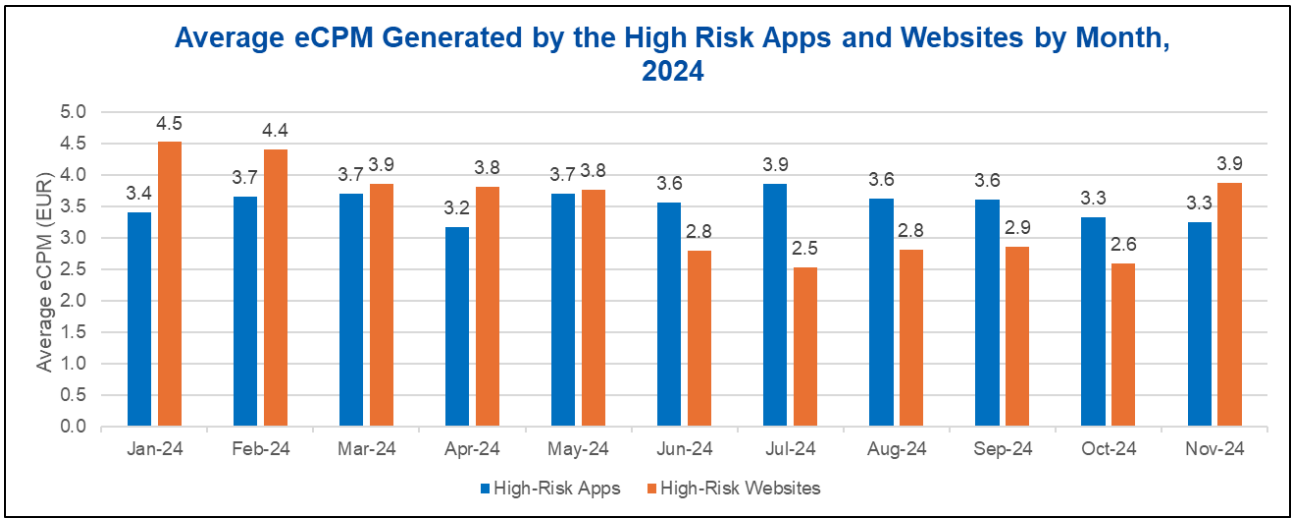


Figure 36: Comparison of average eCPM for High-Risk Apps and Websites by month, 2024

Unlike Illegal Apps and Websites, where apps consistently had a higher average eCPM, the difference between the value of ad units between apps and websites changed across the 2024 Ad Monitoring Exercise. The average eCPM generated by High-Risk Websites from January 2024 to May 2024 was higher than that of High-Risk Apps, with a median difference of 20.5 %. During this period, High-Risk Websites had a median of EUR 3.9 compared to EUR 3.7 for apps. From June to October 2024, the average eCPM generated by High-Risk Apps was higher than that of High-Risk Apps, with a median difference of 76.6 %. The median from January to October 2024 of the average eCPM for High-Risk Apps was EUR 3.6 while the median for High-Risk Websites was EUR 3.3.

6.4 Comparison of trends and results across years

This section identifies trends across multiple years of monitoring the impact of the EU MoU. As described in Section 2.8.4, the scope of each monitoring project was slightly different and covered different periods. The scope of each project is summarised below in Table 26. Throughout all years of the ad monitoring projects, the same 20 countries were included in the ad tracking. However, with the 2021 project, the UK changed from a monitored EU country to a control country after Brexit. Estimated ad revenue was first included in the reports with the 2020 project results, with the move from ad volume to estimated Ad Impressions.

Year	Websites		Dates Covered	Days	Illegal Website %	High Risk Website %	Apps	Dates Covered	Days	Illegal Apps%	High Risk Apps%	Ad Impressions	Ad Volume
	Desktop	Mobile											
H1 2019	7 627	0	1Jan19 - 30Jun19	181	60 %	40 %	0	N/A					x
2020	8 143	8 143	1Jan20 - 6Oct20	280	59 %	41 %	0	N/A				x	
2021	5 758	5 758	1Jan21 - 30Sep21	273	43 %	57 %	538	17May21 - 20Sep21	137	27 %	73 %	x	
Q4 2023*	4 992	4 992	1Sep23 - 20Nov23	81	43 %	57 %	437	1Sep23 - 20Nov23	81	57 %	43 %	x	
2024	7 250	7 250	1Jan24 - 24Nov24	325	44 %	56 %	398	1Jan24 - 24Nov24	325	60 %	40 %	x	

Table 26: Scope of EU MoU ad monitoring projects, 2019-2024
** report for Q4 2023 provided to the EUIPO but not published*

Key White Bullet technology improvements throughout the years have also impacted some of the variations from year to year. These will be discussed further in the relevant sections below.

6.4.1 Brands trend analysis

Table 27 below shows the trend in the number of unique brands and Major Brands, as well as the EU median for percentages of EU Brands over the years monitored.

Monitoring Period	Total Brands	Major Brands	EU Median for EU Brands % of Total Major Brands
H1 2019	3 847	546	37 %
2020	3 317	561	33 %
2021	8 076	941	37 %
Q4 2023	1 106	185	36 %
2024	107 144	4 259	16 %

Table 27: Brands trend analysis by year – websites

No real decrease was seen in the number of brands or Major Brands on Monitored Websites over the years. The variation in total brands and Major Brands in each monitoring period is probably a combination of the number of websites monitored, the length of the monitoring period as shown in Table 26, and (in some cases) enhancements in ad harvesting technology. Enhancements in 2021 resulted in the automatic identification of brands from Sponsored Content boxes, increasing the total of brands and Major Brands. The large increase in total brands in 2024 is related to the new technology introduced in Q3 2024, in which the system automatically clicked through from ads to identify advertisers based on the domain of the landing pages (see the methodology in Section 2.3 for details).

6.4.2 Ad Intermediaries trend analysis

Table 28 shows the trend in the number of unique Ad Intermediaries and the EU median for percentages of EU Brands over the years monitored.

Monitoring Period	Total Ad Intermediaries	EU Median for EU Ad Intermediaries % of Total
H1 2019	4 752	16 %
2020	8 345	14 %
2021	908	21 %
Q4 2023	1 114	11 %
2024	2 007	13 %

Table 28: Ad Intermediaries trend analysis by year – websites

The higher counts prior to 2021 are partly a reflection of the initial methodology for categorising Ad Intermediaries, in which all domains captured in the ad path were given equal priority. Starting in 2021, a two-tier classification system was established identifying each Ad Intermediary with a top-level category such as Ad Tech and Ad Serving. At the same time, Ad Intermediaries categorised as domain hosts were excluded from reporting as less relevant to the delivery of advertising.

2021 also saw active mergers and acquisition activity relating to Ad Intermediaries, with nearly USD 16 billion in the first quarter alone ([51]). The initial impact is likely to have resulted in fewer Ad Intermediaries represented in the data, although new Ad Intermediaries would eventually arise with technological innovations.

([51]) Denysenko, Sergii, “Adtech Investment Is Growing — Here's How Adtech Companies Can Take Advantage”, Forbes, 9 September 2021.

6.4.3 Branded Advertising Ad Type trend analysis

Figure 37 compares the Ad Type percentages of ad volume (H1 2019) or estimated Ad Impressions (2020-2024) across all Monitored Websites.

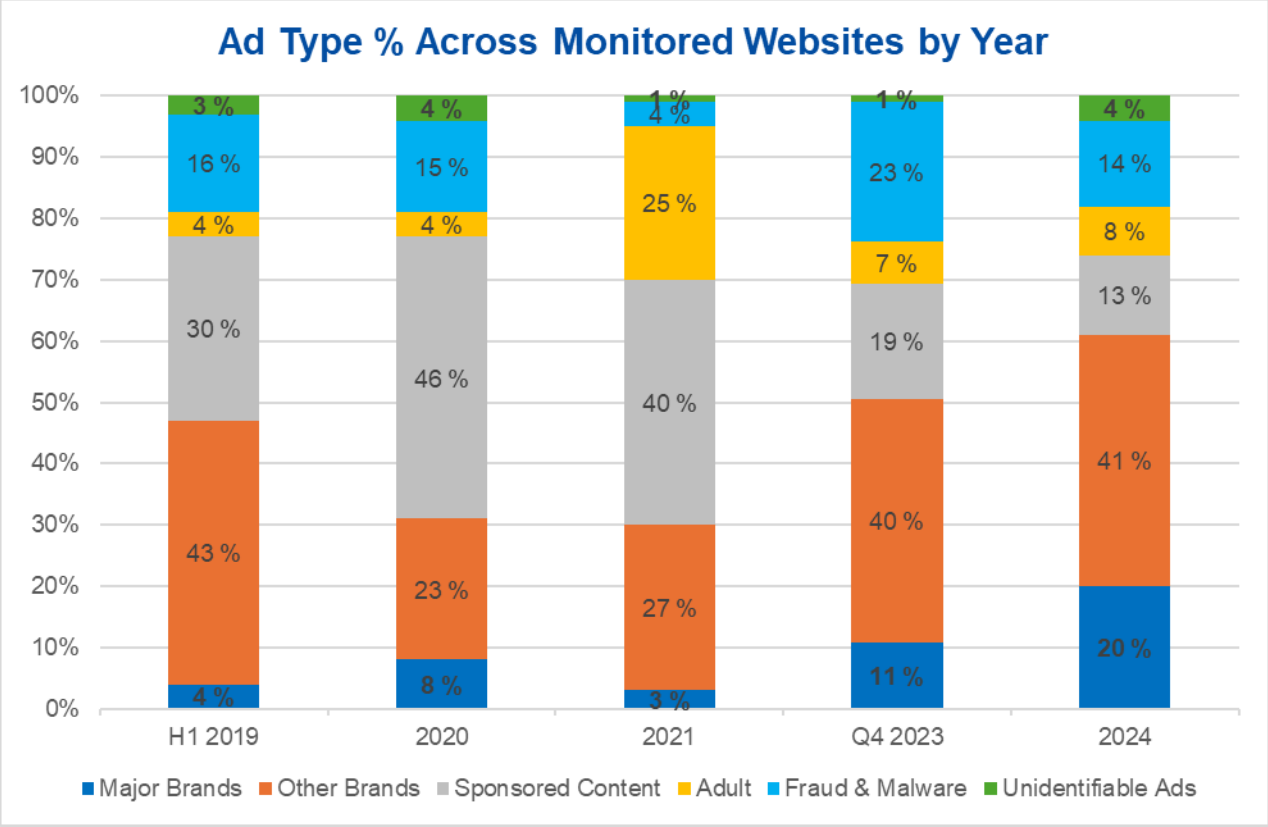


Figure 37: Ad Type percentage across all Monitored Websites, H1 2019-2024

Total Branded Advertising was highest in 2024 (61 % of total estimated Ad Impressions), with an increase of 30 % from H1 2019 (47 % of ad volume). Branded Advertising was lowest in both 2020 (31 %) and 2021 (30 %) when overall advertising was probably impacted by COVID-19.

The percentage of estimated Ad Impressions for Major Brand ads was highest in 2024 (20 %), an increase of 400 % from H1 2019. Major Brand advertising was lowest in 2021 (3 %). Note that coordinated industry programmes for outreach to Major Brands on piracy websites in the EU had effectively stopped by Q4 2023, perhaps contributing to the increases in estimated Ad Impressions for Major Brands. There was a 567 % increase in estimated Major Brands Ad Impressions from 2021 to 2024 (when the figure was 20 %).

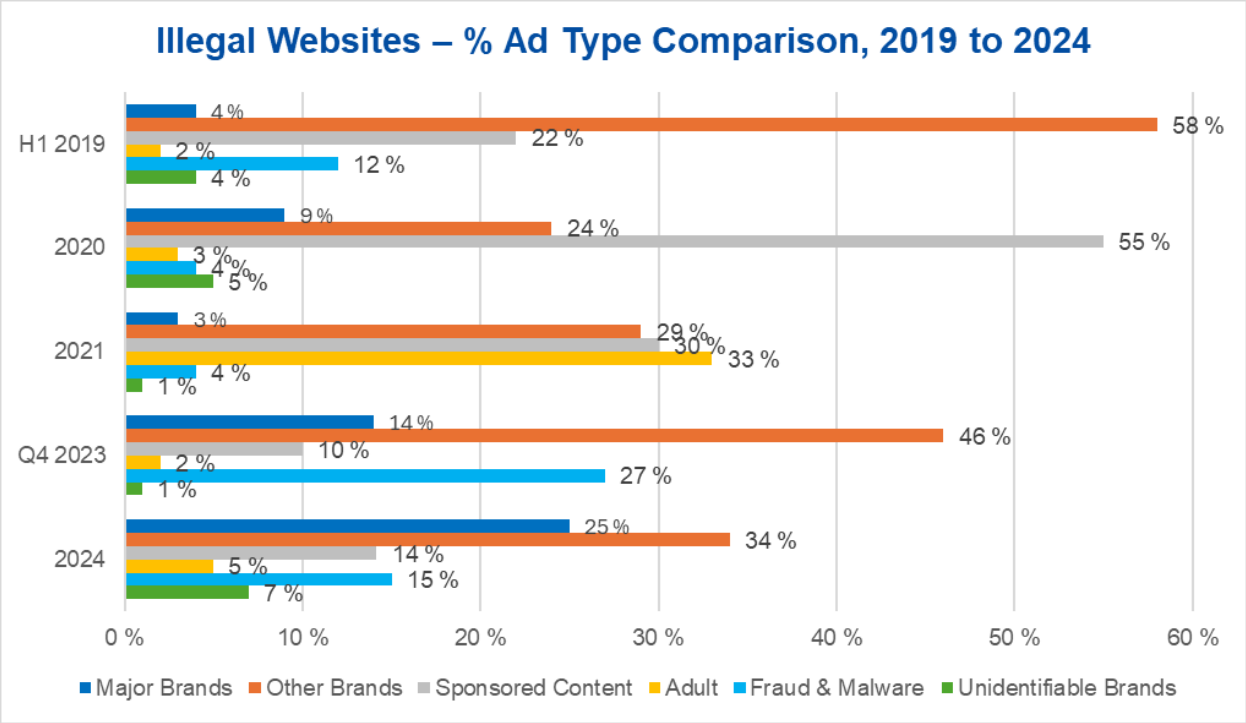
Sponsored Content was highest in 2020 (46 %) and 2021 (40 %). 2021 also had the highest percentage of adult ads (25 %) for the monitored periods compared. Fraud & Malware was highest in Q4 2023 (23 %) and lowest in 2021 (4 %). In the remaining monitoring periods, Fraud & Malware was in the range of 14-16 % of overall estimated Ad Impressions across all Monitored Websites.

Figure 38 compares the Ad Type percentages of ad volume (H1 2019) or estimated Ad Impressions (2020-2024) for Illegal Websites and High-Risk Websites.

Total Branded Advertising was highest on Illegal Websites in H1 2019 at 62 % of ad volume, while High-Risk Websites had the highest Branded Advertising in 2024 (64 % of estimated Ad Impressions). Both had the lowest Branded Advertising in 2020 and 2021, although Illegal Websites had slightly higher estimated Ad Impressions (33 % in 2020, 30 % in 2021) than did High-Risk Websites, which had 29 % in both years.

The percentage of Major Brand advertising was higher on Illegal Websites in 2020 (9 %), Q4 2023 (14 %), and 2024 (25 %) compared to High-Risk Websites (7 % in 2020, 8 % in Q4 2023, and 14 % in 2024).

Sponsored Content was highest for Illegal Websites in 2020, with 55 % of estimated Ad Impressions, and for High-Risk Websites in 2021, with 51 % of estimated Ad Impressions. High-Risk Websites had more significant Fraud & Malware advertising in H1 2019 (18 %) and 2020 (29 %) than did Illegal Websites (12 % in H1 2019, 3 % in 2020). However, Illegal Websites' profile for Fraud & Malware advertising in Q3 2023 (27 %) and 2024 (15 %) surpassed that of High-Risk Websites (20 % in Q4 2023, 13 % in 2024). Adult ads were generally low (2-5 %) for Illegal Websites, except for a high of 33 % in 2021. Adult advertising was highest on High-Risk Websites in 2021 (17 %), but was also higher than Illegal Websites in Q4 2023 and 2024 (11 % in both periods).



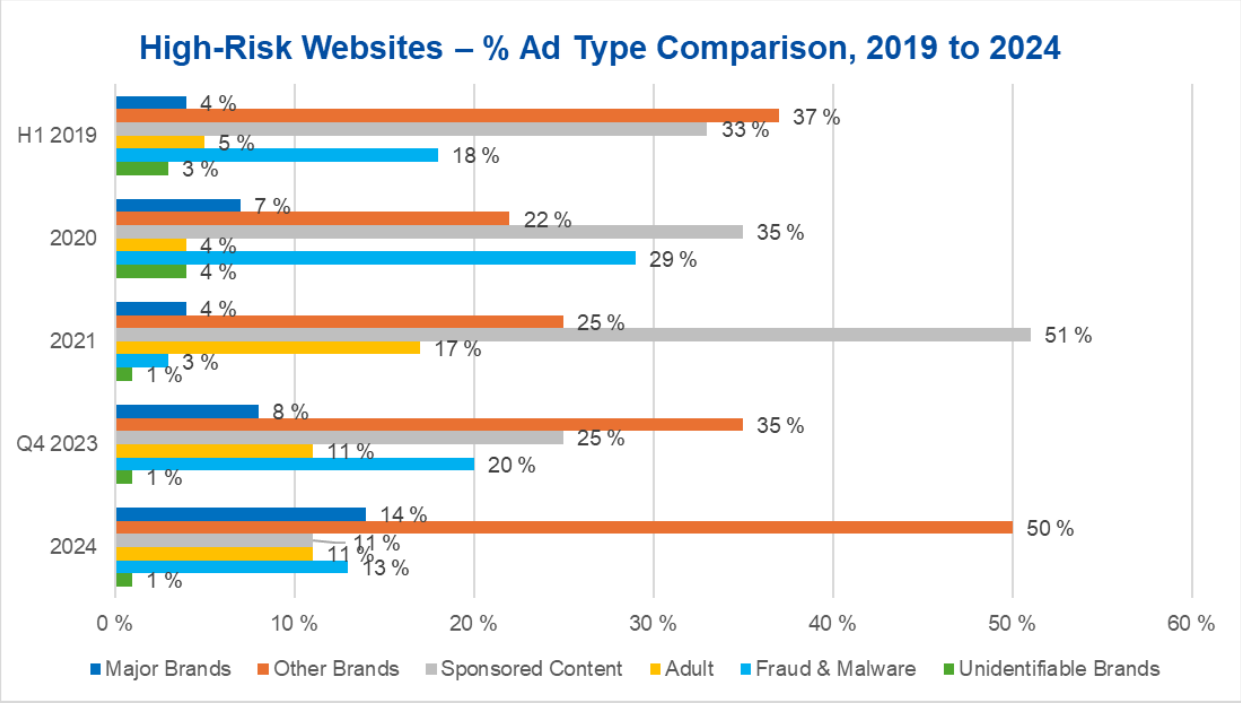


Figure 38: Ad Type percentage across Illegal and High-Risk Websites, H1 2019-2024

6.4.4 Impact of PIPCU IWL trend analysis

Ad Type analysis also provides insights into trends in the impact of specific IWLs within the originating countries, as well as across the rest of the monitored EU countries and the control countries. The PIPCU IWL has been included in each of the monitored periods from 2020 to 2024. White Bullet first subscribed to WIPO ALERT in June 2021, and the report for 2021 correlated the WIPO ALERT (Italy) and WIPO ALERT (Lithuania) IWLs with domains already being tracked in the 2021 Monitored Websites. The trend analyses for WIPO ALERT country IWLs in Sections 6.4.5 and 6.4.6 below are therefore based on a comparison of 2021 and 2024.

Table 29 provides a recap from 2020 to 2024 of the Ad Types for the UK, Italy, Lithuania, the EU median and the US. This data is provided as a reference for the discussion in connection with each of the IWL analyses below.

Ad Types Across All Monitored Websites, Selected Countries and Years Used in IWL Trend Analyses								
Year	Country	Major Brands	Other Brands	Sponsored Content	Adult	Fraud & Malware	Unidenti-fiable Ads	Total Branded
2020	EU Median	7 %	24 %	49 %	3 %	5 %	2 %	33 %
	UK	9 %	26 %	47 %	5 %	12 %	2 %	35 %
	US	3 %	23 %	52 %	5 %	16 %	1 %	26 %
2021	EU Median	3 %	27 %	38 %	17 %	2 %	1 %	34 %
	Italy	2 %	26 %	32 %	33 %	6 %	1 %	28 %
	Lithuania	1 %	14 %	71 %	11 %	0 %	2 %	15 %
	UK	4 %	31 %	44 %	18 %	3 %	1 %	34 %
	US	2 %	33 %	36 %	25 %	4 %	1 %	35 %
Q3 2023	EU Median	8 %	61 %	13 %	4 %	9 %	1 %	69 %
	UK	11 %	36 %	15 %	5 %	31 %	2 %	47 %
	US	11 %	35 %	21 %	11 %	21 %	1 %	47 %
2024	EU Median	16 %	51 %	9 %	4 %	13 %	2 %	68 %
	Italy	29 %	32 %	10 %	4 %	21 %	5 %	62 %
	Lithuania	5 %	30 %	64 %	1 %	1 %	0 %	35 %
	UK	27 %	37 %	11 %	7 %	11 %	8 %	64 %
	US	18 %	42 %	11 %	10 %	15 %	4 %	59 %

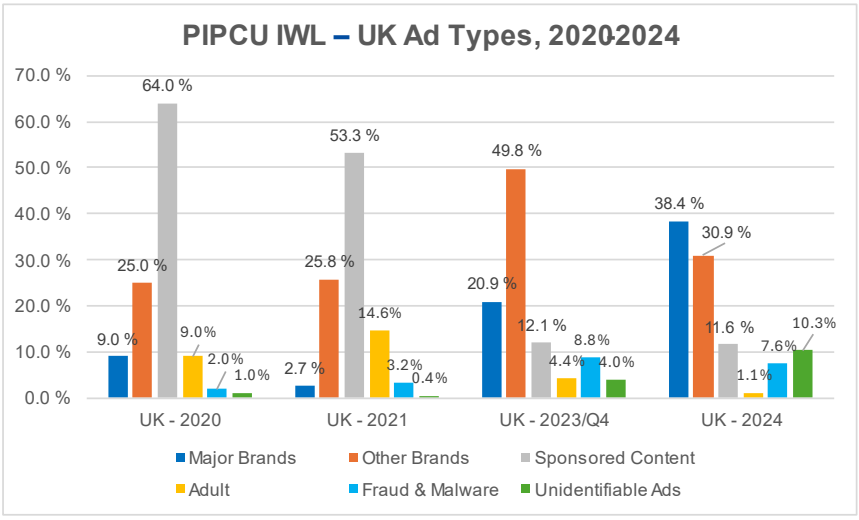
Table 29: Ad Types across all Monitored Websites, selected countries and years used in IWL trend analyses

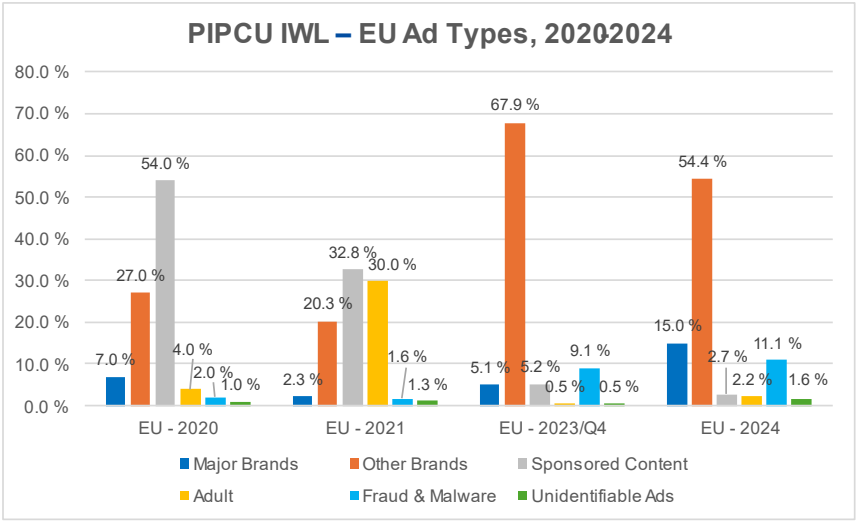
IWL lists are one of the tools used to help demonetise pirate and Illegal Websites. The IWL lists are distributed to advertisers in a particular country for the purpose of preventing Branded Advertising on the pirate and Illegal Websites. To be most effective, IWL programmes also require two additional components: compliance monitoring for brands advertising on IWL websites and outreach to brands found to have placed ads on IWL websites. Adoption of a specific IWL list by a country's advertisers should lead to a lower level of total Branded Advertising in the specific country, and of Major Brand advertising, for which ad spend is often highest. A specific EU IWL would not necessarily be expected to have an impact on other countries, particularly the control country of the US. Where IWLs successfully decrease percentages of Branded Advertising and/or Major Brand advertising, it is also interesting to note which Ad Types(s) increase proportionally.

As the analyses here demonstrate, there was an increase in Major Brand advertising on IWL websites in the countries with designated IWL programmes in 2024. In each case, the majority of Major Brand advertising on the IWL domains was due to a small number of global advertisers, none of which is headquartered in the IWL countries.

Figure 39 shows the trend for the PIPCU IWL from 2020 to 2024 in three sections. The first part shows the impact of the PIPCU IWL in the UK. The second part shows the impact of the PIPCU IWL in the monitored EU countries (EU median). The third part shows the impact of the PIPCU IWL in the US.

In the UK itself, total Branded Advertising was lower for the PIPCU IWL websites in 2020 (34 %) and 2021 (28.5 %) than across all monitored domains, as shown in Table 29 (35 % in 2020, 34 % in 2021). While Major Brand advertising was the same on PIPCU IWL websites in 2020 (9 %) as across all monitored domains, it was lower in 2021 (2.7 %) than across all monitored domains (4 %). In 2020 and 2021, the Branded Advertising in the UK appears to have been represented by Sponsored Content and adult advertising. The percentage of Sponsored Content on the IWL websites in the UK was higher (64 % in 2020, 53.3 % in 2021) than across all Monitored Websites (47 % in 2020, 44 % in 2021). Adult advertising also increased in 2020 on the PIPCU IWL (9 %) compared to across all monitored domains (5 %) but was lower in 2021 (14.6 %) than across all Monitored Websites (18%).





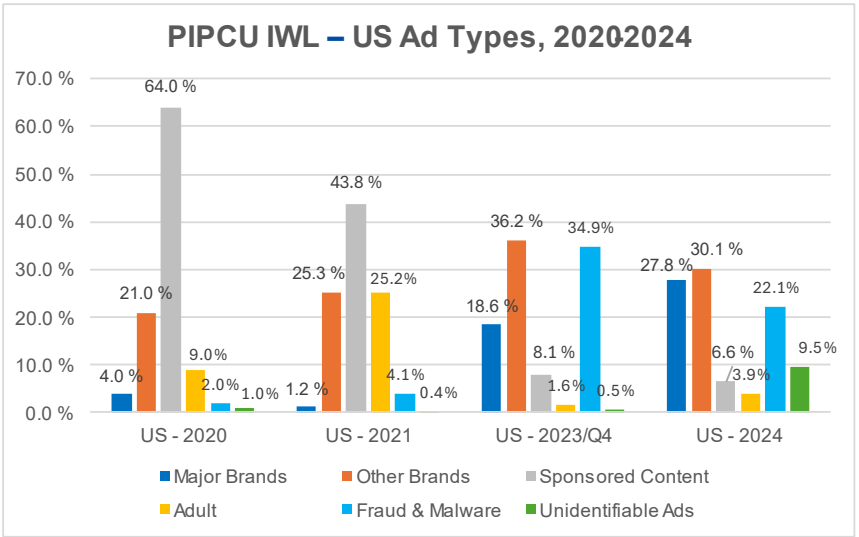


Figure 39: PIPCU IWL – Trend analysis across UK, Other EU, and US, 2020-2024

Perhaps surprisingly, Branded Advertising and Major Brand advertising from the UK were higher on the PIPCU IWL websites in Q3 2023 and 2024 than across all Monitored Websites. In Q4 2023, Branded Advertising in the UK was 50 % higher across the PIPCU IWL websites (70.7 %) than across all Monitored Websites (47 %). In 2024, Branded Advertising was slightly higher on the PIPCU IWL websites (69.3 %) than across all Monitored Websites (64 %). For Q4 2023, Major Brand advertising was 90 % higher across the PIPCU IWL websites (20.9 %) than across all Monitored Websites (11 %). In 2024, Major Brand advertising was 42 % higher across the PIPCU IWL websites (27 %) than across all Monitored Websites (27 %).

The increase in Branded Advertising proportions on the PIPCU IWL websites in Q4 2023 and 2024 significantly reduced the proportions of both Sponsored Content and Fraud & Malware on the PIPCU IWL websites from the UK compared to all Monitored Websites. For example, in Q3 2023, Fraud & Malware was 31 % across all Monitored Websites but just 8.8 % across the PIPCU IWL websites. In 2024, Fraud & Malware was 11 % across all Monitored Websites for the UK but 7.6 % across the PIPCU IWL websites.

The median for EU Branded Advertising was slightly higher in 2020 on PIPCU IWL websites (34 %) in 2020 than across all Monitored Websites (33 %) but lower in 2021 (22.6 %) than across all Monitored Websites (34%) ([52]). The EU Major Brand advertising was the same in 2020 (7 %) across both PIPCU IWL websites and all monitored domains, but in 2021 it was slightly lower on PIPCU IWL websites (2.3 %) than on all monitored domains (3 %). In 2021, the primary displacement for Branded Advertising was adult advertising, with 30 % from PIPCU IWL websites compared to 17 % across all Monitored Websites.

In both Q4 2023 and 2024, the EU Branded Advertising was higher across the PIPCU IWL websites than across all Monitored Websites, but Major Brand advertising was lower. In Q4 2023, the EU Branded Advertising across PIPCU IWL websites was 73 % compared to 69 % across all Monitored Websites. Similarly in 2024, the EU Branded Advertising across PIPCU IWL websites was 68 % compared to 69.4 % across all Monitored Websites. In contrast, the 2023/Q4 EU Major Brand advertising across PIPCU IWL websites (5.1 %) was 36 % lower than across all Monitored Websites

([52]) Note that the EU median in Table 29 for all Monitored Websites is assessed across all EU monitored countries, and therefore includes Italy and Lithuania, as well as UK in 2020. The individual countries are excluded in the figures provided for individual IWL analyses, but the statistics comparing to Table 29 Ad Type percentages across all Monitored Websites or to 'EU median' include the specific countries.

(8%). In 2024, the EU Major Brand advertising was 6 % lower across the PIPCU IWL websites (15 %) than across all Monitored Websites (16 %).

In contrast to the Ad Type profiles for the EU median in 2020 and 2021, the Ad Type profiles for the EU median in Q4 2023 and 2024 show that Sponsored Content was displaced by Branded Advertising. For Q4 2023, the EU median for Sponsored Content was 60 % lower across PIPCU IWL websites (5.2 %) than across all Monitored Websites (13 %). In 2024, the EU median for Sponsored Content was 70 % lower across PIPCU IWL websites (2.7 %) than across all Monitored Websites (9 %).

In the US, Branded Advertising was lower across the PIPCU IWL websites in both 2020 (25 %) and 2021 (26.5 %) than across all Monitored Websites (26 % in 2020, 35 % in 2021). Major Brand advertising was higher for the US across the PIPCU IWL websites in 2020 (4 %) than across all Monitored Websites (3 %), but lower in 2021 (1.2 %) than across all Monitored Websites (2 %). The reduced Branded Advertising on PIPCU IWL websites in 2020 and 2021 in the US was offset by significant increases in Sponsored Content advertising. In 2020, Sponsored Content on PIPCU IWL websites from the US (64 %) was 23 % higher than across all Monitored Websites (52 %). In 2021, Sponsored Content on PIPCU IWL websites from the US (43.8 %) was 22 % higher than across all Monitored Websites (36 %).

In both Q4 2023 and 2024, Major Brand and Fraud & Malware advertising from the US was higher on the PIPCU IWL websites, while Sponsored Contented was lower compared to across all Monitored Websites. In Q4 2023, Major Brand advertising from the US on PIPCU IWL websites (18.6 %) was 69 % higher than across all Monitored Websites (11 %). 2024 Major Brand advertising from the US on PIPCU IWL websites (27.8 %) was 54 % higher than across all Monitored Websites (18 %). In addition, Q4 2023 total Branded Advertising from the US on PIPCU IWL websites (54.8 %) was 17 % higher than across all Monitored Websites (47 %).

In Q4 2023, Fraud & Malware advertising from the US on PIPCU IWL websites (34.9 %) was 66 % higher than across all Monitored Websites (21 %). 2024 Fraud & Malware advertising from the US on PIPCU IWL websites (22.1 %) was 47 % higher than across all Monitored Websites (15 %). The increases in US Major Brand and Fraud & Malware Advertising in the US in Q4 2023 and 2024 displaced Sponsored Content advertising. In Q4 2023, US Sponsored Content was 61 % lower across PIPCU IWL websites (8.1 %) than across all Monitored Websites (21 %). In 2024, Sponsored

Content was 40 % lower across PIPCU IWL websites (6.6 %) than across all Monitored Websites (11 %).

6.4.5 Impact of WIPO ALERT (Italy) IWL trend analysis

Figure 40 analyses the trends in the impact of the WIPO ALERT (Italy) IWL in 2021 compared to 2024. Details are provided for the Ad Type impacts in Italy, in the other monitored EU countries ([53]) and in the US.

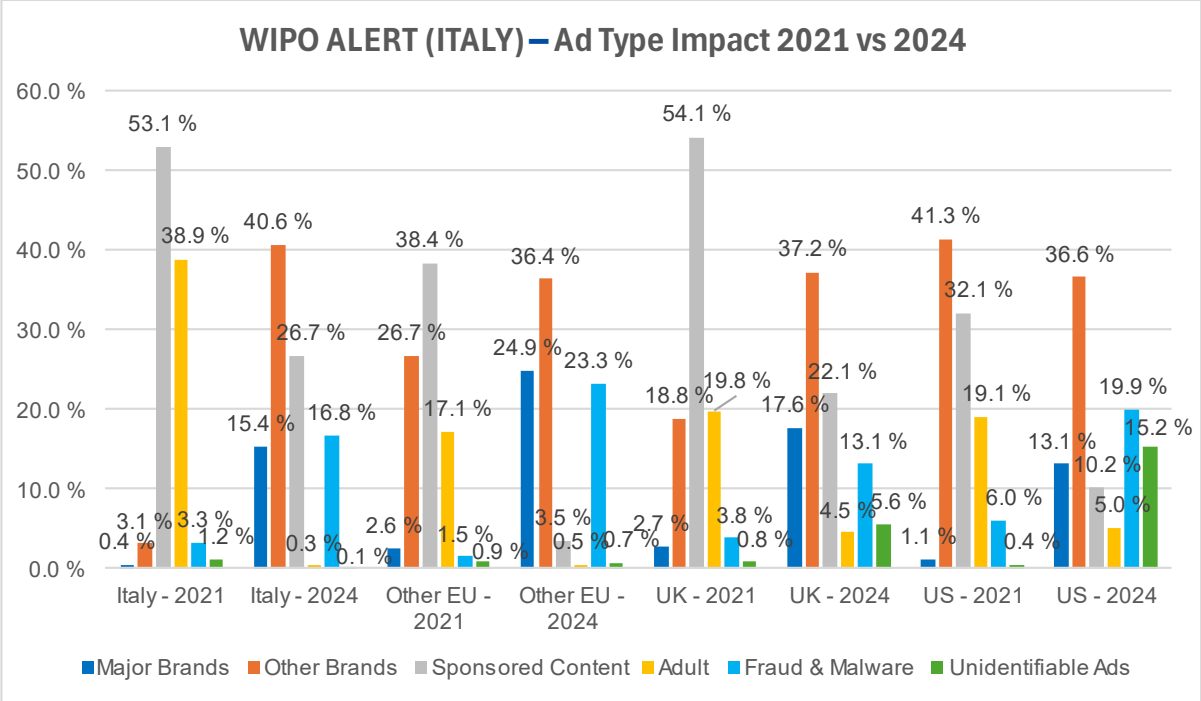


Figure 40: WIPO ALERT (Italy) – Trend analysis across Italy, Other EU Countries, and US, 2021 versus 2024

Despite significant increases in both Branded Advertising and Major Brand advertising in Italy from 2021 to 2024, both were lower on the WIPO ALERT (Italy) websites than across all Monitored Websites in both 2021 and 2024. In 2021, Branded Advertising from Italy on the WIPO ALERT (Italy) websites (3.5 %) was 88 % lower than across all Monitored Websites (28 %) shown in Table 29

([53]) The Ad Type percentages for Other EU shown in Figure 40 are a median for the Ad Types of the monitored EU countries, excluding Italy.

above. Similarly, 2021 Major Brand advertising from Italy on the WIPO ALERT (Italy) websites (0.2 %) was 80 % lower than across all Monitored Websites (2 %). In 2024, Branded Advertising from Italy on the WIPO ALERT (Italy) websites (56 %) was 12.5 % lower than across all Monitored Websites (64 %). Similarly, 2024 Major Brand advertising from Italy on the WIPO ALERT (Italy) websites (15.4 %) was 47 % lower than across all Monitored Websites (29 %).

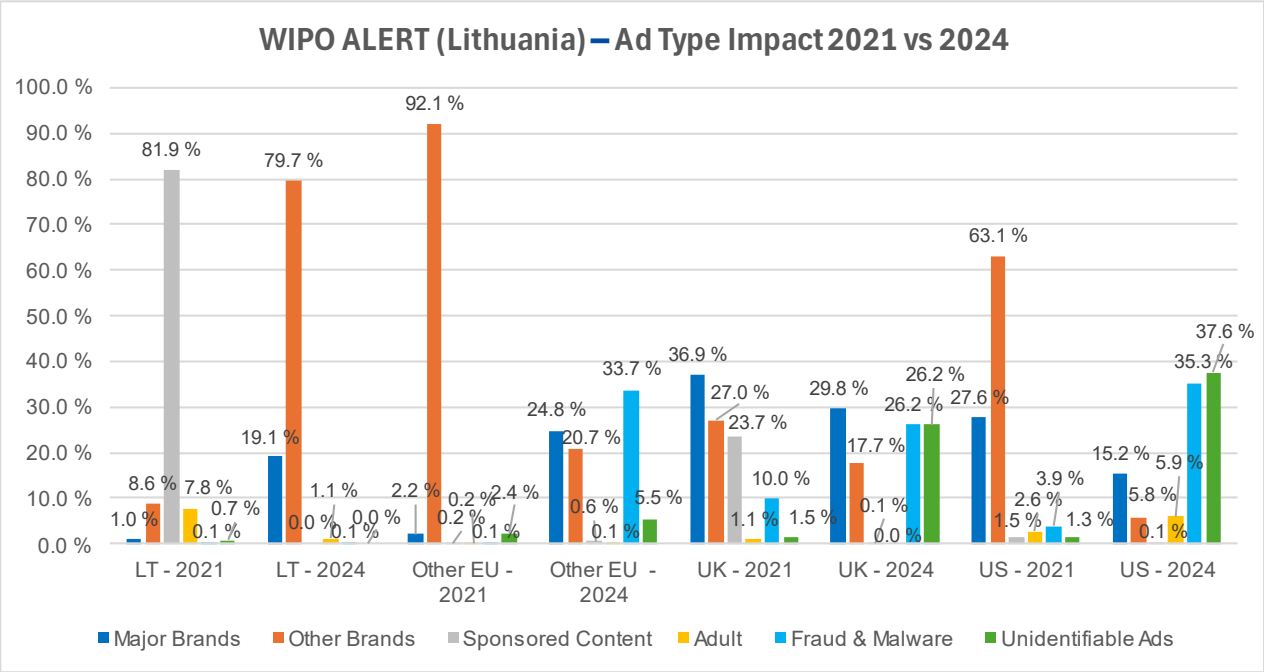
The median of Other EU Branded Advertising was lower in both 2021 and 2024 on the WIPO ALERT (Italy) websites than across all Monitored Websites, although the impact percentage was smaller than for Italy itself. In 2021, the Other EU Branded Advertising on the WIPO ALERT (Italy) websites (29.3 %) was 13.8 % lower than across all Monitored Websites (34 %) shown in Table 29 above. Similarly, 2021 Other EU Major Brand advertising on the WIPO ALERT (Italy) websites (2.6 %) was 13 % lower than across all Monitored Websites (3 %). In 2024, Other EU Branded Advertising on the WIPO ALERT (Italy) websites (56 %) was 9.9 % lower than across all Monitored Websites (68 %). However, Other EU Major Brand advertising in 2024 was 56 % higher on the WIPO ALERT (Italy) websites (24.9 %) than across all Monitored Websites (16 %).

In 2021, a lower level of Other EU Branded Advertising was offset by a higher level of Sponsored Content. However, by 2024, Fraud & Malware advertising had increased on the WIPO ALERT (Italy) websites, and there was virtually no Sponsored Content. In 2021, Other EU Sponsored Content on the WIPO ALERT (Italy) websites (38.4 %) was 20 % higher than across all Monitored Websites (32 %). However, in 2024 Other EU Sponsored Content was 65 % lower on the WIPO ALERT (Italy) websites (3.5 %) than across all Monitored Websites (10 %). In 2024, Other EU Fraud & Malware was 11 % higher on the WIPO ALERT (Italy) websites (23.3 %) than across all Monitored Websites (21 %).

Total Branded Advertising from the US was 21 % higher in 2021 on the WIPO ALERT (Italy) websites (42.4 %) than across all Monitored Websites (35 %) but was 16 % lower in 2024 on the WIPO ALERT (Italy) websites (49.7 %) than across all Monitored Websites (59 %). However, US Major Brand advertising was lower in both years across the WIPO ALERT (Italy) websites (1.1 % in 2021, 13.1 % in 2024) than across all Monitored Websites (2 % in 2021, 18% in 2024). The proportion of Fraud & Malware advertising from the US was 50 % higher in 2021 on the WIPO ALERT (Italy) websites (6 %) than across all Monitored Websites (4 %). US Fraud & Malware advertising increased significantly on both website sets by 2024, with the percentage on WIPO ALERT (Italy) websites (19.9 %) 33 % higher than across all Monitored Websites (15 %).

6.4.6 Impact of WIPO ALERT (Lithuania) IWL trend analysis

Figure 41 analyses the trends in the impact of the WIPO ALERT (Lithuania) IWL in 2021 compared to 2024. Details are provided for the Ad Type impacts in Lithuania, in the other monitored EU countries ([54]) and in the US.



In 2021, Branded Advertising from Lithuania on the WIPO ALERT (Lithuania) websites (9.6 %) was 36 % lower than across all Monitored Websites (15 %) shown in Table 29 above. Lithuania Major Brand advertising in 2021 was the same on both at 1 %. Major Brand advertising was lower in 2021 on the WIPO ALERT (Lithuania) websites in Lithuania than the median of the Other EU countries (2.2 %), in the UK (36.9 %), or in the US (15.2 %).

In 2021, Sponsored Content displaced Branded Advertising in Lithuania on the WIPO ALERT (Lithuania) websites, with 81.9 % of estimated Ad impressions. By 2024, Branded Advertising in

Figure 41: WIPO ALERT (Lithuania) – Trend analysis across Lithuania, Other EU Countries, and US, 2021 versus 2024

([54]) The Ad Type percentages for Other EU shown in Figure 41 are a median for the Ad Types of the EU monitored countries excluding Lithuania.

Lithuania expanded to 98.8 % of estimated Ad Impressions on the WIPO ALERT (Lithuania) websites, 182 % higher than across all Monitored Websites (35 %). 2024 Major Brand advertising in Lithuania on the WIPO ALERT (Lithuania) websites (19.1 %) was 282 % higher than across all Monitored Websites (5 %). Lithuania's 2024 Major Brand percentage on the WIPO ALERT (Lithuania) IWL websites was lower than the median of the Other EU Countries (24.8 %) and the UK (36.9 %), but higher than the US (15.2 %).

Notably, the 2024 percentages of Fraud & Malware advertising were higher across the WIPO ALERT (IWL) websites for the Other EU Countries, UK and US than across all Monitored Websites. Fraud & Malware was 159 % higher in 2024 for the median of the Other EU countries (33.7 %) on the WIPO ALERT (Lithuania) IWL websites than across all monitored countries (13 %). UK Fraud & Malware (26.2 %) was 138 % higher in 2024 on the WIPO ALERT (Lithuania) IWL websites than across all monitored countries (11 %). US Fraud & Malware (35.3 %) was 135 % higher in 2024 on the WIPO ALERT (Lithuania) IWL websites than across all monitored countries (15 %).

6.4.7 Branded Advertising sector trend analysis

Figure 39 shows the Top-level Sectors for Branded Advertising for each monitoring period. As described in 'Scope & methodology' (Section 2.3), in Q3 2024, website ad classification was updated to the IAB Ad Product Taxonomy. The new sectors are designated in the figure below by asterisks.

Gambling was the top sector in H1 2019 (52 %) and Q3 2023 (41 %), and second-ranked in 2020 (28 %), 2021 (25 %) and 2024 (15 %). Arts & Entertainment was second-ranked in H1 2019 (20 %) and Q4 2023, but top ranked in 2020 (32 %) and 2021 (43 %). Media, an IAB Ad Product Taxonomy

sector, was top ranked in 2024. The Media sector is related but not identical to Arts & Entertainment, which had 6 % in 2024.

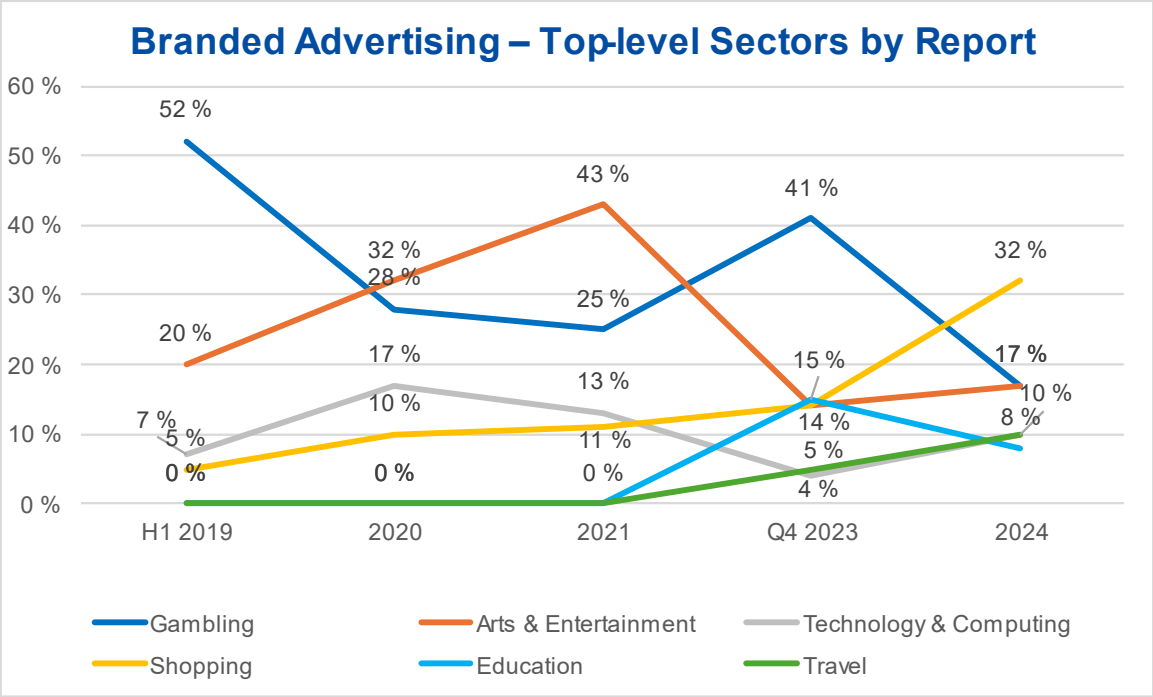


Figure 42: Branded Advertising sector analysis, H1 2019-2024
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*

Technology & Computing was the third-ranked sector in H1 2019 (7 %), 2020 (17 %) and 2021 (13 %). Shopping was the fourth-ranked sector in H1 2019 (5 %), 2020 (10 %) and 2021 (11 %). Education first appeared amongst the top-ranked sectors in 2023/Q4 (15 %) as second-ranked, before dropping to fifth place in 2024 (3 %).

Figure 40 shows the Top-level Sectors for Major Brand Advertising for each monitoring period. As for Branded Advertising, ad classification was updated in Q3 2024 to the IAB Ad Product Taxonomy. The new sectors are designated in the figure below by asterisks.

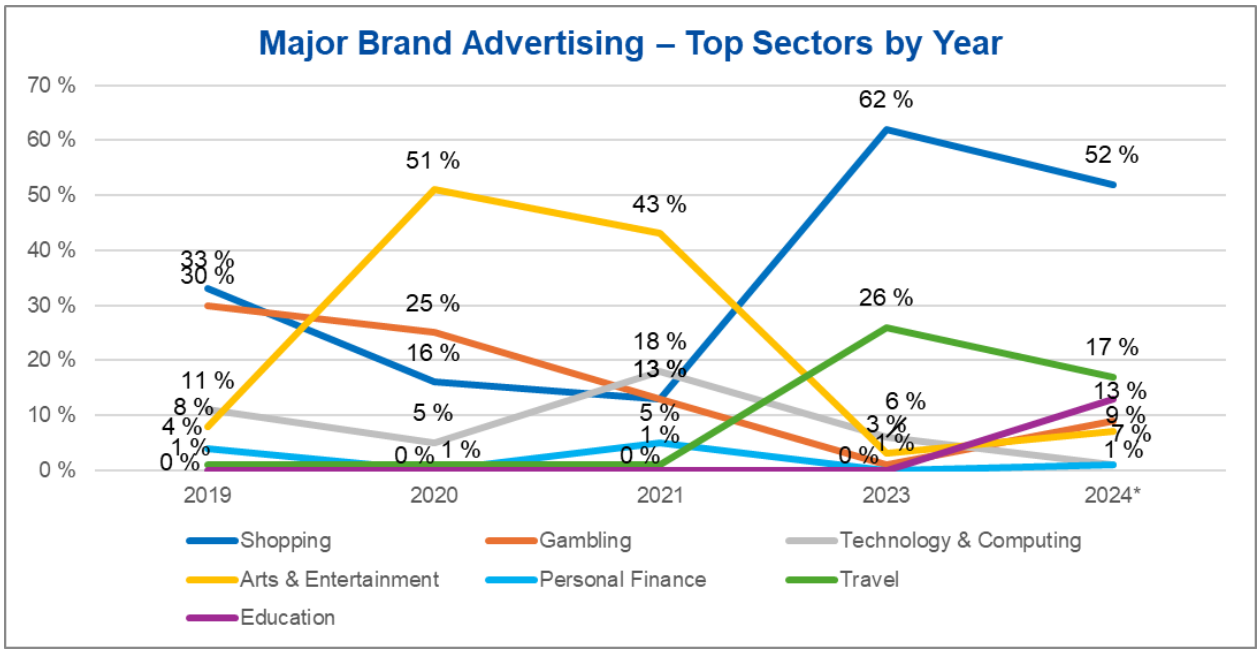


Figure 43: Major Brand advertising sector analysis, H1 2019-2024
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*

Shopping (33 %) was the top-ranked Major Brand sector in H1 2019 (33 %), Q4 2023 (62 %) and 2024 (32 %). Retail, a sector related to Shopping, was second in 2024 with 15 %. Arts & Entertainment was top ranked in 2020 (51 %) and 2021 (43 %). Gambling sector was second-ranked in H1 2019 (30 %) and 2020 (25 %), tied for third in 2021 (13 %), dropping to fifth place in Q4 2023 (1 %) before rising again to third in 2024 (13 %).

Technology & Computing was third-ranked in H1 2019 (11 %), fourth-ranked in 2020 (5 %), second-ranked in 2021 (18 %), third-ranked in 2023/Q4 (6 %), and seventh-ranked in 2024. Travel was second-ranked in Q4 2023 (26 %) and fourth-ranked in 2024 (11 %). Personal Finance was fifth-ranked in H1 2019 (4 %) and 2021 (5 %). Education only appears among the top-ranked Major Brand sectors in 2024 (11 %) as fourth-ranked sector.

6.5 Comparison of app versus website trends and results, 2021 to 2024

This section focuses on two key metrics to analyse trends over time on apps compared to website metrics. Apps have been monitored for only a limited portion of the EU MoU monitoring projects, starting in the second half of 2021. Therefore, the analyses below are focused primarily on comparing the 2021 and 2024 monitoring periods.

6.5.1 Ad Type comparison, apps versus websites

Figure 44 below shows the Ad Types for websites and apps in 2021 and 2024.

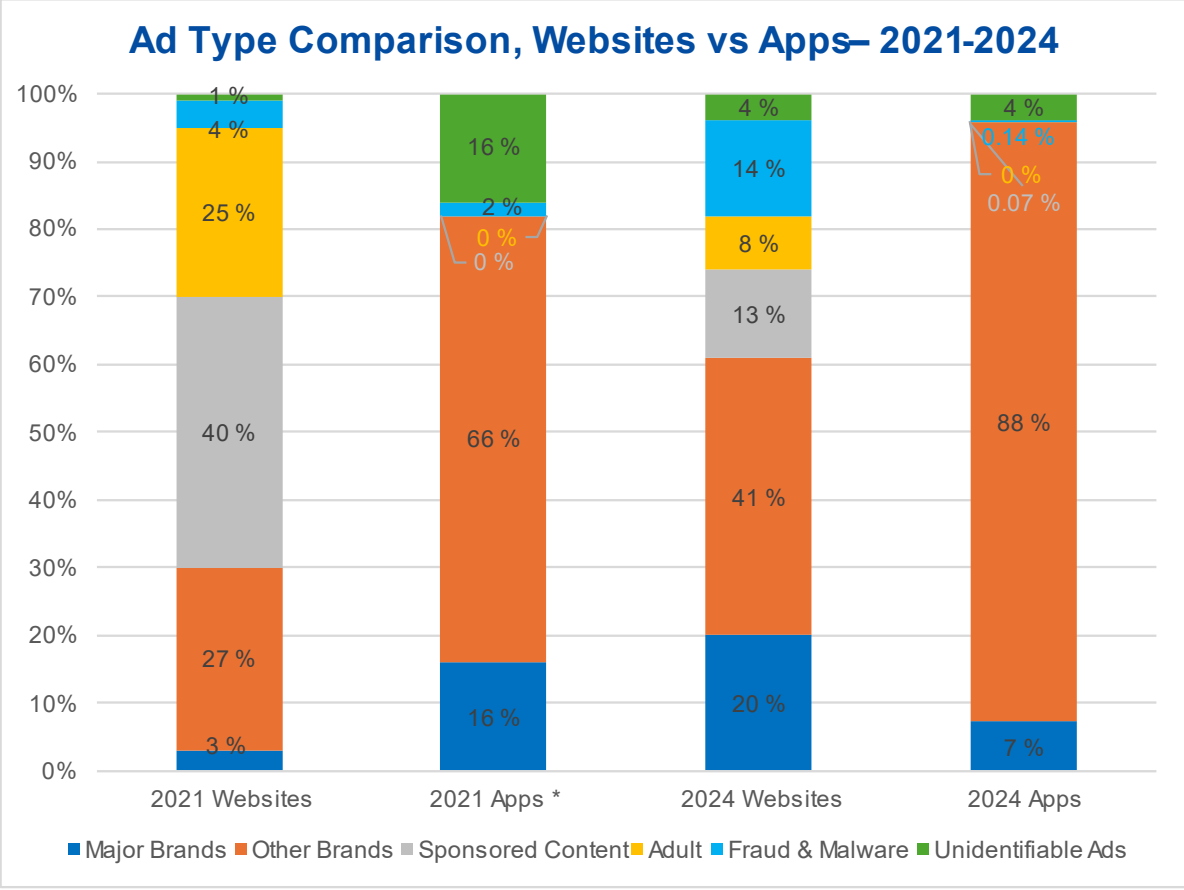


Figure 44: Ad Type comparison, websites versus apps, 2021-2024
** Apps monitored in H2 2021 only*

Branded Advertising dominated app estimated Ad Impressions in both 2021 and 2024, while website advertising had a greater diversity of Ad Types. Branded Advertising was significantly higher on apps in both 2021 (82 %) and 2024 (96 %) compared to websites (30 % in 2021 and 61 % in 2024). While total Branded Advertising for apps increased 17 % from 2021 to 2024, websites increased 103 %.

The percentage of estimated Ad Impressions for Major Brand advertising was 433 % higher on apps (16 %) in 2021 than on websites (3 %). By 2024, the percentage of estimated Ad Impressions for Major Brand advertising was 173 % higher on websites (20 %) than on apps (7 %). Major Brand advertising on websites increased 567 % from 2021 to 2024, while that on apps decreased 54 %.

Virtually no estimated Ad Impressions for Sponsored Content or Adult advertising were found on apps in either 2021 or 2024. By contrast, Sponsored Content represented 40 % of estimated Ad Impressions on websites in 2021 and 13 % in 2024. Adult advertising on websites was 13 % in 2021 and 8 % in 2024.

Fraud & Malware advertising on websites was 4 % in 2021 and increased by 250 % to 14 % in 2024. On apps, Fraud & Malware was 2 % in 2021 and was just 0.14 % of estimated Ad Impressions in 2024.

6.5.2 Branded Advertising top sector trends, apps versus websites, 2021-2024

Table 30 provides a comparison of the Top-level Sectors for Branded Advertising on websites and apps for 2021, Q4 2023 and 2024.

Branded Advertising Sectors, Websites vs Apps, 2021-2024						
Sector	2021		Q4 2023		2024	
	Websites	Apps	Websites	Apps	Websites	Apps
Arts & Entertainment	43 %	54 %	14 %	55 %	6 %	45 %
Technology & Computing	13 %	23 %	4 %	43 %	4 %	39 %
News	0 %	7 %	0 %	0 %	0 %	0 %
Shopping	11 %	5 %	14 %	1 %	11 %	1 %
Business	2 %	4 %	2 %	0 %	1 %	3 %
Personal Finance	2 %	3 %	2 %	1 %	1 %	4 %
Gambling **	25 %	1 %	41 %	0 %	15 %	1 %
Education	0 %	0 %	15 %	0 %	3 %	0 %
Media *	0 %	0 %	0 %	0 %	23 %	0 %

Table 30: Branded Advertising Top-level Sectors, websites versus apps, 2021-2024
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*
In 2021, apps were monitored in H2 only

Branded Advertising in apps was dominated in all periods by the Arts & Entertainment sector, with 54 % in 2021, 55 % in 2023/Q4 and 45 % in 2024. For websites, this sector was top ranked only in 2021 (43 %), tied for third place in 2023/Q4 (14 %) and fourth-ranked in 2024 (6 %). However, the related Media sector was first-ranked for websites in 2024, with 23 %.

Technology & Computing was the second-ranked sector for apps in all periods, with 23 % in 2021, 43 % in 2023/Q4 and 39 % in 2024. For websites, Technology & Computing was third-ranked in 2021 (13 %), fourth-ranked in 2023/Q4 (4 %), and fifth-ranked in 2024 (4 %).

Gambling was a significant sector for websites in all periods, but not for apps. Gambling was top ranked in Q4 2023 (41 %) for websites and was the second-ranked sector in 2021 (25 %) and 2024 (15 %). For apps, Gambling was seventh-ranked in 2021 (1 %) and tied for fifth place in 2024 (1 %). Gambling did not appear among the top-ranked Branded Advertising sectors for apps in Q4 2023.

Shopping was an important sector for websites in all periods, but was less so for apps. In 2021, Shopping was fourth-ranked for both websites (11 %) and apps (5 %). In Q4 2023, Shopping was tied for third place for websites (14 %). Although Shopping was also tied for third place for apps in Q4 2023, it represented just 1 %, as the top two sectors comprised 98 % of all estimated Ad Impressions.

The Business sector was fifth-ranked in 2021 for both apps (4 %) and websites (2 %). In Q3 2023, the Business sector was also tied for fifth place for websites (2 %) but did not appear among the top-ranked sectors for apps. In 2024, Business was fourth-ranked for apps (3 %) but tied for seventh place for websites (1 %).

Personal Finance appeared consistently among the top sectors for both apps and websites across all periods but was lower-ranked. In 2021, Personal Finance was tied for sixth place for apps (3 %) and fifth place for websites (2 %). In Q3 2023, Personal Finance rose to a tie for third place for apps (1 %) and was again tied for fifth place for websites (2 %). In 2024, the rank for apps was again third (4 %), but dropped to seventh for websites (1 %).

Education appeared among the top-ranked Branded Advertising sectors for websites as second-ranked in 2023/Q4 (15 %) and sixth-ranked in 2024 (3 %). Education did not appear among the top-ranked Branded Advertising sectors for apps in any period.

6.5.3 Major Brand advertising top sector trends, apps versus websites, 2021-2024

Table 31 provides a comparison of the Top-level Sectors for Major Brand Advertising for websites and apps for 2021, Q4 2023 and 2024.

Major Brand Sectors, Websites vs Apps, 2021-2024						
Sector	2021		Q4 2023		2024	
	Websites	Apps	Websites	Apps	Websites	Apps
Arts & Entertainment	43 %	37 %	3 %	3 %	4 %	17 %
Shopping	13 %	21 %	62 %	27 %	32 %	6 %
Business	1 %	19 %	0 %	20 %	0 %	26 %
Technology & Computing	18 %	14 %	6 %	5 %	1 %	4 %
Personal Finance	5 %	3 %	0 %	35 %	0 %	5 %
Gambling **	13 %	2 %	1 %	0 %	13 %	10 %
Travel	1 %	1 %	26 %	0 %	11 %	15 %
Education	0 %	0 %	0 %	0 %	8 %	1 %
Retail *	0 %	0 %	0 %	0 %	15 %	0 %

Table 31: Major Brand advertising Top-level Sectors, websites versus apps, 2021-2024
** sector included in IAB Ad Product Taxonomy; ** sector included in both IAB taxonomies*
In 2021, apps were monitored in H2 only

In contrast to the Branded Advertising sectors shown in Table 30 above, Arts & Entertainment was only the top-ranked sector for Major Brand advertising on apps in 2021 (37 %). In Q4 2023, this sector was fifth-ranked for apps (3 %) and in 2024 it was second-ranked with 17 %. The top-ranked Major Brand sector for websites in 2021 was also Arts & Entertainment (43 %), but the impact of the sector for websites fell in Q4 2023 (3 %), when it was fourth-ranked, and in 2024 (4 %), when it was fifth-ranked.

The Major Brand sector of Shopping was more dominant for websites than apps, but was significant for both. For apps, Shopping was the second-ranked Major Brand sector in 2021 (21 %) and Q3 2022 (27 %) but dropped to fifth rank in 2024 (6 %). By contrast, Shopping was third-ranked for websites in 2021 (13 %) but was the top-ranked sector in both Q3 2023 and 2024 (32 %). Including the related Retail sector, the percentage of 2024 estimated Ad Impressions for websites for this combined Major Brand sector would be 47 %.

Business was the third-ranked Major Brand sector for apps in 2021 (19 %) and Q4 2023 (20 %) and top ranked in 2024 with 24 % of estimated Ad Impressions. This Major Brand sector only appeared among the top-ranked sectors for websites in 2021, tied for fifth place with 1 % of estimated Ad Impressions.

Technology & Computing was ranked fourth for apps in both 2021 (14 %) and 2023/Q4 (5 %) but fell to seventh place in 2024 with 4 % of estimated Ad Impressions. For websites, the significance of Major Brand Technology & Computing advertising decreased over time. In 2021, this sector was second-ranked (18 %) but was third-ranked in Q4 2023 (6 %) and declined further to seventh place in 2024 (4 %).

Major Brand Personal Finance advertising in apps was fifth-ranked in 2021 (3 %) and top ranked in Q4 2023 (35 %). In 2024, Personal Finance sector advertising on apps was sixth-ranked, with 5 % of estimated Ad Impressions. This Major Brand sector only appeared among the top-ranked sectors for websites in 2021, in fourth place with 5 % of estimated Ad Impressions.

The Major Brand Gambling sector was more significant for websites than for apps. Gambling was sixth-ranked for apps in 2021 (2 %) and fourth-ranked in 2024 (10 %), but was not among the top-ranked Major Brand sectors in Q4 2023 for apps. For websites, the Major Brand Gambling sector was third-ranked in 2021 (13 %) and second-ranked in 2024 (13 %), but fifth-ranked in Q4 2023 (1 %).

The Travel sector percentages varied each period. For apps, Major Brand Travel ranked seventh in 2021 (1 %) and third in 2024 (15 %) but did not appear among the top-ranked sectors in Q4 2023. For websites, Major Brand Travel ranked fifth in 2021 (1 %), second in 2023/Q3 (26 %), and third in 2024 (11 %).

The Education sector appeared among the top-ranked Major Brand sectors for the first time in 2024 for both apps and websites. Education sector was ranked eighth for apps (1 %) in 2024 and fourth for websites (8 %).

6.5.4 Revenue trend analysis, websites versus apps, 2021-2024

This section focuses on two revenue analyses calculated from the data for apps and websites to better understand the impact of advertising on each ecosystem. The average global annual estimated ad revenue per publisher evaluates the average ad revenue that websites or apps included in the specific dataset may generate. The average eCPM identifies the average potential revenue for ads ([55]). Note that, for both factors, different datasets will result in different results.

Table 32 summarises the trends in average global annual estimated ad revenue per publisher and the average eCPM for websites and apps for the 2020, 2021, and 2024 monitoring periods. App monitoring began in H2 2021.

Monitoring Period	Monitored Websites	Average Global Annual Est. Ad Revenue per Website Publisher	Average ECPM	Monitored Apps	Average Global Annual Est. Ad Revenue per App Publisher	Average ECPM
2020	8 143	EUR 5 885	EUR 2.39	N/A		
2021*	5 758	EUR 158 517	EUR 1.39	538	EUR 106 146	EUR 6.65
2024	7 250	EUR 33 377	EUR 3.05	398	EUR 56 543	EUR 5.01

Table 32: Comparison of estimated ad revenue factors for Monitored Websites and apps
**2021 apps were monitored in H2 only*

The average eCPM was 79 % higher in 2021 on apps (EUR 6.65) than on websites (EUR 1.39). In 2024, the average eCPM was 39 % higher on apps (EUR 5.01) than on websites (EUR 3.05).

In 2021 the average global annual estimated ad revenue per app publisher was 49 % lower (EUR 106 146) than per website publisher (EUR 158 517). However, in 2024 the average global annual estimated ad revenue per app publisher was 41 % higher (EUR 56 543) than per website publisher (EUR 33 377). The average global annual estimated ad revenue per publisher decreased for both websites and apps between 2021 and 2024. For websites, this is likely to be related to the increased level of churn in Monitored Websites. For example, mirror websites spring up to replace those that have gone offline due to enforcement and do not have the same level of Ad Impressions as the original piracy websites. Newer websites may also take longer to attract users and advertising.

([55]) The eCPM for a publisher is calculated using the formula '(total ad revenue / total Ad Impressions) x 1,000'.

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Glossary

2024 Ad Monitoring Exercise: the programme commissioned by the European Union Intellectual Property Office and undertaken by White Bullet to track the ad profiles of IP-infringing websites and apps in the EU and assess the evolution of online advertising and revenues on IP-infringing websites during 2024, pursuant to paragraphs 15 and 18 of the MoU.

2024 Monitored Apps: the 398 apps selected for monitoring from 18 EU countries, and the UK and US as control countries, in the 2024 Ad Monitoring Exercise from 1 January 2024 to 30 November 2024.

2024 Monitored Websites: the 7 250 websites selected for monitoring from 18 EU countries, and the UK and US as control countries, in the 2024 Ad Monitoring Exercise from 1 January 2024 to 30 November 2024.

Ad Exchange: a platform that facilitates real-time bidding transactions between buyers and sellers in the digital advertising ecosystem.

Ad Impression: a metric of online advertising that quantifies when an ad is fetched from its source and can be counted; also known as an ad view, based on its being viewable by a visitor.

Ad Intermediaries: entities in the digital advertising ecosystem that are directly involved in buying, selling or brokering the sale or purchase of advertising space or that are engaged with facilitation of ad delivery or targeting advertising to such spaces. These are categorised into the following types included for analysis:

- **Ad Tech**: entities involved in buying and selling ads, including Ad Networks, Ad Exchanges, Demand-Side Platforms, Supply-Side Platforms, and Affiliate Programmes.
- **Ad Serving**: entities involved in serving and delivering ads, including Ad Servers and Content Delivery Networks (CDNs).
- **Anonymised Ad Tech**: Ad Tech that is obfuscated, undisclosed, covert or anonymised.

- **Adware**: unwanted software that delivers ads to a consumer's device, often through a web browser.

Ad Monitoring System: White Bullet's proprietary technology and system used to identify and classify advertising on websites.

Ad Network: a platform that facilitates advertising transactions between buyers and sellers in the digital advertising ecosystem without operating an Ad Exchange.

Ad Path Detections: identifying the signals of an Ad Intermediary found in the ad supply chain of a specific ad. Multiple Ad Path Detections may be identified per ad, including repeat signals for individual Ad Intermediaries.

Ad Type: categorisation of ads into different types:

- **Branded Advertising**: ads that can be attribute to a brand. For the purpose of this report, Branded Advertising is broken down into two sub-groups:
  - **Major Brands**: brands that are on selected top advertiser lists, are otherwise reputable established brands with a strong search engine presence in EU countries, or are major licensed gambling companies;
  - **Other Brands**: brands that are not major but are also not fraudulent, adult, or malicious;
- **Adult**: ads that display sexually explicit imagery or wording;
- **Fraud & Malware**: ads that engage in click generation, known fraudulent or identifiable malicious activity;
- **Sponsored Content**: native ads placed within content boxes and including multiple advertorials in a single inventory slot; and
- **Unidentifiable Ads**: ads that cannot be attributed to a specific brand or other Ad Type.

BitTorrent Portals: websites using Peer-to-Peer (P2P) file distribution technology to permit users to share content. These websites act as aggregators of P2P links, which users can search for and access via the website.

Blocklist Evasion Techniques: processes deployed by the operators of infringing websites to evade detection by law-enforcement authorities and other parties. Such techniques may include:

- **Auto-redirecting**: automatically redirecting visitors to a second website from the originating website, which may occur when websites change domain (domain hopping) or change TLD or ccTLD;
- **Domain hopping**: moving IP-infringing services to a new domain name, but not necessarily auto-redirecting users to it when they visit the originating domain;
- **Mirroring**: using multiple domains to distribute IP-infringing content, where domains appear identical in both aesthetics and content offered.

Branded Advertising: ads that can be attributed to a brand; includes both Major Brands and Other Brands (see definition of 'Ad Types' for more details).

Cookie: small pieces of web code placed by websites and stored on a user's web browser. These send information about a user's web habits on that website back to the website to remind the website of the user's previous activities, and they can be used to target advertising specifically to that user.

Counterfeit Websites: websites offering counterfeit goods as defined for the purposes of the MoU.

Demand-Side Platform (DSP): a technology platform that enables buyers of digital ad space to manage multiple ad exchange accounts through a single technology interface.

Desktop Web Advertising Ecosystem: advertising served to users accessing websites via desktop browser.

Digital Ad Pricing Models: pricing models for the payment of digital advertising to websites, which are incorporated into the ad revenue model used in this report. These include:

- **Cost Per Action (CPA)**: payment based on an action completed after clicking on an ad, such as signing up for a service or purchasing a product based on an ad;
- **Cost Per Click (CPC)**: payment based on clicking on the ad;
- **Cost Per Mille (CPM)**: payment based on an agreed value for every thousand views of an ad, regardless of interaction.

- **Effective Cost Per Mille (eCPM**): estimate of the advertising revenue received for every thousand Ad Impressions. It is used on many platforms that monetise through digital advertising, which can include desktop, mobile, in-app and video. eCPM is calculated as (Total Earnings / Impressions) x 1 000. It differs from CPM in that in takes into account other advertising monetisation models such as cost per click (CPC) and cost per action (CPA) and not only an impression based model (CPM), so creating an effective single metric.

EU Ad Intermediaries: Ad Intermediaries identified in the 2024 Ad Monitoring Exercise that are either headquartered in an EU country or have established business operations in at least one EU country.

EU Brands: brands identified in the 2024 Ad Monitoring Exercise that are either headquartered in an EU country or have established business operations in at least one EU country.

EU Major Brands: Major Brands identified in the 2024 Ad Monitoring Exercise that are either headquartered in an EU country or have established business operations in at least one EU country.

High-Risk Apps: apps in the 2024 Monitored Apps not included in Pirate Mobile App List (PMAL) distributed by the Trustworthy Accountability Group, but still verified as infringing, including by White Bullet's IPIP™ or by rights holders.

High-Risk Websites: websites in the 2024 Monitored Websites not found to be illegal by national judicial, administrative or other enforcement authorities in the EU, but still verified as infringing and popular among EU consumers, including by White Bullet's IPIP™ or by rights holders.

Identifiable Ad Intermediaries: Ad Intermediaries that could be attributed to an identifiable company, excluding unidentifiable ad servers.

Illegal Apps: apps in the 2024 Monitored Apps included in the Pirate Mobile Apps List (PMAL) distributed by the Trustworthy Accountability Group.

Illegal Websites: websites in the 2024 Monitored Websites that are included on IWLs, those identified through publicly available information as having court-ordered adjudications against them

within the EU, and those listed on the Counterfeit and Piracy Watch List published by the European Commission in December 2020 ([56]).

Infringing Website Lists (IWLs): lists of IP-infringing websites that aim to share intelligence on such websites with advertising industry stakeholders, among others, and compiled by administrative authorities or law-enforcement authorities: for example, those used in the UK compiled by the City of London Police's Intellectual Property Crime Unit (PIPCU) and in Spain compiled by the Ministry of Culture and Sport; by agencies such as the World Intellectual Property Organization (WIPO); or by interest organisations such as Rettighedsalliancen in Denmark.

IPIP™: White Bullet's proprietary Intellectual Property Infringement Platform of dynamic IP-risk scores for websites and apps, developed through a unique standard for online IP risk assessment. It is a standardised means of rating websites and apps by reference to IP infringement, based on a broad range of over 400 data points and consistent core criteria.

Major Brands: brands that are on selected top advertiser lists, are otherwise reputable established brands with a strong search engine presence in EU countries, or are major licensed gambling companies.

Mobile Web Advertising Ecosystem: advertising served to users accessing websites via mobile browsers.

Non-EU Ad Intermediaries: Ad Intermediaries identified in the 2024 Ad Monitoring Exercise that are neither headquartered in an EU country nor have established business operations in at least one EU country.

Non-EU Brands: brands identified in the 2024 Ad Monitoring Exercise that are neither headquartered in an EU country nor have established business operations in at least one EU country.

Other Brands: brands that are not major but are also not fraudulent, adult, or malicious.

([56]) See footnote 23.

Pageview(s): total number of pages on a website that were loaded or reloaded in a given period by a unique user; used to measure visits and traffic to websites.

Sub-sector: a specific part of the wider industry in which the relevant brand operates.

Supply-Side Platform (SSP): a technology platform that enables websites to manage ad space on multiple ad exchange accounts.

Top-level Sector: the wider industry grouping in which the related brand operates.

Web Proxy Websites: websites that allow users to access websites that have site-blocking restrictions.