

Glossary

Ad blocking	Ad blockers can remove or alter advertising content from a web browser, website, or mobile app. This can be achieved by individuals installing specific ad blocking software or adopting ad blocking features provided by some browsers.
Ad exchange	See supply side platform.
Ad fraud	Fraudulently creating clicks, impressions and/or conversions in order to generate digital advertising revenue.
Ad Identifier (also referred to as mobile advertising identifier or MAID)	A unique identifier used to track activity for advertising purposes, created by mobile OSs and used by mobile apps. (In contrast with cookies, which are used in browsers.) On iOS this is called the IDFA and on Android the AAID. Other devices may have MAIDs, such as smart TVs and Windows 10.
Ad network	Services which provide end to end intermediation for the sale of digital advertising between advertisers and publishers.
Ad server	<ul style="list-style-type: none">- Advertiser ad servers store ads, deliver them to publishers, and keep track of this activity.- Publisher ad servers manage the publisher's inventory and are responsible for the decision logic underlying the final choice of which ad to serve.
Adtech	Advertising technology – refers to intermediary services reliant on programmatic technology involved in the automatic buying, selling and serving of display advertisements.
Adtech stack	The supply chain of intermediary services involved in the automatic buying, selling and serving of display advertisements, operating between advertisers and publishers.
Ad verification	The process of independently checking whether the digital ads purchased have actually been served in accordance with the contractually stipulated conditions, eg in terms of position on screen, how long it is viewable for, etc.

Algorithm	A set of rules established for making a calculation, decision, or some other output. Online, algorithms are commonly used to determine the listings shown via search engines and for automated methods of ad trading and delivery.
Application programming interface (API)	A technical description of how to use or interact with an application or tool, which enables other applications and tools to be built that interact with it.
Arbitrage	The simultaneous purchase and sale of an asset to profit from an imbalance in the price. In the context of advertising intermediation, the action of an intermediary buying impressions at one price and selling them at a higher one, without its customers being informed of the level of margin earned.
Attribution	Estimating the extent to which exposure to an ad or a series of different ads is associated with a conversion of some sort, eg a sale.
Bid	The response that is sent to address a bid request – including the amount bid to display an advertisement in the space available.
Bid request	A request generated when a consumer visits a webpage/app with advertising space available.
Bot	Short for robot – an automated program often used to perform repetitive tasks.
Brand safety	Ensuring that advertising does not appear on or alongside inappropriate/illegal websites or content.
Browser	An application that enables users to visit web pages on the Internet, such as Google Chrome, Firefox, Safari, and Microsoft Edge.
Campaign data	Information on an advertising campaign, eg statistics on the number of users who have seen an impression.
Choice architecture	The process and outcome of design decisions about how choices are presented to people (including for user interfaces in an online environment), and the impact of that presentation on people's decisions.

Classified advertising	The listing of specific products or services on a specialised website serving a particular vertical market.
Click-and-query data	Data collected by search engines about the search queries entered by consumers and how consumers interacted with the results that they were served. Search engines use click-and-query datasets to improve their algorithms and return more relevant results to queries.
Clickwrap agreement	A clickwrap is a form of agreement where the consumer must agree to terms and conditions before they are able to use the service.
Consent management platform	A consent management platform (CMP) is a tool that enables a website or app to be GDPR-compliant. It does this by prompting users for consent, collecting and managing that information, and passing the data to downstream ad partners.
Contextual advertising	Form of advertising where ads are selected on the basis of the content of the webpage or app, often by examining specific keywords or topics.
Contextual data	Data on the context in which an impression is served, eg the content of the webpage or the search term.
Conversion	A subsequent action associated with a consumer's interaction with an ad that is defined as valuable, such as signing up to an email list, downloading an app, a call to a business, or a sale (either online or in physical store).
Cookie	<p>Small file generated by a website and stored in user's browser. The file typically consists of a short string of characters. Cookies are used by websites to recognise users and remember information about them over time, and sometimes across websites.</p> <p>First-party cookies are those which are created by the website that the user is visiting. Third-party cookies are those created by a website other than the website that the user is visiting and are mainly used for tracking and digital advertising, although first-party cookies may be used for this too (eg Facebook Pixel).</p>

Cookie matching	<p>Cookies can only be accessed by the entity that created them. Cookie matching is a process by which different ad tech entities share and map each other's cookie IDs for a given user, so that the user can be commonly identified, and the ad tech entities can share information about that user.</p> <p>Also known as cookie syncing or ID syncing.</p>
Cost per click (CPC)	The amount an advertiser pays every time an internet user clicks their online ad.
Cost per thousand/Cost per mille (CPM)	The amount an advertiser pays each time their online ad is displayed, with the amount measured per one thousand impressions.
Crawling	The process by which search engines identify new or updated webpages and bring data about those pages back to the search engine's servers. Search engines use this data to form a web index, from which search results are drawn.
Cross-side network effects	Network effects where, as the size of one user group increases, the value of the platform to another user group increases. For example, as more consumers use a platform, the platform becomes more valuable to advertisers wishing to reach those consumers.
Data management platforms (DMP)	Businesses that allow other participants along the value chain (advertisers, DSPs, SSPs and publishers) to manage and analyse their data, integrate it with third-party data, and use it to create audiences that can be used for targeting purposes.
Data processing	Any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use disclosure by transmission, dissemination or otherwise making available, alignment of combination, restriction, erasure or destruction.
Data Protection Commission (DPC) Ireland	Data Protection Commission in the Republic of Ireland.

Default search engine	The search engine that is set as the initial default on a browser or device, when a consumer first uses that browser or device.
Demand side platform (DSP)	<p>Demand side 'platforms' are intermediaries which provide the technology to automatize the purchase of digital inventory on behalf of advertisers. They allow advertisers, typically through their media agencies, to buy advertising inventory from many sources. A DSP bids on impressions based on the buyer's objectives and on data about the consumers.</p> <p>DSPs can also facilitate 'direct deals' between advertisers and publishers where advertisers and publishers have already agreed the terms of trade between themselves.</p>
Deprecation	The degrading or removal of some feature, practice, or service. For example, the removal or discontinuation of an API that has been available to other developers, or the removal of support for third-party cookies on some browsers.
Display advertising	The display of static or video ads alongside the content a user is interested in.
Earnings before interest and taxation (EBIT)	The amount of accounting profit earned net of interest and taxation.
European Publishers Council (EPC)	European representative body for media organisations.
First-party data	Information that is collected through a direct relationship with a consumer.
Frequency cap	Restricting the number of times a specific user is shown a particular advertisement.
The General Data Protection Regulation (GDPR)	The General Data Protection Regulation 2016/679 provides the general framework for the protection of personal data that applies in the UK.
Google Ad Manager	The Google service offered to publishers incorporating a number of products used for the selling of advertising

	inventory via the ad tech supply chain, including its publisher ad server and its SSP (AdX).
Google AdMob	Google's service offered to mobile app developers, through which Google sells advertising inventory on those applications on their behalf and shares the revenue generated with the developer.
Google Ads	Google's service offered to advertisers which allows them to create and purchase both search and display advertising.
Google AdSense	Google's service offered to website publishers, through which Google sells advertising inventory on those websites on their behalf and shares the revenue generated with the publisher.
Header bidding	Programmatic advertising technique that allows multiple SSPs to bid on the same inventory at the same time. In client-side header bidding, the auction is run by the user's browser using code included in the publisher's webpage; in server-side header bidding, the auction takes place in a third-party server.
Identifier	A piece of data which helps identify an individual, or their device (or another object of interest, such as a transaction). Identifiers are usually a string of alphanumeric characters and may not look like personal data, but in combination with other data/identifiers will often be. Identifiers are stronger when unique, persistent and available.
Inferred data	Information about a person, not directly provided by or observed from the person, but which is derived or deduced.
Information Commissioner's Office (ICO)	The independent UK authority established to uphold information rights.
Internet Advertising Bureau UK (IAB UK)	An industry body for digital advertising – the UK organisation is part of an international network that includes a European-level and a HQ, the Interactive Advertising Bureau, in the US.
Interoperability	The ability of systems to work together – in online social media this would enable users to connect with each other

	and use the functions of social media platforms irrespective of their provider.
Inventory	Space available for advertisers to purchase. For example, in newspapers, on TV/Radio, on display boards and hoardings or on a website or app.
Multi-homing	The condition of users using more than one competing platform.
Multi-sided platform	A platform which is characterised by the following pair of properties: - two or more distinct types of users or parties ('economic agents') interact on the platform, and - an increase in usage by one type of user or party increases the value of the platform to users or parties of another type.
Network effects	Network effects occur when, as more users join a platform, the platform becomes more valuable for users. We have provided separate definitions for two types of network effects that are of concern for this report: cross-side network effects and same-side network effects.
Observed data	Information which is recorded about a person and what they do.
Open display	In the open display market, a wide range of publishers sell advertising space to advertisers through a complex chain of third-party intermediaries that run auctions on behalf of the publishers (ie SSPs and publisher ad server) and advertisers (DSPs).
Permissions models (on smartphones)	Permissions models are defined by major mobile operating systems (iOS and Android) to specify how an app should request permission to access certain resources (device and user-generated data), such as location or photos. Depending on the resource being requested, the OS may grant permission automatically or prompt the user for approval.
Personal data	Defined within the GDPR as any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an

	online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.
Personal data mobility	Personal data mobility is the ability for individuals to move, copy or transfer personal data easily from one IT environment to another in a safe and secure way, without affecting its usability.
Personal data stores (PDS)	Systems which allow individuals to control their personal data by allowing them to store their personal data on a device or in the cloud and authorize trusted third parties access to it.
Personal information management services (PIMS)	Systems that allow individuals to manage their personal data in secure, local or online storage system and to share them when and with whom they choose.
Personalised advertising	The practice of targeting advertising to a consumer, using personal data such as the consumers' characteristics and browsing history.
Pixel	<p>In digital advertising, pixel usually refers to a Tracking Pixel, which is a single pixel-sized transparent image which collects information about an ad's placement and the user (such as device, browser, IP address, etc.).</p> <p>Pixels load code that allow the website (or third-parties) to check whether a user has accessed some content (eg by placing a Cookie on users' Browsers). Pixels are used to track users across different sessions and different websites. See also Tag.</p>
Platform	Online advertising-funded platforms seek to attract consumers by offering their core services for free and combine the attention of their consumers with contextual or personal information they have about them to serve advertising. Unlike 'publishers', these platforms interact with advertisers through an integrated sales function rather than through intermediaries.
Pre-installed apps	Pre-installed apps are apps that are installed by the OEM (original equipment manufacturer) on a device prior to its

	<p>use, rather than being installed by the user. They are sometimes called 'bloatware', because they are often unwanted by the user and take up device memory.</p>
Price discrimination	<p>Identical or very similar products are priced differently based on the supplier's belief regarding a consumer's willingness to pay for the products.</p>
Privacy-enhancing technologies	<p>Privacy-enhancing technologies (PETs) are a class of technologies that seek to mitigate privacy risks associated with the collection, transfer, and analysis of data, while still allowing for useful results to be obtained from the data.</p> <p>One class of PETs is client-side PETs, which shift a significant amount of data processing to the user's device itself, minimising the need for data to leave the user's device.</p>
Programmatic advertising	<p>Ad selection, pricing and delivery is automated by computers using algorithms. Decisions whether to submit a bid or not are made in real time on an impression-by- impression basis.</p>
Pseudonymised data	<p>The GDPR defines pseudonymisation as the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person.</p>
Publisher	<p>Online publishers operate websites or apps and monetise their services by selling space for digital advertising through intermediaries. These include online newspapers and other content providers. In the context of our report, publishers and platforms are distinct groups.</p>
Publisher ad server	<p>See Ad server.</p>
Real time bidding (RTB)	<p>Real Time Bidding uses ad tech to enable the buying and selling of advertising inventory in real time – ie in the time it takes a webpage to load in a user's browser – on an</p>

	impression by impression basis, typically involving an auction pricing mechanism.
Retargeting	A form of personalised advertising aimed at identifying and serving ads to consumers based on their previous actions, eg those consumers who have previously visited an advertiser's website or made a purchase from the advertiser.
Return on capital employed (ROCE)	Profitability analysis that compares accounting profit with the size of investment made by firms to achieve those profits.
Same-side network effects	Network effects where, as the size of one user group increases, the value of the platform to members of that same user group increases. For example, as more consumers engage in social networking on a platform, the platform becomes more valuable to other consumers that use the platform for social networking.
Search advertising	Ads provided in response to individuals' search queries.
Search data	Data to deliver search results that are relevant to users' search queries, eg metadata about websites and webpages, as well as what users have searched for.
Search engine or general search engine	Online platforms that help consumers to navigate the Internet and find useful information in response to a broad range of search queries.
Single-homing	The condition of users using only one among competing platforms.
Social graph	Social graphs describe networks of connected users, for example, on a social media platform. They capture which users are in the network, and how these users are connected to each other by relevant relationships, such as 'friendships' or 'follows'.
Social media	Online platforms that facilitate interaction between their users, allowing them to communicate with each other, and share and discover engaging user-generated content.
Software Development Kit (SDK)	An SDK, also known as a third-party library (TPL), is a collection of code that provides extra functionality that software developers may integrate into their app. The SDK code is written by developers who are third-party to the app

	<p>that incorporates it. SDKs offer extra functionality that the app can make use of, such as monetisation from ads, analytics, or embedded maps or social media sharing buttons. Their implementation is specific to the software language the device implements (differs for iOS and Android). Adtech companies track users using app SDKs.</p>
Specialised search	<p>Search engines that specialise in different types of search query. For example, Expedia provides specialised search services for travel.</p>
Supply side platform (SSP)	<p>Supply side 'platforms' are intermediaries which provide the technology to automatize the sale of digital inventory on behalf of publishers. They allow real-time auctions by connecting to multiple DSPs, collecting bids from them and deciding which bid to submit to the publisher ad server for its final consideration. They can also facilitate 'direct deals' between publishers and advertisers where publishers and advertisers have already agreed the terms of trade between themselves.</p> <p>Ad exchanges, which conduct the real-time auctions, used to be separate from SSPs, but have been integrated with SSPs. The terms 'ad exchange' and 'SSP' are now used interchangeably.</p>
Syndication	<p>Under search syndication agreements, upstream providers agree to provide search results and adverts, and downstream providers incorporate these into their own search engine product.</p>
Tag	<p>Tags are small pieces of code added to a website that allow the website (or third-parties) to check whether a user has accessed some content (eg by placing a Cookie on the user's Browser). Tags are used to track users across different sessions and different websites. See also Pixel.</p> <p>In serving digital advertising, tags are code that an advertiser provides to a publisher or network that calls the advertisers' ad server and is used for displaying an ad.</p> <p>In digital analytics, a tag is some code on webpages that allows measurement and categorisation of page visits and page visitors included on each webpage to be measured.</p>

	The tag is a small piece of code that is inserted into the page's source code.
Tail queries	Search queries that are seen relatively infrequently by search engines.
Tracking	The collection and linking of data on a user or device across multiple websites or applications, and the retention, use or sharing of that data. Tracking can also occur cross-device, or across time, and dimensions other than across application/website, but we focus mostly on the latter.
Third-party data	Information from an entity that does not have a direct relationship with the person the data has been collected about. Common types of third-party data that may be collected or purchased by websites or advertisers include purchasing history, geographic data and sociodemographic data.
Trading desk	An entity that specialises in the purchasing of digital advertising. Trading desks are often in-house departments found in the major advertising agencies.
User data	Data that conveys information about consumers' behaviours and their attributes - can be volunteered, observed or inferred. See also Personal data.
Viewability	Online advertising metric that aims to track only impressions that can actually be seen by consumers. For example, if an individual doesn't scroll far enough down a page to see an ad or an ad is only in view for less than one second that impression would not be deemed viewable.
Volunteered data	Information which is intentionally provided by users.
Walled garden	A closed ecosystem in which a platform provides a complete end-to-end technical solution for advertisers and publishers, and advertisers and publishers are restricted in their ability to choose other technical solutions.
Web crawler	See Crawling.
Web index	Repositories of data about a very large number of websites and webpages and the information that they contain. When

	consumers enter search queries, search engines select and return relevant search results from their web index.
Weighted average cost of capital (WACC)	A widely used benchmark for returns on an investment; essentially the minimum return required on an investment or asset to satisfy the owners and creditors.