Online Advertising

Online advertising, also called **Internet advertising**, uses the Internet to deliver promotional marketing messages to consumers. It includes email marketing, search engine marketing, social media marketing, many types of display advertising (including web banner advertising), and mobile advertising. Like other advertising media, online advertising frequently involves both a publisher, who integrates advertisements into its online content, and an advertiser, who provides the advertisements to be displayed on the publisher's content. Other potential participants include advertising agencies who help generate and place the ad copy, an ad server who technologically delivers the ad and tracks statistics, and advertising affiliates who do independent promotional work for the advertiser.

Online advertising is a large business and is growing rapidly. In 2011, Internet advertising revenues in the United States surpassed those of cable television and nearly exceeded those of broadcast television.[1]:19 In 2012, Internet advertising revenues in the United States totaled $36.57 billion, a 15.2% increase over the $31.74 billion in revenues in 2011.[1]:4–5 U.S. internet ad revenue hit a historic high of $20.1 billion for the first half of 2013, up 18% over the same period in 2012. [2] Online advertising is widely used across virtually all industry sectors.[1]:16

Despite its popularity, many common online advertising practices are controversial and increasingly subject to regulation. Furthermore, online ad revenues may not adequately replace other publishers' revenue streams. Declining ad revenue has led some publishers to hide their content behind paywalls.[3]

History

In early days of the Internet, online advertising wasn't allowed. For example, two of the predecessor networks to the Internet, ARPANET and NSFNet, had "acceptable use policies" that banned network "use for commercial activities by for-profit institutions".[4][5] The NSFNet began phasing out its commercial use ban in 1991.[6][7][8][9][10]

Email. The first widely publicized example of online advertising was conducted via electronic mail. On 3 May 1978, a marketer from DEC (Digital Equipment Corporation), Gary Thuerk, sent an email to most of the ARPANET's American west coast users, advertising an open house for a new model of a DEC computer.[5][11] Despite the prevailing acceptable use policies, electronic mail marketing rapidly expanded[12] and eventually became known as "spam."

The first known large-scale non-commercial spam message was sent on 18 January 1994 by an Andrews University system administrator, by cross-posting a religious message to all USENET newsgroups.[13] Four months later, Laurence Canter and Martha Siegel, partners in a law firm, broadly promoted their legal services in a USENET posting titled "Green Card Lottery – Final One?"[14] Canter and Siegel's Green Card USENET spam raised the profile of online advertising, stimulating widespread interest in advertising via both Usenet and traditional email. [13] More recently, spam has evolved into a more industrial operation, where spammers use armies of virus-infected computers (botnets) to send spam remotely.[11]

Display Ads. Online banner advertising began in the early 1990s as page owners sought additional revenue streams to support their content. Commercial online service Prodigy displayed banners at the bottom of the screen to promote Sears products.[15] The first clickable web ad was sold by Global Network Navigator in 1993 to a Silicon Valley law firm.[16] In 1994, web banner advertising became mainstream when HotWired, the online component of Wired Magazine, sold banner ads to AT&T and other companies. The first AT&T ad on HotWired had a

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44% click-through rate, and instead of directing clickers to AT&T's website, the ad linked to an online tour of seven of the world's most acclaimed art museums.[17][18]

Search Ads. GoTo.com (renamed Overture in 2001, and acquired by Yahoo! in 2003) created the first search advertising keyword auction in 1998.[19]:119 Google launched its "AdWords" search advertising program in 2000[20] and introduced quality-based ranking allocation in 2002, [21] which sorts search advertisements by a combination of bid price and searchers' likeliness to click on the ads.[19]:123

Recent Trends. More recently, companies have sought to merge their advertising messages into editorial content or valuable services. Examples include Red Bull's Red Bull Media House streaming Felix Baumgartner's jump from space online, Coca-Cola's online magazines, and Nike's free applications for performance tracking.[18] Advertisers are also embracing social media[22][23] and mobile advertising; mobile ad spending has grown 90% each year from 2010 to 2013.[1]:13

Delivery Methods

Display advertising

Display advertising conveys its advertising message visually using text, logos, animations, videos, photographs, or other graphics. Display advertisers frequently target users with particular traits to increase the ads' effect. Online advertisers (typically through their ad servers) often use cookies, which are unique identifiers of specific computers, to decide which ads to serve to a particular consumer. Cookies can track whether a user left a page without buying anything, so the advertiser can later retarget the user with ads from the site the user visited.[24]

As advertisers collect data across multiple external websites about a user's online activity, they can create a detailed picture of the user's interests to deliver even more targeted advertising. This aggregation of data is called behavioral targeting.[25] Advertisers can also target their audience by using contextual and semantic advertising to deliver display ads related to the content of the web page where the ads appear.[19]:118 Retargeting, behavioral targeting, and contextual advertising all are designed to increase an advertiser's return on investment, or ROI, over untargeted ads.[26]

Advertisers may also deliver ads based on a user's suspected geography through geotargeting. A user's IP address communicates some geographic information (at minimum, the user's country or general region). The geographic information from an IP can be supplemented and refined with other proxies or information to narrow the range of possible locations.[27] For example, with mobile devices, advertisers can sometimes use a phone's GPS receiver or the location of nearby mobile towers.[28] Cookies and other persistent data on a user's machine may provide help narrowing a user's location further.[27]

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Web banner advertising

Web banners or banner ads typically are graphical ads displayed within a web page. Many banner ads are delivered by a central ad server.

Banner ads can use rich media to incorporate video, audio, animations, buttons, forms, or other interactive elements using Java applets, HTML5, Adobe Flash, and other programs.

Frame ad (traditional banner)

Frame ads were the first form of web banners.[17] The colloquial usage of "banner ads" often refers to traditional frame ads. Website publishers incorporate frame ads by setting aside a particular space on the web page. The Interactive Advertising Bureau's Ad Unit Guidelines proposes standardized pixel dimensions for ad units.

Pop-ups/pop-unders

A pop-up ad is displayed in a new web browser window that opens above a website visitor's initial browser window.[29] A pop-under ad opens a new browser window under a website visitor's initial browser window.[1]:22

Floating ad

A floating ad, or overlay ad, is a type of rich media advertisement that appears superimposed over the requested website's content. Floating ads may disappear or become less obtrusive after a preset time period.

Expanding ad

An expanding ad is a rich media frame ad that changes dimensions upon a predefined condition, such as a preset amount of time a visitor spends on a webpage, the user's click on the ad, or the user's mouse movement over the ad.[30] Expanding ads allow advertisers to fit more information into a restricted ad space.

Trick banners

A trick banner is a banner ad where the ad copy imitates some screen element users commonly encounter, such as an operating system message or popular application message, to induce ad clicks.[31] Trick banners typically do not mention the advertiser in the initial ad, and thus they are a form of bait-and-switch.[32][33] Trick banners commonly attract a higher-than-average click-through rate, but tricked users may resent the advertiser for deceiving them.[34]

Interstitial ads

An interstitial ad displays before a user can access requested content, sometimes while the user is waiting for the content to load.[35] Interstitial ads are a form of interruption marketing.[36][37]

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Text ads

A text ad displays text-based hyperlinks. Text-based ads may display separately from a web page's primary content, or they can be embedded by hyperlinking individual words or phrases to advertiser's websites. Text ads may also be delivered through email marketing or text message marketing. Text-based ads often render faster than graphical ads and can be harder for ad-blocking software to block.[38]

Search Engine Marketing (SEM)

Search Engine Marketing, or SEM, is designed to increase a website's visibility in search engine results pages (SERPs). Search engines provide sponsored results and organic (non-sponsored) results based on a web searcher's query.[19]:117 Search engines often employ visual cues to differentiate sponsored results from organic results. Search engine marketing includes all of an advertiser's actions to make a website's listing more prominent for topical keywords.

Search Engine Optimization (SEO)

Search Engine Optimization, or SEO, attempts to improve a website's organic search rankings in SERPs by increasing the website content's relevance to search terms. Search engines regularly update their algorithms to penalize poor quality sites that try to game their rankings, making optimization a moving target for advertisers.[39][40][41] Many vendors offer SEO services.[1]:22

Sponsored search

Sponsored search (also called sponsored links or search ads) allows advertisers to be included in the sponsored results of a search for selected keywords. Search ads are often sold via real-time auctions, where advertisers bid on keywords.[19]:118[42] In addition to setting a maximum price per keyword, bids may include time, language, geographical, and other constraints. [19]:118 Search engines originally sold listings in order of highest bids.[19]:119 Modern search engines rank sponsored listings based on a combination of bid price, expected click-through rate, keyword relevancy, and site quality.[21]

Social media marketing

Social media marketing is commercial promotion conducted through social media websites. Many companies promote their products by posting frequent updates and providing special offers through their social media profiles.[43]

Mobile Advertising

Mobile advertising is ad copy delivered through wireless mobile devices such as smartphones, feature phones, or tablet computers. Mobile advertising may take the form of static or rich media display ads, SMS (Short Message Service) or MMS (Multimedia Messaging Service) ads, mobile search ads, advertising within mobile websites, or ads within mobile applications or games (such as interstitial ads, "advergaming," or application sponsorship).[1]:23 Industry groups such as the Mobile Marketing Association have attempted to standardize mobile ad unit

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specifications, similar to the IAB's efforts for general online advertising.[37]

Mobile advertising is growing rapidly for several reasons. There are more mobile devices in the field, connectivity speeds have improved (which, among other things, allows for richer media ads to be served quickly), screen resolutions have advanced, mobile publishers are becoming more sophisticated about incorporating ads, and consumers are using mobile devices more extensively.[1]:14 The Interactive Advertising Bureau predicts continued growth in mobile advertising with the adoption of location-based targeting and other technological features not available or relevant on personal computers.[1]:14

Email Advertising

Email advertising is ad copy comprising an entire email or a portion of an email message.[1]:22 Email marketing may be unsolicited, in which case the sender may give the recipient an option to opt-out of future emails, or it may be sent with the recipient's prior consent (opt-in).

Chat advertising

As opposed to static messaging, chat advertising refers to real time messages dropped to users on certain sites. This is done by the usage of live chat software or tracking applications installed within certain websites with the operating personnel behind the site often dropping adverts on the traffic surfing around the sites. In reality this is a subset of the email advertising but different because of its time window.

Online classified advertising

Online classified advertising is advertising posted online in a categorical listing of specific products or services. Examples include online job boards, online real estate listings, automotive listings, online yellow pages, and online auction-based listings.[1]:22 Craigslist and eBay are two prominent providers of online classified listings.

Adware

Adware is software that, once installed, automatically displays advertisements on a user's computer. The ads may appear in the software itself, integrated into web pages visited by the user, or in pop-ups/pop-unders.[44] Adware installed without the user's permission is a type of malware.[45]

Affiliate Marketing

Affiliate marketing (sometimes called lead generation) occurs when advertisers organize third parties to generate potential customers for them. Third-party affiliates receive payment based on sales generated through their promotion.[1]:22

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Compensation Methods

Advertisers and publishers use a wide range of payment calculation methods. In 2012, advertisers calculated 32% of online advertising transactions on a cost-per-impression basis, 66% on customer performance (e.g. cost per click or cost per acquisition), and 2% on hybrids of impression and performance methods.[1]:17

CPM (Cost Per Mille)

Cost per mille, often abbreviated to CPM, means that advertisers pay for every thousand displays of their message to potential customers (mille is the Latin word for thousand). In the online context, ad displays are usually called "impressions." Definitions of an "impression" vary among publishers,[46] and some impressions may not be charged because they don't represent a new exposure to an actual customer.[47] Advertisers can use technologies such as web bugs to verify if an impression is actually delivered.[48][49]:59

Publishers use a variety of techniques to increase page views, such as dividing content across multiple pages, repurposing someone else's content, using sensational titles, or publishing tabloid or sexual content.[50]

CPM advertising is susceptible to "impression fraud," and advertisers who want visitors to their sites may not find per-impression payments a good proxy for the results they desire.[51]:1–4

CPC (cost per click)

CPC (Cost Per Click) or PPC (Pay per click) means advertisers pay each time a user clicks on the ad. CPC advertising works well when advertisers want visitors to their sites, but it's a less accurate measurement for advertisers looking to build brand awareness.[52] CPC's market share has grown each year since its introduction, eclipsing CPM to dominate two-thirds of all online advertising compensation methods.[1]:18[51]:1

Like impressions, not all recorded clicks are valuable to advertisers. GoldSpot Media reported that up to 50% of clicks on static mobile banner ads are accidental and resulted in redirected visitors leaving the new site immediately.[53]

CPV (cost per view)

Cost per view video advertising. Both Google and TubeMogul endorsed this standardized CPV metric to the IAB's (Interactive Advertising Bureau) Digital Video Committee, and it's garnering a notable amount of industry support.[54]

Other performance-based compensation

CPA (Cost Per Action or Cost Per Acquisition) or PPP (Pay Per Performance) advertising means the advertiser pays for the number of users who perform a desired activity, such as completing a purchase or filling out a registration form. Performance-based compensation can also incorporate revenue sharing, where publishers earn a percentage of the advertiser's profits made as a result of the ad. Performance-based compensation shifts the risk of failed advertising onto publishers.[51]:4, 16

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Fixed cost

Fixed cost compensation means advertisers pay a fixed cost for delivery of ads online, usually over a specified time period, irrespective of the ad's visibility or users' response to it.

Benefits of Online Advertising

Cost

The low costs of electronic communication reduce the cost of displaying online advertisements compared to offline ads. Online advertising, and in particular social media, provides a low-cost means for advertisers to engage with large established communities.[43] Advertising online offers better returns than in other media.[51]:1

Measurability

Online advertisers can collect data on their ads' effectiveness, such as the size of the potential audience or actual audience response,[19]:119 how a visitor reached their advertisement, whether the advertisement resulted in a sale, and whether an ad actually loaded within a visitor's view.[48][49]:59 This helps online advertisers improve their ad campaigns over time.

Formatting

Advertisers have a wide variety of ways of presenting their promotional messages, including the ability to convey images, video, audio, and links. Unlike many offline ads, online ads also can be interactive.[18] For example, some ads let users input queries[55] or let users follow the advertiser on social media.[56] Online ads can even incorporate games.[57]

Targeting

Publishers can offer advertisers the ability to reach customizable and narrow market segments for targeted advertising. Online advertising may use geo-targeting to display relevant advertisements to the user's geography. Advertisers can customize each individual ad to a particular user based on the user's previous preferences.[26] Advertisers can also track whether a visitor has already seen a particular ad in order to reduce unwanted repetitious exposures and provide adequate time gaps between exposures.[58]

Coverage

Online advertising can reach nearly every global market, and online advertising influences offline sales.[59][60][61]

Speed

Once ad design is complete, online ads can be deployed immediately. The delivery of online ads does not need to be linked to the publisher's publication schedule. Furthermore, online advertisers can modify or replace ad copy more rapidly than their offline counterparts.[62]

Concerns

Banner blindness

Eye-tracking studies have shown that Internet users often ignore web page zones likely to contain display ads (sometimes called "banner blindness"), and this problem is worse online than in offline media.[63] On the other hand, studies suggest that even those ads "ignored" by the users may influence the user subconsciously.[64]

Fraud on the Advertiser

There are numerous ways that advertisers can be overcharged for their advertising. For example, click fraud occurs when a publisher or third parties click (manually or through automated means) on a CPC ad with no legitimate buying intent.[65] For example, click fraud can occur when a competitor clicks on ads to deplete its rival's advertising budget, or when publishers attempt to manufacture revenue.[65]

Click fraud is especially associated with pornography sites. In 2011, certain scamming porn websites launched dozens of hidden pages on each visitor's computer, forcing the visitor's computer to click on hundreds of paid links without the visitor's knowledge.[66]

As with offline publications, online impression fraud can occur when publishers overstate the number of ad impressions they have delivered to their advertisers. To combat impression fraud, several publishing and advertising industry associations are developing ways to count online impressions credibly.[67][68]

Technological variations

Heterogeneous clients

Because users have different operating systems, web browsers[69] and computer hardware (including mobile devices and different screen sizes), online ads may appear differently to users than the advertiser intended, or the ads may not display properly at all. A 2012 comScore study revealed that, on average, 31% of ads were not "in-view" when rendered, meaning they never had an opportunity to be seen.[70] Rich media ads create even greater compatibility problems, as some developers may use competing (and exclusive) software to render the ads (see e.g. Comparison of HTML 5 and Flash).[71]

Furthermore, advertisers may encounter legal problems if legally required information doesn't actually display to users, even if that failure is due to technological heterogeneity.[72]:i In the United States, the FTC has released a set of guidelines indicating that it's the advertisers' responsibility to ensure the ads display any required disclosures or disclaimers, irrespective of the users' technology.[72]:4–8

Ad-blocking

Ad-blocking, or ad filtering, means the ads do not appear to the user because the user uses technology to screen out ads. Many browsers block unsolicited pop-up ads by default.[73] Other software programs or browser add-ons may also block the loading of ads, or block elements on

a page with behaviors characteristic of ads (e.g. HTML autoplay of both audio and video). Approximately 9% of all online page views come from browsers with ad-blocking software installed,[74] and some publishers have 40%+ of their visitors using ad-blockers.[3]

Anti-targeting technologies

Some web browsers offer privacy modes where users can hide information about themselves from publishers and advertisers. Among other consequences, advertisers can't use cookies to serve targeted ads to private browsers. Most major browsers have incorporated Do Not Track options into their browser headers, but the regulations currently are only enforced by the honor system.[75][76][77]

Privacy Concerns

The collection of user information by publishers and advertisers has raised consumer concerns about their privacy.[27][49] Sixty percent of Internet users would use Do Not Track technology to block all collection of information if given the opportunity.[78][79] Over half of all Google and Facebook users are concerned about their privacy when using Google and Facebook, according to *Gallup*.[80]

Many consumers have reservations about by online behavioral targeting. By tracking users' online activities, advertisers are able to understand consumers quite well. Advertisers often use technology, such as web bugs and respawning cookies, to maximizing their abilities to track consumers.[49]:60[81][82] According to a 2011 survey conducted by Harris Interactive, over half of Internet users had a negative impression of online behavioral advertising, and forty percent feared that their personally-identifiable information had been shared with advertisers without their consent.[83][84] Consumers can be especially troubled by advertisers targeting them based on sensitive information, such as financial or health status.[81]

Trustworthiness of advertisers

Scammers can take advantage of consumers' difficulties verifying an online persona's identity, [85]:1 leading to artifices like phishing (where scam emails look identical to those from a well-known brand owner)[86] and confidence schemes like the Nigerian "419" scam.[87][88][89] The Internet Crime Complaint Center received 289,874 complaints in 2012, totaling over half a billion dollars in losses, most of which originated with scam ads.[90][91]

Consumers also face malware risks when interacting with online advertising. Cisco's 2013 Annual Security Report revealed that clicking on ads was 182 times more likely to install a virus on a user's computer than surfing the Internet for porn.[92][93]

Spam

The Internet's low cost of disseminating advertising contributes to spam, especially by large-scale spammers. Numerous efforts have been undertaken to combat spam, ranging from blacklists to regulatorily-required labeling to content filters, but most of those efforts have adverse collateral effects, such as mistaken filtering.[5]

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Regulation

In general, consumer protection laws apply equally to online and offline activities.[72]:i However, there are questions over which jurisdiction's laws apply and which regulatory agencies have enforcement authority over transborder activity.[94]

As with offline advertising, industry participants have undertaken numerous efforts to self-regulate and develop industry standards or codes of conduct. Several United States advertising industry organizations jointly published *Self-Regulatory Principles for Online Behavioral Advertising* based on standards proposed by the FTC in 2009.[95] European ad associations published a similar document in 2011.[96] Primary tenets of both documents include consumer control of data transfer to third parties, data security, and consent for collection of certain health and financial data.[95]:2–4 Neither framework, however, penalizes violators of the codes of conduct.[97]

Privacy and Data Collection

Privacy regulation can require users' consent before an advertiser can track the user or communicate with the user. However, affirmative consent ("opt in") can be difficult and expensive to obtain.[49]:60 Industry participants often prefer other regulatory schemes.

Different jurisdictions have taken different approaches to privacy issues with advertising. The United States has specific restrictions on online tracking of children in the Children's Online Privacy Protection Act (COPPA),[95]:16–17 and the FTC has recently expanded its interpretation of COPPA to include requiring ad networks to obtain parental consent before knowingly tracking kids.[98] Otherwise, the U.S. Federal Trade Commission frequently supports industry self-regulation, although increasingly it has been undertaking enforcement actions related to online privacy and security.[99] The FTC has also been pushing for industry consensus about possible Do Not Track legislation.

In contrast, the European Union's "Privacy and Electronic Communications Directive" restricts websites' ability to use consumer data much more comprehensively. The EU limitations restrict targeting by online advertisers; researchers have estimated online advertising effectiveness decreases on average by around 65% in Europe relative to the rest of the world.[49]:58

Delivery methods

Many laws specifically regulate the ways online ads are delivered. For example, online advertising delivered via email is more regulated than the same ad content delivered via banner ads. Among other restrictions, the U.S. CAN-SPAM Act of 2003 requires that any commercial email provide an opt-out mechanism.[94] Similarly, mobile advertising is governed by the Telephone Consumer Protection Act of 1991 (TCPA), which (among other restrictions) requires user opt-in before sending advertising via text messaging.

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