

- **News**
- **SEO Sydney**
- **Local SEO Sydney**
- **SEO services Sydney**
- **search engine optimisation consultants**

- **More**

local SEO services Sydney SEO agencies in Sydney SEO service in Sydney
SEO services in Sydney SEO parramatta SEO consultant Sydney Sydney SEO
consultant Sydney SEO consulting keyword research services SEO
specialists Sydney SEO expert Sydney search engine optimisation Sydney
local SEO Sydney SEO experts Sydney SEO packages australia SEO services
expert what SEO marketing SEO meaning SEO service Sydney SEO agencies
Sydney SEO agency australia Local SEO SEO australia SEO expert digital
agency Sydney Sydney SEO consultant local SEO specialists SEO strategy
SEO in marketing content marketing Sydney SEO packages SEO parramatta
SEO Sydney expert SEO Sydney experts SEO specialist SEO for website SEO
google Sydney SEO experts SEO package australia SEO consultants Sydney
expert SEO services SEO marketing SEO check SEO packages Sydney SEO
keywords SEO website local SEO australia SEO consultant SEO package
Sydney SEO services in Sydney SEO companies in australia local SEO agency
ecommerce SEO services SEO specialists Sydney best SEO company in
Sydney content agency Sydney best SEO agency Sydney SEO agency in
Sydney SEO company Sydney SEO agencies Sydney SEO company in Sydney
SEO company Sydney SEO experts SEO agency Sydney best SEO Sydney
SEO agency in Sydney SEO services expert SEO agencies in Sydney listing
business on google best SEO company Sydney SEO service Sydney SEO
services Sydney search engine optimisation Sydney local SEO services SEO
services provider Sydney SEO company SEO company in Sydney SEO agency
Sydney SEO with wordpress SEO consultant Sydney SEO expert Sydney
Sydney SEO services SEO services company Sydney Sydney SEO consulting
SEO services company SEO services Sydney SEO expert SEO experts Sydney
SEO agency australia google listing for business search engine optimisation
strategy SEO agency

- **About Us**

- **Contact Us**



best SEO agency Sydney

link reclamation

link reclamation

SEO agency in Sydney"A Sydney-based SEO agency specializes in helping local businesses improve their online visibility and performance. Best SEO Agency Sydney Australia. By leveraging local market insights, advanced tools, and proven techniques, these agencies deliver measurable results that drive long-term growth."

SEO agency Sydney"A leading SEO agency in Sydney provides comprehensive services that help businesses improve their online visibility, drive traffic, and boost conversions. By implementing tailored strategies and staying ahead of industry trends, these agencies deliver exceptional results."

SEO agency Sydney"A leading SEO agency in Sydney provides comprehensive services that help businesses improve their online visibility, drive traffic, and boost conversions. By implementing tailored strategies and staying ahead of industry trends, these agencies deliver exceptional results."

Best SEO Sydney Agency.

Link reclamation —

- link reclamation
- Link reclamation
- Link velocity
- Listing business on Google
- local business citations
- local intent keywords
- Local link building

SEO analytics"SEO analytics involves tracking and interpreting data related to a websites search performance. Best Search Engine Optimisation Services. Metrics like organic traffic, bounce rates, click-through rates, and keyword rankings help businesses understand whats working, identify areas for improvement, and refine their strategies."

SEO audits"An SEO audit involves a comprehensive analysis of a websites current performance, identifying technical issues, content gaps, and areas for improvement.

Best SEO agency Sydney - Google ranking signals

1. Google ranking signals
2. Google site audits

Regular audits help maintain strong rankings, improve user experience, and ensure the site remains competitive in search results."

SEO Australia"SEO services in Australia help businesses across the country improve their online visibility. With a focus on industry-specific strategies, local market knowledge, and cutting-edge techniques, Australian SEO professionals deliver results that drive traffic, increase conversions, and enhance brand reputation."

Link velocity

SEO budget management"SEO budget management involves allocating resources wisely to maximize ROI. By prioritizing high-impact strategies, using cost-effective tools, and regularly reviewing performance data, businesses can achieve better results within their budget constraints."

SEO campaign management"SEO campaign management involves overseeing the implementation of various optimization strategies, tracking performance, and adjusting tactics to achieve desired outcomes. Best Local SEO Sydney. By effectively managing campaigns, businesses can maintain consistent progress, improve rankings, and reach their SEO goals."

SEO campaign reporting"SEO campaign reporting tracks progress and measures success by providing detailed insights into rankings, traffic, and conversions. Regular reporting helps businesses identify areas for improvement, refine strategies, and demonstrate ROI."

HOW SEARCH ENGINE MARKETING HELPS BUSINESS GROW OVER TIME

SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339





Listing business on Google

SEO check"An SEO check involves analyzing a websites performance to identify strengths and weaknesses. By reviewing on-page elements, technical issues, and backlink profiles, businesses can pinpoint areas for improvement and develop strategies to enhance their search rankings."

SEO companies in Australia"SEO companies in Australia offer comprehensive services designed to improve website rankings and increase organic traffic. By combining technical expertise, creative content strategies, and data analysis, these companies help businesses achieve sustainable growth and build a strong online presence."

SEO company in Sydney"A reputable SEO company in Sydney offers businesses a full suite of optimization services, including keyword research, on-page optimization, and backlink strategies. By delivering customized solutions, these companies help clients achieve higher rankings and long-term success."

SEO Packages Sydney .

local business citations

SEO company in Sydney"A reputable SEO company in Sydney offers businesses a full suite of optimization services, including keyword research, on-page optimization, and backlink strategies. By delivering customized solutions, these companies help clients achieve higher rankings and long-term success."

SEO company Sydney"An SEO company in Sydney provides businesses with customized optimization solutions that improve search rankings and drive traffic. By offering services like keyword research, content creation, technical audits, and link building, these companies help clients achieve their digital marketing goals."

SEO consultant"A professional SEO consultant provides businesses with the expertise needed to improve search rankings and increase organic traffic. By conducting detailed audits, identifying keyword opportunities, and implementing tailored strategies, these consultants deliver measurable improvements."

KEY ADVANTAGES LOCAL SEO





SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339

CONTENT MARKETING TYPES FOR SMALL BUSINESS AND BRAND BUILDING

local intent keywords

SEO consultant Sydney"A skilled SEO consultant in Sydney provides businesses with personalized guidance and expertise to improve their search rankings. By conducting in-depth audits, identifying keyword opportunities, and implementing targeted strategies, these consultants help clients achieve long-term success in their digital marketing efforts."

SEO consultant Sydney"A skilled SEO consultant in Sydney provides businesses with personalized guidance and expertise to improve their search rankings. By conducting in-depth audits, identifying keyword opportunities, and implementing targeted strategies, these consultants help clients achieve long-term success in their digital marketing efforts."

SEO consultants Sydney"Sydney-based SEO consultants provide expert guidance to improve search rankings, increase organic traffic, and drive conversions. With a focus on data-driven strategies and continuous improvement, these consultants help businesses achieve sustainable growth."

Local link building

SEO content marketing"SEO content marketing focuses on creating high-quality, keyword-optimized content that drives organic traffic. By combining SEO best practices with engaging storytelling, businesses can improve search rankings, attract more visitors, and convert readers into customers."

SEO conversion optimization"SEO conversion optimization involves creating content and calls-to-action that guide visitors toward completing desired actions. By combining effective SEO techniques with user-friendly design and clear messaging, businesses can increase conversions and maximize the return on their optimization efforts."

SEO copywriting"SEO copywriting combines engaging content with strategic keyword usage. By crafting compelling, informative, and keyword-optimized copy, businesses can improve rankings, attract more visitors, and convert readers into customers."

Best SEO agency Sydney - Google ranking signals

- Googles mobile-first approach
- Mobile search optimization



SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQ
265 GEORGE ST. SYDNEY NSW 2000
PHONE: 1300 684 339

**SEO SERVICES EXPERT'S MAIN
IS TO GROW YOUR BUSINESS C
WITH CONTINUES STRA**

About Search engine optimization



This article needs to be **updated**. Please help update this article to reflect recent events or newly available information. (December 2024)



This article **is written like a [personal reflection, personal essay, or argumentative essay](#)** that states a Wikipedia editor's personal feelings or presents an original argument about a topic. Please [help improve it](#) by rewriting it in an [encyclopedic style](#). *(January 2025)* ([Learn how and when to remove this message](#))



This article has multiple issues. Please help [improve it](#) or discuss these issues on the [talk page](#). ([Learn how and when to remove these messages](#))

([Learn how and when to remove this message](#))

"SEO" redirects here. For other uses, see [Seo \(disambiguation\)](#).

- [v](#)
- [t](#)
- [e](#)

Part of a series on

[Internet marketing](#)

- [Search engine optimization](#)
- [Local search engine optimisation](#)
- [Social media marketing](#)
- [Email marketing](#)
- [Referral marketing](#)
- [Content marketing](#)
- [Native advertising](#)

[Search engine marketing](#)

- [Pay-per-click](#)
- [Cost per impression](#)
- [Search analytics](#)
- [Web analytics](#)

[Display advertising](#)

- [Ad blocking](#)
- [Contextual advertising](#)
- [Behavioral targeting](#)

[Affiliate marketing](#)

- Cost per action
- Revenue sharing

Mobile advertising

Search engine optimization (SEO) is the process of improving the quality and quantity of **website traffic** to a **website** or a **web page** from **search engines**.^{[1][2]} SEO targets unpaid search traffic (usually referred to as "**organic**" results) rather than direct traffic, referral traffic, social media traffic, or **paid traffic**.

Unpaid search engine traffic may originate from a variety of kinds of searches, including **image search**, **video search**, **academic search**,^[3] news search, and industry-specific **vertical search engines**.

As an **Internet marketing** strategy, SEO considers how search engines work, the computer-programmed **algorithms** that dictate search engine results, what people search for, the actual search queries or **keywords** typed into search engines, and which search engines are preferred by a target audience. SEO is performed because a website will receive more visitors from a search engine when websites rank higher within a **search engine results page** (SERP), with the aim of either converting the visitors or building brand awareness.^[4]

History

[\[edit\]](#)

Webmasters and content providers began optimizing websites for search engines in the mid-1990s, as the first search engines were cataloging the early **Web**. Initially, webmasters submitted the address of a page, or **URL** to the various search engines, which would send a **web crawler** to *crawl* that page, extract links to other pages from it, and return information found on the page to be **indexed**.^[5]

According to a 2004 article by former industry analyst and current **Google** employee **Danny Sullivan**, the phrase "search engine optimization" probably came into use in 1997. Sullivan credits SEO practitioner Bruce Clay as one of the first people to popularize the term.^[6]

Early versions of search **algorithms** relied on webmaster-provided information such as the keyword **meta tag** or index files in engines like **ALIWEB**. Meta tags provide a guide to each page's content. Using metadata to index pages was found to be less than reliable, however, because the webmaster's choice of keywords in the meta tag could potentially be an inaccurate representation of the site's actual content. Flawed data in meta tags, such as those that were inaccurate or incomplete, created the potential for pages to be mischaracterized in irrelevant searches.^[7]^[*dubious – discuss*] Web content providers also manipulated attributes within the **HTML** source of a page in an attempt to rank well in search engines.^[8] By 1997, search engine

designers recognized that webmasters were making efforts to rank in search engines and that some webmasters were **manipulating their rankings** in search results by stuffing pages with excessive or irrelevant keywords. Early search engines, such as **Altavista** and **Infoseek**, adjusted their algorithms to prevent webmasters from manipulating rankings.[9]

By heavily relying on factors such as **keyword density**, which were exclusively within a webmaster's control, early search engines suffered from abuse and ranking manipulation. To provide better results to their users, search engines had to adapt to ensure their **results pages** showed the most relevant search results, rather than unrelated pages stuffed with numerous keywords by unscrupulous webmasters. This meant moving away from heavy reliance on term density to a more holistic process for scoring semantic signals.[10]

Search engines responded by developing more complex **ranking algorithms**, taking into account additional factors that were more difficult for webmasters to manipulate.[*citation needed*]

Some search engines have also reached out to the SEO industry and are frequent sponsors and guests at SEO conferences, webchats, and seminars. Major search engines provide information and guidelines to help with website optimization.[11][12] Google has a **Sitemaps** program to help webmasters learn if Google is having any problems indexing their website and also provides data on Google traffic to the website.[13] **Bing Webmaster Tools** provides a way for webmasters to submit a sitemap and web feeds, allows users to determine the "crawl rate", and track the web pages index status.

In 2015, it was reported that **Google** was developing and promoting mobile search as a key feature within future products. In response, many brands began to take a different approach to their Internet marketing strategies.[14]

Relationship with Google

[**edit**]

In 1998, two graduate students at **Stanford University**, **Larry Page** and **Sergey Brin**, developed "Backrub", a search engine that relied on a mathematical algorithm to rate the prominence of web pages. The number calculated by the algorithm, **PageRank**, is a function of the quantity and strength of **inbound links**. [15] PageRank estimates the likelihood that a given page will be reached by a web user who randomly surfs the web and follows links from one page to another. In effect, this means that some links are stronger than others, as a higher PageRank page is more likely to be reached by the random web surfer.

Page and Brin founded Google in 1998.[16] Google attracted a loyal following among the growing number of **Internet** users, who liked its simple design.[17] Off-page factors (such as PageRank and hyperlink analysis) were considered as well as on-page factors (such as keyword frequency, **meta tags**, headings, links and site structure) to enable Google to avoid the kind of manipulation seen in search engines that only considered on-page factors for their rankings. Although PageRank was more difficult to **game**, webmasters had already developed

link-building tools and schemes to influence the [Inktomi](#) search engine, and these methods proved similarly applicable to gaming PageRank. Many sites focus on exchanging, buying, and selling links, often on a massive scale. Some of these schemes involved the creation of thousands of sites for the sole purpose of [link spamming](#).[\[18\]](#)

By 2004, search engines had incorporated a wide range of undisclosed factors in their ranking algorithms to reduce the impact of link manipulation.[\[19\]](#) The leading search engines, Google, [Bing](#), and [Yahoo](#), do not disclose the algorithms they use to rank pages. Some SEO practitioners have studied different approaches to search engine optimization and have shared their personal opinions.[\[20\]](#) Patents related to search engines can provide information to better understand search engines.[\[21\]](#) In 2005, Google began personalizing search results for each user. Depending on their history of previous searches, Google crafted results for logged in users.[\[22\]](#)

In 2007, Google announced a campaign against paid links that transfer PageRank.[\[23\]](#) On June 15, 2009, Google disclosed that they had taken measures to mitigate the effects of PageRank sculpting by use of the [nofollow](#) attribute on links. [Matt Cutts](#), a well-known software engineer at Google, announced that Google Bot would no longer treat any no follow links, in the same way, to prevent SEO service providers from using nofollow for PageRank sculpting.[\[24\]](#) As a result of this change, the usage of nofollow led to evaporation of PageRank. In order to avoid the above, SEO engineers developed alternative techniques that replace nofollowed tags with obfuscated [JavaScript](#) and thus permit PageRank sculpting. Additionally, several solutions have been suggested that include the usage of [iframes](#), [Flash](#), and JavaScript.[\[25\]](#)

In December 2009, Google announced it would be using the web search history of all its users in order to populate search results.[\[26\]](#) On June 8, 2010 a new web indexing system called [Google Caffeine](#) was announced. Designed to allow users to find news results, forum posts, and other content much sooner after publishing than before, Google Caffeine was a change to the way Google updated its index in order to make things show up quicker on Google than before. According to Carrie Grimes, the software engineer who announced Caffeine for Google, "Caffeine provides 50 percent fresher results for web searches than our last index..."[\[27\]](#) [Google Instant](#), real-time-search, was introduced in late 2010 in an attempt to make search results more timely and relevant. Historically site administrators have spent months or even years optimizing a website to increase search rankings. With the growth in popularity of social media sites and blogs, the leading engines made changes to their algorithms to allow fresh content to rank quickly within the search results.[\[28\]](#)

In February 2011, Google announced the [Panda](#) update, which penalizes websites containing content duplicated from other websites and sources. Historically websites have copied content from one another and benefited in search engine rankings by engaging in this practice. However, Google implemented a new system that punishes sites whose content is not unique.[\[29\]](#) The 2012 [Google Penguin](#) attempted to penalize websites that used manipulative techniques to improve their rankings on the search engine.[\[30\]](#) Although Google Penguin has been presented as an algorithm aimed at fighting web spam, it really focuses on spammy links[\[31\]](#) by gauging the quality of the sites the links are coming from. The 2013 [Google Hummingbird](#)

update featured an algorithm change designed to improve Google's natural language processing and semantic understanding of web pages. Hummingbird's language processing system falls under the newly recognized term of "conversational search", where the system pays more attention to each word in the query in order to better match the pages to the meaning of the query rather than a few words.[32] With regards to the changes made to search engine optimization, for content publishers and writers, Hummingbird is intended to resolve issues by getting rid of irrelevant content and spam, allowing Google to produce high-quality content and rely on them to be 'trusted' authors.

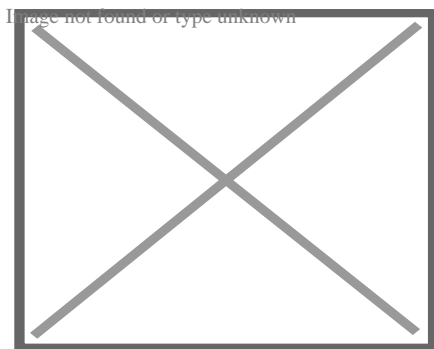
In October 2019, Google announced they would start applying **BERT** models for English language search queries in the US. Bidirectional Encoder Representations from Transformers (BERT) was another attempt by Google to improve their natural language processing, but this time in order to better understand the search queries of their users.[33] In terms of search engine optimization, BERT intended to connect users more easily to relevant content and increase the quality of traffic coming to websites that are ranking in the **Search Engine Results Page**.

Methods

[[edit](#)]

Getting indexed

[[edit](#)]



A simple illustration of the **Pagerank** algorithm. Percentage shows the perceived importance.

The leading search engines, such as Google, Bing, and Yahoo!, use **crawlers** to find pages for their algorithmic search results. Pages that are linked from other search engine-indexed pages do not need to be submitted because they are found automatically. The **Yahoo! Directory** and **DMOZ**, two major directories which closed in 2014 and 2017 respectively, both required manual submission and human editorial review.[34] Google offers **Google Search Console**, for which an XML **Sitemap** feed can be created and submitted for free to ensure that all pages are found, especially pages that are not discoverable by automatically following links[35] in addition to their URL submission console.[36] Yahoo! formerly operated a paid submission service that guaranteed to crawl for a **cost per click**;[\[37\]](#) however, this practice was discontinued in 2009.

Search engine crawlers may look at a number of different factors when **crawling** a site. Not every page is indexed by search engines. The distance of pages from the root directory of a site may also be a factor in whether or not pages get crawled.[38]

Mobile devices are used for the majority of Google searches.[39] In November 2016, Google announced a major change to the way they are crawling websites and started to make their index mobile-first, which means the mobile version of a given website becomes the starting point for what Google includes in their index.[40] In May 2019, Google updated the rendering engine of their crawler to be the latest version of Chromium (74 at the time of the announcement). Google indicated that they would regularly update the **Chromium** rendering engine to the latest version.[41] In December 2019, Google began updating the User-Agent string of their crawler to reflect the latest Chrome version used by their rendering service. The delay was to allow webmasters time to update their code that responded to particular bot User-Agent strings. Google ran evaluations and felt confident the impact would be minor.[42]

Preventing crawling

[edit]

Main article: **Robots exclusion standard**

To avoid undesirable content in the search indexes, webmasters can instruct spiders not to crawl certain files or directories through the standard **robots.txt** file in the root directory of the domain. Additionally, a page can be explicitly excluded from a search engine's database by using a **meta tag** specific to robots (usually <meta name="robots" content="noindex">). When a search engine visits a site, the robots.txt located in the **root directory** is the first file crawled. The robots.txt file is then parsed and will instruct the robot as to which pages are not to be crawled. As a search engine crawler may keep a cached copy of this file, it may on occasion crawl pages a webmaster does not wish to crawl. Pages typically prevented from being crawled include login-specific pages such as shopping carts and user-specific content such as search results from internal searches. In March 2007, Google warned webmasters that they should prevent indexing of internal search results because those pages are considered search spam.[43]

In 2020, Google **sunsetted** the standard (and open-sourced their code) and now treats it as a hint rather than a directive. To adequately ensure that pages are not indexed, a page-level robot's meta tag should be included.[44]

Increasing prominence

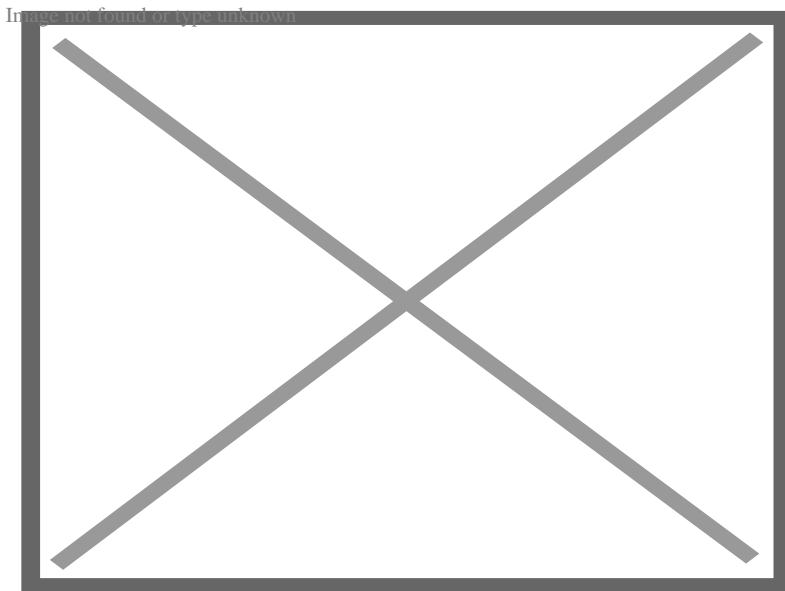
[edit]

A variety of methods can increase the prominence of a webpage within the search results. **Cross linking** between pages of the same website to provide more links to important pages may improve its visibility. Page design makes users trust a site and want to stay once they find it. When people bounce off a site, it counts against the site and affects its credibility.[45]

Writing content that includes frequently searched keyword phrases so as to be relevant to a wide variety of search queries will tend to increase traffic. Updating content so as to keep search engines crawling back frequently can give additional weight to a site. Adding relevant keywords to a web page's metadata, including the **title tag and meta description**, will tend to improve the relevancy of a site's search listings, thus increasing traffic. **URL canonicalization** of web pages accessible via multiple URLs, using the **canonical link element**^[46] or via **301 redirects** can help make sure links to different versions of the URL all count towards the page's link popularity score. These are known as incoming links, which point to the URL and can count towards the page link's popularity score, impacting the credibility of a website.^[45]

White hat versus black hat techniques

[\[edit\]](#)



Common white-hat methods of search engine optimization

SEO techniques can be classified into two broad categories: techniques that search engine companies recommend as part of good design ("white hat"), and those techniques of which search engines do not approve ("black hat"). Search engines attempt to minimize the effect of the latter, among them **spamdexing**. Industry commentators have classified these methods and the practitioners who employ them as either **white hat** SEO or **black hat** SEO.^[47] White hats tend to produce results that last a long time, whereas black hats anticipate that their sites may eventually be banned either temporarily or permanently once the search engines discover what they are doing.^[48]

An SEO technique is considered a white hat if it conforms to the search engines' guidelines and involves no deception. As the search engine guidelines^{[11][12][49]} are not written as a series of rules or commandments, this is an important distinction to note. White hat SEO is not just about following guidelines but is about ensuring that the content a search engine indexes and subsequently ranks is the same content a user will see. White hat advice is generally summed

up as creating content for users, not for search engines, and then making that content easily accessible to the online "spider" algorithms, rather than attempting to trick the algorithm from its intended purpose. White hat SEO is in many ways similar to web development that promotes accessibility,[50] although the two are not identical.

Black hat SEO attempts to improve rankings in ways that are disapproved of by the search engines or involve deception. One black hat technique uses hidden text, either as text colored similar to the background, in an invisible **div**, or positioned off-screen. Another method gives a different page depending on whether the page is being requested by a human visitor or a search engine, a technique known as **cloaking**. Another category sometimes used is **grey hat SEO**. This is in between the black hat and white hat approaches, where the methods employed avoid the site being penalized but do not act in producing the best content for users. Grey hat SEO is entirely focused on improving search engine rankings.

Search engines may penalize sites they discover using black or grey hat methods, either by reducing their rankings or eliminating their listings from their databases altogether. Such penalties can be applied either automatically by the search engines' algorithms or by a manual site review. One example was the February 2006 Google removal of both **BMW** Germany and **Ricoh** Germany for the use of deceptive practices.[51] Both companies subsequently apologized, fixed the offending pages, and were restored to Google's search engine results page.[52]

Companies that employ black hat techniques or other spammy tactics can get their client websites banned from the search results. In 2005, the *Wall Street Journal* reported on a company, **Traffic Power**, which allegedly used high-risk techniques and failed to disclose those risks to its clients.[53] *Wired* magazine reported that the same company sued blogger and SEO Aaron Wall for writing about the ban.[54] Google's **Matt Cutts** later confirmed that Google had banned Traffic Power and some of its clients.[55]

As marketing strategy

[edit]

SEO is not an appropriate strategy for every website, and other Internet marketing strategies can be more effective, such as paid advertising through pay-per-click (**PPC**) campaigns, depending on the site operator's goals.[*editorializing*] **Search engine marketing (SEM)** is the practice of designing, running, and optimizing search engine ad campaigns. Its difference from SEO is most simply depicted as the difference between paid and unpaid priority ranking in search results. SEM focuses on prominence more so than relevance; website developers should regard SEM with the utmost importance with consideration to visibility as most navigate to the primary listings of their search.[56] A successful Internet marketing campaign may also depend upon building high-quality web pages to engage and persuade internet users, setting up **analytics** programs to enable site owners to measure results, and improving a site's **conversion rate**. [57][58] In November 2015, Google released a full 160-page version of its Search Quality Rating Guidelines to the public,[59] which revealed a shift in their focus towards "usefulness"

and [mobile local search](#). In recent years the mobile market has exploded, overtaking the use of desktops, as shown in by [StatCounter](#) in October 2016, where they analyzed 2.5 million websites and found that 51.3% of the pages were loaded by a mobile device.^[60] Google has been one of the companies that are utilizing the popularity of mobile usage by encouraging websites to use their [Google Search Console](#), the Mobile-Friendly Test, which allows companies to measure up their website to the search engine results and determine how user-friendly their websites are. The closer the keywords are together their ranking will improve based on key terms.^[45]

SEO may generate an adequate [return on investment](#). However, search engines are not paid for organic search traffic, their algorithms change, and there are no guarantees of continued referrals. Due to this lack of guarantee and uncertainty, a business that relies heavily on search engine traffic can suffer major losses if the search engines stop sending visitors.^[61] Search engines can change their algorithms, impacting a website's search engine ranking, possibly resulting in a serious loss of traffic. According to Google's CEO, [Eric Schmidt](#), in 2010, Google made over 500 algorithm changes – almost 1.5 per day.^[62] It is considered a wise business practice for website operators to liberate themselves from dependence on search engine traffic.^[63] In addition to accessibility in terms of web crawlers (addressed above), user [web accessibility](#) has become increasingly important for SEO.

International markets and SEO

[\[edit\]](#)

Optimization techniques are highly tuned to the dominant search engines in the target market. The search engines' market shares vary from market to market, as does competition. In 2003, [Danny Sullivan](#) stated that [Google](#) represented about 75% of all searches.^[64] In markets outside the United States, Google's share is often larger, and data showed Google was the dominant search engine worldwide as of 2007.^[65] As of 2006, Google had an 85–90% market share in Germany.^[66] While there were hundreds of SEO firms in the US at that time, there were only about five in Germany.^[66] As of March 2024, Google still had a significant market share of 89.85% in Germany.^[67] As of June 2008, the market share of Google in the UK was close to 90% according to [Hitwise](#).^[68] [\[obsolete source\]](#) As of March 2024, Google's market share in the UK was 93.61%.^[69]

Successful search engine optimization (SEO) for international markets requires more than just translating web pages. It may also involve registering a domain name with a [country-code top-level domain](#) (ccTLD) or a relevant [top-level domain](#) (TLD) for the target market, choosing web hosting with a local IP address or server, and using a [Content Delivery Network](#) (CDN) to improve website speed and performance globally. It is also important to understand the local culture so that the content feels relevant to the audience. This includes conducting keyword research for each market, using hreflang tags to target the right languages, and building local backlinks. However, the core SEO principles—such as creating high-quality content, improving user experience, and building links—remain the same, regardless of language or region.^[66]

Regional search engines have a strong presence in specific markets:

- China: **Baidu** leads the market, controlling about 70 to 80% market share.^[70]
- South Korea: Since the end of 2021, **Naver**, a domestic web portal, has gained prominence in the country.^{[71][72]}
- Russia: **Yandex** is the leading search engine in Russia. As of December 2023, it accounted for at least 63.8% of the market share.^[73]

The Evolution of International SEO

[\[edit\]](#)

By the early 2000s, businesses recognized that the web and search engines could help them reach global audiences. As a result, the need for multilingual SEO emerged.^[74] In the early years of international SEO development, simple translation was seen as sufficient. However, over time, it became clear that localization and transcreation—adapting content to local language, culture, and emotional resonance—were far more effective than basic translation.^[75]

Legal precedents

[\[edit\]](#)

On October 17, 2002, SearchKing filed suit in the **United States District Court**, Western District of Oklahoma, against the search engine Google. SearchKing's claim was that Google's tactics to prevent spamdexing constituted a **tortious interference** with contractual relations. On May 27, 2003, the court granted Google's motion to dismiss the complaint because SearchKing "failed to state a claim upon which relief may be granted."^{[76][77]}

In March 2006, KinderStart filed a lawsuit against Google over search engine rankings. KinderStart's website was removed from Google's index prior to the lawsuit, and the amount of traffic to the site dropped by 70%. On March 16, 2007, the **United States District Court for the Northern District of California** (**San Jose** Division) dismissed KinderStart's complaint without leave to amend and partially granted Google's motion for **Rule 11** sanctions against KinderStart's attorney, requiring him to pay part of Google's legal expenses.^{[78][79]}

See also

[\[edit\]](#)

- **Competitor backlinking**
- **List of search engines**
- **Search engine marketing**
- **Search neutrality**, the opposite of search manipulation
- **User intent**

- Website promotion
- Search engine results page
- Search engine scraping

References

[edit]

1. ^ "SEO – search engine optimization". Webopedia. December 19, 2001. Archived from the original on May 9, 2019. Retrieved May 9, 2019.
2. ^ Giomelakis, Dimitrios; Veglis, Andreas (April 2, 2016). "Investigating Search Engine Optimization Factors in Media Websites: The case of Greece". *Digital Journalism*. 4 (3): 379–400. doi:10.1080/21670811.2015.1046992. ISSN 2167-0811. S2CID 166902013. Archived from the original on October 30, 2022. Retrieved October 30, 2022.
3. ^ Beel, Jöran; Gipp, Bela; Wilde, Erik (2010). "Academic Search Engine Optimization (ASEO): Optimizing Scholarly Literature for Google Scholar and Co" (PDF). *Journal of Scholarly Publishing*. pp. 176–190. Archived from the original (PDF) on November 18, 2017. Retrieved April 18, 2010.
4. ^ Ortiz-Cordova, A. and Jansen, B. J. (2012) Classifying Web Search Queries in Order to Identify High Revenue Generating Customers. Archived March 4, 2016, at the Wayback Machine. *Journal of the American Society for Information Sciences and Technology*. 63(7), 1426 – 1441.
5. ^ Brian Pinkerton. "Finding What People Want: Experiences with the WebCrawler" (PDF). *The Second International WWW Conference Chicago, USA, October 17–20, 1994*. Archived (PDF) from the original on May 8, 2007. Retrieved May 7, 2007.
6. ^ Danny Sullivan (June 14, 2004). "Who Invented the Term "Search Engine Optimization"?". *Search Engine Watch*. Archived from the original on April 23, 2010. Retrieved May 14, 2007. See Google groups thread Archived June 17, 2013, at the Wayback Machine.
7. ^ "The Challenge is Open", *Brain vs Computer*, WORLD SCIENTIFIC, November 17, 2020, pp. 189–211, doi:10.1142/9789811225017_0009, ISBN 978-981-12-2500-0, S2CID 243130517
8. ^ Pringle, G.; Allison, L.; Dowe, D. (April 1998). "What is a tall poppy among web pages?". Monash University. Archived from the original on April 27, 2007. Retrieved May 8, 2007.
9. ^ Laurie J. Flynn (November 11, 1996). "Desperately Seeking Surfers". *New York Times*. Archived from the original on October 30, 2007. Retrieved May 9, 2007.
10. ^ Jason Demers (January 20, 2016). "Is Keyword Density Still Important for SEO". *Forbes*. Archived from the original on August 16, 2016. Retrieved August 15, 2016.
11. ^ a b "Google's Guidelines on Site Design". Archived from the original on January 9, 2009. Retrieved April 18, 2007.
12. ^ a b "Bing Webmaster Guidelines". bing.com. Archived from the original on September 9, 2014. Retrieved September 11, 2014.
13. ^ "Sitemaps". Archived from the original on June 22, 2023. Retrieved July 4, 2012.

14. ^ *"By the Data: For Consumers, Mobile is the Internet" Google for Entrepreneurs Startup Grind September 20, 2015*. Archived from the original on January 6, 2016. Retrieved January 8, 2016.
15. ^ Brin, Sergey & Page, Larry (1998). *"The Anatomy of a Large-Scale Hypertextual Web Search Engine"*. Proceedings of the seventh international conference on World Wide Web. pp. 107–117. Archived from the original on October 10, 2006. Retrieved May 8, 2007.
16. ^ *"Co-founders of Google - Google's co-founders may not have the name recognition of say, Bill Gates, but give them time: Google hasn't been around nearly as long as Microsoft"*. Entrepreneur. October 15, 2008. Archived from the original on May 31, 2014. Retrieved May 30, 2014.
17. ^ Thompson, Bill (December 19, 2003). *"Is Google good for you?"*. BBC News. Archived from the original on January 25, 2009. Retrieved May 16, 2007.
18. ^ Zoltan Gyongyi & Hector Garcia-Molina (2005). *"Link Spam Alliances"* (PDF). Proceedings of the 31st VLDB Conference, Trondheim, Norway. Archived (PDF) from the original on June 12, 2007. Retrieved May 9, 2007.
19. ^ Hansell, Saul (June 3, 2007). *"Google Keeps Tweaking Its Search Engine"*. New York Times. Archived from the original on November 10, 2017. Retrieved June 6, 2007.
20. ^ Sullivan, Danny (September 29, 2005). *"Rundown On Search Ranking Factors"*. Search Engine Watch. Archived from the original on May 28, 2007. Retrieved May 8, 2007.
21. ^ Christine Churchill (November 23, 2005). *"Understanding Search Engine Patents"*. Search Engine Watch. Archived from the original on February 7, 2007. Retrieved May 8, 2007.
22. ^ *"Google Personalized Search Leaves Google Labs"*. searchenginewatch.com. Search Engine Watch. Archived from the original on January 25, 2009. Retrieved September 5, 2009.
23. ^ *"8 Things We Learned About Google PageRank"*. www.searchenginejournal.com. October 25, 2007. Archived from the original on August 19, 2009. Retrieved August 17, 2009.
24. ^ *"PageRank sculpting"*. Matt Cutts. Archived from the original on January 6, 2010. Retrieved January 12, 2010.
25. ^ *"Google Loses 'Backwards Compatibility' On Paid Link Blocking & PageRank Sculpting"*. searchengineland.com. June 3, 2009. Archived from the original on August 14, 2009. Retrieved August 17, 2009.
26. ^ *"Personalized Search for everyone"*. Archived from the original on December 8, 2009. Retrieved December 14, 2009.
27. ^ *"Our new search index: Caffeine"*. Google: Official Blog. Archived from the original on June 18, 2010. Retrieved May 10, 2014.
28. ^ *"Relevance Meets Real-Time Web"*. Google Blog. Archived from the original on April 7, 2019. Retrieved January 4, 2010.
29. ^ *"Google Search Quality Updates"*. Google Blog. Archived from the original on April 23, 2022. Retrieved March 21, 2012.
30. ^ *"What You Need to Know About Google's Penguin Update"*. Inc.com. June 20, 2012. Archived from the original on December 20, 2012. Retrieved December 6, 2012.

31. ^ ["Google Penguin looks mostly at your link source, says Google"](#). Search Engine Land. October 10, 2016. [Archived](#) from the original on April 21, 2017. Retrieved April 20, 2017.
32. ^ ["FAQ: All About The New Google "Hummingbird" Algorithm"](#). [www.searchengineland.com](#). September 26, 2013. [Archived](#) from the original on December 23, 2018. Retrieved March 17, 2018.
33. ^ ["Understanding searches better than ever before"](#). Google. October 25, 2019. [Archived](#) from the original on January 27, 2021. Retrieved May 12, 2020.
34. ^ ["Submitting To Directories: Yahoo & The Open Directory"](#). [Search Engine Watch](#). March 12, 2007. [Archived](#) from the original on May 19, 2007. Retrieved May 15, 2007.
35. ^ ["What is a Sitemap file and why should I have one?"](#). [Archived](#) from the original on July 1, 2007. Retrieved March 19, 2007.
36. ^ ["Search Console - Crawl URL"](#). [Archived](#) from the original on August 14, 2022. Retrieved December 18, 2015.
37. ^ Sullivan, Danny (March 12, 2007). ["Submitting To Search Crawlers: Google, Yahoo, Ask & Microsoft's Live Search"](#). [Search Engine Watch](#). [Archived](#) from the original on May 10, 2007. Retrieved May 15, 2007.
38. ^ Cho, J.; Garcia-Molina, H.; Page, L. (1998). ["Efficient crawling through URL ordering"](#). Seventh International World-Wide Web Conference. Brisbane, Australia: Stanford InfoLab Publication Server. [Archived](#) from the original on July 14, 2019. Retrieved May 9, 2007.
39. ^ ["Mobile-first Index"](#). [Archived](#) from the original on February 22, 2019. Retrieved March 19, 2018.
40. ^ Phan, Doantam (November 4, 2016). ["Mobile-first Indexing"](#). Official Google Webmaster Central Blog. [Archived](#) from the original on February 22, 2019. Retrieved January 16, 2019.
41. ^ ["The new evergreen Googlebot"](#). Official Google Webmaster Central Blog. [Archived](#) from the original on November 6, 2020. Retrieved March 2, 2020.
42. ^ ["Updating the user agent of Googlebot"](#). Official Google Webmaster Central Blog. [Archived](#) from the original on March 2, 2020. Retrieved March 2, 2020.
43. ^ ["Newspapers Amok! New York Times Spamming Google? LA Times Hijacking Cars.com?"](#). [Search Engine Land](#). May 8, 2007. [Archived](#) from the original on December 26, 2008. Retrieved May 9, 2007.
44. ^ Jill Kocher Brown (February 24, 2020). ["Google Downgrades Nofollow Directive. Now What?"](#). Practical Ecommerce. [Archived](#) from the original on January 25, 2021. Retrieved February 11, 2021.
45. ^ **a b c** Morey, Sean (2008). *The Digital Writer*. Fountainhead Press. pp. 171–187.
46. ^ ["Bing – Partnering to help solve duplicate content issues – Webmaster Blog – Bing Community"](#). [www.bing.com](#). February 12, 2009. [Archived](#) from the original on June 7, 2014. Retrieved October 30, 2009.
47. ^ Andrew Goodman. ["Search Engine Showdown: Black hats vs. White hats at SES"](#). [SearchEngineWatch](#). [Archived](#) from the original on February 22, 2007. Retrieved May 9, 2007.
48. ^ Jill Whalen (November 16, 2004). ["Black Hat/White Hat Search Engine Optimization"](#). [searchengineguide.com](#). [Archived](#) from the original on November 17, 2004. Retrieved May 9, 2007.

49. ^ "What's an SEO? Does Google recommend working with companies that offer to make my site Google-friendly?". Archived from the original on April 16, 2006. Retrieved April 18, 2007.
50. ^ Andy Hagans (November 8, 2005). "High Accessibility Is Effective Search Engine Optimization". A List Apart. Archived from the original on May 4, 2007. Retrieved May 9, 2007.
51. ^ Matt Cutts (February 4, 2006). "Ramping up on international webspam". mattcutts.com/blog. Archived from the original on June 29, 2012. Retrieved May 9, 2007.
52. ^ Matt Cutts (February 7, 2006). "Recent reinclusions". mattcutts.com/blog. Archived from the original on May 22, 2007. Retrieved May 9, 2007.
53. ^ David Kesmodel (September 22, 2005). "Sites Get Dropped by Search Engines After Trying to 'Optimize' Rankings". Wall Street Journal. Archived from the original on August 4, 2020. Retrieved July 30, 2008.
54. ^ Adam L. Penenberg (September 8, 2005). "Legal Showdown in Search Fracas". Wired Magazine. Archived from the original on March 4, 2016. Retrieved August 11, 2016.
55. ^ Matt Cutts (February 2, 2006). "Confirming a penalty". mattcutts.com/blog. Archived from the original on June 26, 2012. Retrieved May 9, 2007.
56. ^ Tapan, Panda (2013). "Search Engine Marketing: Does the Knowledge Discovery Process Help Online Retailers?". IUP Journal of Knowledge Management. 11 (3): 56–66. ProQuest 1430517207.
57. ^ Melissa Burdon (March 13, 2007). "The Battle Between Search Engine Optimization and Conversion: Who Wins?". Grok.com. Archived from the original on March 15, 2008. Retrieved April 10, 2017.
58. ^ "SEO Tips and Marketing Strategies". Archived from the original on October 30, 2022. Retrieved October 30, 2022.
59. ^ ""Search Quality Evaluator Guidelines" How Search Works November 12, 2015" (PDF). Archived (PDF) from the original on March 29, 2019. Retrieved January 11, 2016.
60. ^ Titcomb, James (November 2016). "Mobile web usage overtakes desktop for first time". The Telegraph. Archived from the original on January 10, 2022. Retrieved March 17, 2018.
61. ^ Andy Greenberg (April 30, 2007). "Condemned To Google Hell". Forbes. Archived from the original on May 2, 2007. Retrieved May 9, 2007.
62. ^ Matt McGee (September 21, 2011). "Schmidt's testimony reveals how Google tests algorithm changes". Archived from the original on January 17, 2012. Retrieved January 4, 2012.
63. ^ Jakob Nielsen (January 9, 2006). "Search Engines as Leeches on the Web". useit.com. Archived from the original on August 25, 2012. Retrieved May 14, 2007.
64. ^ Graham, Jefferson (August 26, 2003). "The search engine that could". USA Today. Archived from the original on May 17, 2007. Retrieved May 15, 2007.
65. ^ Greg Jarboe (February 22, 2007). "Stats Show Google Dominates the International Search Landscape". Search Engine Watch. Archived from the original on May 23, 2011. Retrieved May 15, 2007.
66. ^ a b c Mike Grehan (April 3, 2006). "Search Engine Optimizing for Europe". Click. Archived from the original on November 6, 2010. Retrieved May 14, 2007.
67. ^ "Germany search engine market share 2024". Statista. Retrieved January 6, 2025.

68. ^ Jack Schofield (June 10, 2008). *"Google UK closes in on 90% market share"*. *Guardian*. London. *Archived* from the original on December 17, 2013. Retrieved June 10, 2008.
69. ^ *"UK search engines market share 2024"*. Statista. Retrieved January 6, 2025.
70. ^ *"China search engines market share 2024"*. Statista. Retrieved January 6, 2025.
71. ^ cycles, This text provides general information Statista assumes no liability for the information given being complete or correct Due to varying update; Text, Statistics Can Display More up-to-Date Data Than Referenced in the. *"Topic: Search engines in South Korea"*. Statista. Retrieved January 6, 2025.
72. ^ *"South Korea: main service used to search for information 2024"*. Statista. Retrieved January 6, 2025.
73. ^ *"Most popular search engines in Russia 2023"*. Statista. Retrieved January 6, 2025.
74. ^ Arora, Sanjog; Hemrajani, Naveen (September 2023). *"A REVIEW ON: MULTILINGUAL SEARCH TECHNIQUE"*. *International Journal of Applied Engineering & Technology*. **5** (3): 760–770 – via ResearchGate.
75. ^ *"SEO Starter Guide: The Basics | Google Search Central | Documentation"*. Google for Developers. Retrieved January 13, 2025.
76. ^ *"Search King, Inc. v. Google Technology, Inc., CIV-02-1457-M"* (PDF). docstoc.com. May 27, 2003. *Archived* from the original on May 27, 2008. Retrieved May 23, 2008.
77. ^ Stefanie Olsen (May 30, 2003). *"Judge dismisses suit against Google"*. *CNET*. *Archived* from the original on December 1, 2010. Retrieved May 10, 2007.
78. ^ *"Technology & Marketing Law Blog: KinderStart v. Google Dismissed—With Sanctions Against KinderStart's Counsel"*. blog.ericgoldman.org. March 20, 2007. *Archived* from the original on May 11, 2008. Retrieved June 23, 2008.
79. ^ *"Technology & Marketing Law Blog: Google Sued Over Rankings—KinderStart.com v. Google"*. blog.ericgoldman.org. *Archived* from the original on June 22, 2008. Retrieved June 23, 2008.

External links

[[edit](#)]

Listen to this article (22 minutes)

Spoken Wikipedia icon

Image not found or type unknown

This audio file was created from a revision of this article dated 20 May 2008, and does not reflect subsequent edits.

([Audio help](#) · [More spoken articles](#))

- [Webmaster Guidelines](#) from Google
- [Google Search Quality Evaluators Guidelines \(PDF\)](#)
- [Webmaster resources](#) from Yahoo!
- [Webmaster Guidelines](#) from Microsoft Bing
- [The Dirty Little Secrets of Search](#) in *The New York Times* (February 12, 2011)

- **v**
- **t**
- **e**

Search engine optimization

Exclusion standards	<ul style="list-style-type: none"> ○ Robots exclusion standard ○ Meta element ○ nofollow
Marketing topics	<ul style="list-style-type: none"> ○ Online advertising ○ Email marketing ○ Display advertising ○ Web analytics
Search marketing	<ul style="list-style-type: none"> ○ Search engine marketing ○ Social media optimization ○ Online identity management ○ Paid inclusion ○ Pay per click ○ Google bomb
Search engine spam	<ul style="list-style-type: none"> ○ Spamdexing ○ Web scraping ○ Scraper site ○ Link farm ○ Link building
Linking	<ul style="list-style-type: none"> ○ Backlink ○ Link building ○ Link exchange ○ Organic linking
People	<ul style="list-style-type: none"> ○ Danny Sullivan ○ Matt Cutts ○ Barry Schwartz

Other

- Geotargeting
- Human search engine
- Stop words
- Content farm

Authority control databases: **National** Image not found or type unknown **Edit this at Wikidata**

- Germany
- Poland

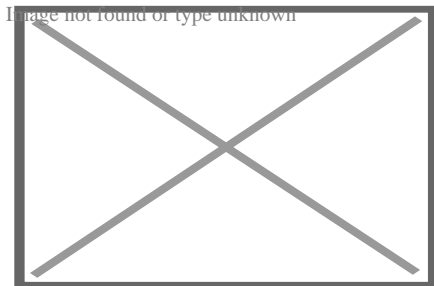
About Web design

Web design encompasses many different skills and disciplines in the production and maintenance of **websites**. The different areas of web design include web graphic design; **user interface design** (UI design); authoring, including standardised code and **proprietary software**; **user experience design** (UX design); and **search engine optimization**. Often many individuals will work in teams covering different aspects of the design process, although some designers will cover them all.^[1] The term "web design" is normally used to describe the design process relating to the front-end (client side) design of a website including writing **markup**. Web design partially overlaps **web engineering** in the broader scope of **web development**. Web designers are expected to have an awareness of **usability** and be up to date with **web accessibility** guidelines.

History

[[edit](#)]

See also: [History of the World Wide Web](#)



Web design books in a store

1988–2001

[edit]

Although web design has a fairly recent history, it can be linked to other areas such as graphic design, user experience, and multimedia arts, but is more aptly seen from a technological standpoint. It has become a large part of people's everyday lives. It is hard to imagine the Internet without animated graphics, different styles of **typography**, backgrounds, videos and music. The web was announced on August 6, 1991; in November 1992, **CERN** was the first website to go live on the World Wide Web. During this period, websites were structured by using the `<table>` tag which created numbers on the website. Eventually, web designers were able to find their way around it to create more structures and formats. In early history, the structure of the websites was fragile and hard to contain, so it became very difficult to use them. In November 1993, **ALIWEB** was the first ever search engine to be created (Archie Like Indexing for the WEB).[2]

The start of the web and web design

[edit]

In 1989, whilst working at **CERN** in Switzerland, British scientist **Tim Berners-Lee** proposed to create a global **hypertext** project, which later became known as the **World Wide Web**. From 1991 to 1993 the World Wide Web was born. **Text-only HTML** pages could be viewed using a simple line-mode **web browser**. [3] In 1993 **Marc Andreessen** and **Eric Bina**, created the **Mosaic browser**. At the time there were multiple browsers, however the majority of them were Unix-based and naturally text-heavy. There had been no integrated approach to **graphic design** elements such as **images** or **sounds**. The **Mosaic browser** broke this mould. [4] The **W3C** was created in October 1994 to "lead the World Wide Web to its full potential by developing common **protocols** that promote its evolution and ensure its **interoperability**." [5] This discouraged any one company from monopolizing a proprietary browser and **programming language**, which could have altered the effect of the World Wide Web as a whole. The W3C continues to set standards, which can today be seen with **JavaScript** and other languages. In 1994 Andreessen formed Mosaic Communications Corp. that later became known as **Netscape Communications**, the **Netscape 0.9 browser**. Netscape created its HTML tags without regard to the traditional standards process. For example, Netscape 1.1 included tags for changing background colours and formatting text with **tables** on web pages. From 1996 to 1999 the **browser wars** began, as **Microsoft** and **Netscape** fought for ultimate browser dominance. During this time there were many new technologies in the field, notably **Cascading Style Sheets**, **JavaScript**, and **Dynamic HTML**. On the whole, the browser competition did lead to many positive creations and helped web design evolve at a rapid pace. [6]

Evolution of web design

[[edit](#)]

In 1996, Microsoft released its first competitive browser, which was complete with its features and HTML tags. It was also the first browser to support style sheets, which at the time was seen as an obscure authoring technique and is today an important aspect of web design.[6] The [HTML markup](#) for [tables](#) was originally intended for displaying tabular data. However, designers quickly realized the potential of using HTML tables for creating complex, multi-column layouts that were otherwise not possible. At this time, as design and good aesthetics seemed to take precedence over good markup structure, little attention was paid to semantics and [web accessibility](#). HTML sites were limited in their design options, even more so with earlier versions of HTML. To create complex designs, many web designers had to use complicated table structures or even use blank [spacer .GIF](#) images to stop empty table cells from collapsing.[7] [CSS](#) was introduced in December 1996 by the [W3C](#) to support presentation and layout. This allowed [HTML](#) code to be semantic rather than both semantic and presentational and improved web accessibility, see [tableless web design](#).

In 1996, [Flash](#) (originally known as FutureSplash) was developed. At the time, the Flash content development tool was relatively simple compared to now, using basic layout and drawing tools, a limited precursor to [ActionScript](#), and a timeline, but it enabled web designers to go beyond the point of HTML, [animated GIFs](#) and [JavaScript](#). However, because Flash required a [plug-in](#), many web developers avoided using it for fear of limiting their market share due to lack of compatibility. Instead, designers reverted to [GIF](#) animations (if they did not forego using [motion graphics](#) altogether) and JavaScript for [widgets](#). But the benefits of Flash made it popular enough among specific target markets to eventually work its way to the vast majority of browsers, and powerful enough to be used to develop entire sites.[7]

End of the first browser wars

[[edit](#)]

Further information: [Browser wars § First Browser War \(1995–2001\)](#)

In 1998, Netscape released Netscape Communicator code under an [open-source licence](#), enabling thousands of developers to participate in improving the software. However, these developers decided to start a standard for the web from scratch, which guided the development of the open-source browser and soon expanded to a complete application platform.[6] The [Web Standards Project](#) was formed and promoted browser compliance with [HTML](#) and [CSS](#) standards. Programs like [Acid1](#), [Acid2](#), and [Acid3](#) were created in order to test browsers for compliance with web standards. In 2000, Internet Explorer was released for Mac, which was the first browser that fully supported HTML 4.01 and CSS 1. It was also the first browser to fully support the [PNG](#) image format.[6] By 2001, after a campaign by Microsoft to popularize Internet Explorer, Internet Explorer had reached 96% of [web browser usage share](#), which signified the

end of the first browser wars as Internet Explorer had no real competition.[8]

2001–2012

[edit]

Since the start of the 21st century, the web has become more and more integrated into people's lives. As this has happened the technology of the web has also moved on. There have also been significant changes in the way people use and access the web, and this has changed how sites are designed.

Since the end of the **browsers wars**[when?] new browsers have been released. Many of these are **open source**, meaning that they tend to have faster development and are more supportive of new standards. The new options are considered by many[weasel words] to be better than Microsoft's **Internet Explorer**.

The **W3C** has released new standards for HTML (**HTML5**) and CSS (**CSS3**), as well as new **JavaScript APIs**, each as a new but individual standard.[when?] While the term HTML5 is only used to refer to the new version of HTML and *some* of the JavaScript APIs, it has become common to use it to refer to the entire suite of new standards (HTML5, CSS3 and JavaScript).

2012 and later

[edit]

With the advancements in **3G** and **LTE** internet coverage, a significant portion of website traffic shifted to mobile devices. This shift influenced the web design industry, steering it towards a minimalist, lighter, and more simplistic style. The "mobile first" approach emerged as a result, emphasizing the creation of website designs that prioritize mobile-oriented layouts first, before adapting them to larger screen dimensions.

Tools and technologies

[edit]

Web designers use a variety of different tools depending on what part of the production process they are involved in. These tools are updated over time by newer standards and software but the principles behind them remain the same. Web designers use both **vector** and **raster** graphics editors to create web-formatted imagery or design prototypes. A website can be created using **WYSIWYG website builder** software or a **content management system**, or the individual web pages can be **hand-coded** in just the same manner as the first web pages were created. Other tools web designers might use include markup **validators**[9] and other testing tools for usability and accessibility to ensure their websites meet web accessibility guidelines.[10]

UX Design

[\[edit\]](#)

One popular tool in web design is UX Design, a type of art that designs products to perform an accurate user background. UX design is very deep. UX is more than the web, it is very independent, and its fundamentals can be applied to many other browsers or apps. Web design is mostly based on web-based things. UX can overlap both web design and design. UX design mostly focuses on products that are less web-based.[\[11\]](#)

Skills and techniques

[\[edit\]](#)

Marketing and communication design

[\[edit\]](#)

Marketing and communication design on a website may identify what works for its target market. This can be an age group or particular strand of culture; thus the designer may understand the trends of its audience. Designers may also understand the type of website they are designing, meaning, for example, that (B2B) **business-to-business** website design considerations might differ greatly from a consumer-targeted website such as a **retail** or entertainment website. Careful consideration might be made to ensure that the aesthetics or overall design of a site do not clash with the clarity and accuracy of the content or the ease of **web navigation**,[\[12\]](#) especially on a B2B website. Designers may also consider the reputation of the owner or business the site is representing to make sure they are portrayed favorably. Web designers normally oversee all the websites that are made on how they work or operate on things. They constantly are updating and changing everything on websites behind the scenes. All the elements they do are text, photos, graphics, and layout of the web. Before beginning work on a website, web designers normally set an appointment with their clients to discuss layout, colour, graphics, and design. Web designers spend the majority of their time designing websites and making sure the speed is right. Web designers typically engage in testing and working, marketing, and communicating with other designers about laying out the websites and finding the right elements for the websites.[\[13\]](#)

User experience design and interactive design

[\[edit\]](#)

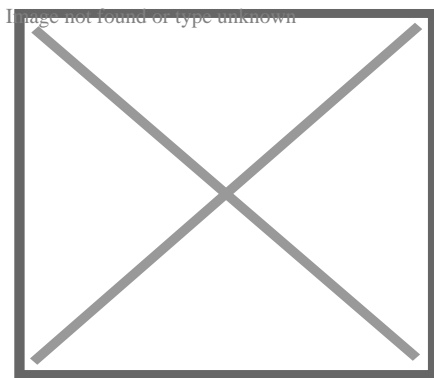
User understanding of the content of a website often depends on user understanding of how the website works. This is part of the **user experience design**. User experience is related to layout, clear instructions, and labeling on a website. How well a user understands how they can interact on a site may also depend on the **interactive design** of the site. If a user perceives the

usefulness of the website, they are more likely to continue using it. Users who are skilled and well versed in website use may find a more distinctive, yet less intuitive or less **user-friendly** website interface useful nonetheless. However, users with less experience are less likely to see the advantages or usefulness of a less intuitive website interface. This drives the trend for a more universal user experience and ease of access to accommodate as many users as possible regardless of user skill.^[14] Much of the user experience design and interactive design are considered in the **user interface design**.

Advanced interactive functions may require **plug-ins** if not advanced coding language skills. Choosing whether or not to use interactivity that requires plug-ins is a critical decision in user experience design. If the plug-in doesn't come pre-installed with most browsers, there's a risk that the user will have neither the know-how nor the patience to install a plug-in just to access the content. If the function requires advanced coding language skills, it may be too costly in either time or money to code compared to the amount of enhancement the function will add to the user experience. There's also a risk that advanced interactivity may be incompatible with older browsers or hardware configurations. Publishing a function that doesn't work reliably is potentially worse for the user experience than making no attempt. It depends on the target audience if it's likely to be needed or worth any risks.

Progressive enhancement

[\[edit\]](#)



The order of progressive enhancement

Main article: **Progressive enhancement**

Progressive enhancement is a strategy in web design that puts emphasis on **web content** first, allowing **everyone to access** the basic content and functionality of a web page, whilst **users** with additional browser features or faster Internet access receive the enhanced version instead.

In practice, this means serving content through **HTML** and applying styling and animation through **CSS** to the technically possible extent, then applying further enhancements through **JavaScript**. Pages' text is loaded immediately through the HTML source code rather than having to wait for JavaScript to initiate and load the content subsequently, which allows content to be readable with minimum loading time and bandwidth, and through **text-based browsers**, and

maximizes [backwards compatibility](#).^[15]

As an example, [MediaWiki](#)-based sites including Wikipedia use progressive enhancement, as they remain usable while JavaScript and even CSS is deactivated, as pages' content is included in the page's HTML source code, whereas counter-example [Everipedia](#) relies on JavaScript to load pages' content subsequently; a blank page appears with JavaScript deactivated.

Page layout

[\[edit\]](#)

Part of the user interface design is affected by the quality of the [page layout](#). For example, a designer may consider whether the site's page layout should remain consistent on different pages when designing the layout. Page pixel width may also be considered vital for aligning objects in the layout design. The most popular fixed-width websites generally have the same set width to match the current most popular browser window, at the current most popular screen resolution, on the current most popular monitor size. Most pages are also center-aligned for concerns of [aesthetics](#) on larger screens.

Fluid layouts increased in popularity around 2000 to allow the browser to make user-specific layout adjustments to fluid layouts based on the details of the reader's screen (window size, font size relative to window, etc.). They grew as an alternative to HTML-table-based layouts and [grid-based design](#) in both page layout design principles and in coding technique but were very slow to be adopted.^[note 1] This was due to considerations of [screen reading devices](#) and varying windows sizes which designers have no control over. Accordingly, a design may be broken down into units (sidebars, content blocks, [embedded advertising](#) areas, navigation areas) that are sent to the browser and which will be fitted into the display window by the browser, as best it can. Although such a display may often change the relative position of major content units, sidebars may be displaced below [body text](#) rather than to the side of it. This is a more flexible display than a hard-coded grid-based layout that doesn't fit the device window. In particular, the relative position of content blocks may change while leaving the content within the block unaffected. This also minimizes the user's need to horizontally scroll the page.

[Responsive web design](#) is a newer approach, based on CSS3, and a deeper level of per-device specification within the page's style sheet through an enhanced use of the CSS @media rule. In March 2018 Google announced they would be rolling out mobile-first indexing.^[16] Sites using responsive design are well placed to ensure they meet this new approach.

Typography

[\[edit\]](#)

Main article: [typography](#)

Web designers may choose to limit the variety of website typefaces to only a few which are of a similar style, instead of using a wide range of **typefaces** or **type styles**. Most browsers recognize a specific number of safe fonts, which designers mainly use in order to avoid complications.

Font downloading was later included in the CSS3 fonts module and has since been implemented in Safari 3.1, **Opera 10**, and **Mozilla Firefox 3.5**. This has subsequently increased interest in **web typography**, as well as the usage of font downloading.

Most site layouts incorporate negative space to break the text up into paragraphs and also avoid center-aligned text.^[17]

Motion graphics

[\[edit\]](#)

The page layout and user interface may also be affected by the use of motion graphics. The choice of whether or not to use motion graphics may depend on the target market for the website. Motion graphics may be expected or at least better received with an entertainment-oriented website. However, a website target audience with a more serious or formal interest (such as business, community, or government) might find animations unnecessary and distracting if only for entertainment or decoration purposes. This doesn't mean that more serious content couldn't be enhanced with animated or video presentations that is relevant to the content. In either case, **motion graphic design** may make the difference between more effective visuals or distracting visuals.

Motion graphics that are not initiated by the site visitor can produce accessibility issues. The World Wide Web consortium accessibility standards require that site visitors be able to disable the animations.^[18]

Quality of code

[\[edit\]](#)

Website designers may consider it to be good practice to conform to standards. This is usually done via a description specifying what the element is doing. Failure to conform to standards may not make a website unusable or error-prone, but standards can relate to the correct layout of pages for readability as well as making sure coded elements are closed appropriately. This includes errors in code, a more organized layout for code, and making sure IDs and classes are identified properly. Poorly coded pages are sometimes colloquially called **tag soup**. **Validating via W3C**^[9] can only be done when a correct DOCTYPE declaration is made, which is used to highlight errors in code. The system identifies the errors and areas that do not conform to web design standards. This information can then be corrected by the user.^[19]

Generated content

[\[edit\]](#)

There are two ways websites are generated: statically or dynamically.

Static websites

[\[edit\]](#)

Main article: [Static web page](#)

A static website stores a unique file for every page of a static website. Each time that page is requested, the same content is returned. This content is created once, during the design of the website. It is usually manually authored, although some sites use an automated creation process, similar to a dynamic website, whose results are stored long-term as completed pages. These automatically created static sites became more popular around 2015, with generators such as [Jekyll](#) and [Adobe Muse](#).^[20]

The benefits of a static website are that they were simpler to host, as their server only needed to serve static content, not execute server-side scripts. This required less server administration and had less chance of exposing security holes. They could also serve pages more quickly, on low-cost server hardware. This advantage became less important as cheap web hosting expanded to also offer dynamic features, and [virtual servers](#) offered high performance for short intervals at low cost.

Almost all websites have some static content, as supporting assets such as images and style sheets are usually static, even on a website with highly dynamic pages.

Dynamic websites

[\[edit\]](#)

Main article: [Dynamic web page](#)

Dynamic websites are generated on the fly and use server-side technology to generate web pages. They typically extract their content from one or more back-end databases: some are database queries across a relational database to query a catalog or to summarise numeric information, and others may use a [document database](#) such as [MongoDB](#) or [NoSQL](#) to store larger units of content, such as blog posts or wiki articles.

In the design process, dynamic pages are often mocked-up or [wireframed](#) using static pages. The skillset needed to develop dynamic web pages is much broader than for a static page, involving server-side and database coding as well as client-side interface design. Even medium-sized dynamic projects are thus almost always a team effort.

When dynamic web pages first developed, they were typically coded directly in languages such as [Perl](#), [PHP](#) or [ASP](#). Some of these, notably PHP and ASP, used a 'template' approach where a server-side page resembled the structure of the completed client-side page, and data was inserted into places defined by 'tags'. This was a quicker means of development than coding in a purely procedural coding language such as Perl.

Both of these approaches have now been supplanted for many websites by higher-level application-focused tools such as [content management systems](#). These build on top of general-purpose coding platforms and assume that a website exists to offer content according to one of several well-recognised models, such as a time-sequenced [blog](#), a thematic magazine or news site, a wiki, or a user forum. These tools make the implementation of such a site very easy, and a purely organizational and design-based task, without requiring any coding.

Editing the content itself (as well as the template page) can be done both by means of the site itself and with the use of third-party software. The ability to edit all pages is provided only to a specific category of users (for example, administrators, or registered users). In some cases, anonymous users are allowed to edit certain web content, which is less frequent (for example, on forums - adding messages). An example of a site with an anonymous change is [Wikipedia](#).

Homepage design

[\[edit\]](#)

Usability experts, including [Jakob Nielsen](#) and Kyle Soucy, have often emphasised homepage design for website success and asserted that the homepage is the most important page on a website.^[21] *Nielsen, Jakob; Tahir, Marie (October 2001), [Homepage Usability: 50 Websites Deconstructed](#), New Riders Publishing, ISBN 978-0-7357-1102-0*^{[22][23]} However practitioners into the 2000s were starting to find that a growing number of website traffic was bypassing the homepage, going directly to internal content pages through search engines, e-newsletters and RSS feeds.^[24] This led many practitioners to argue that homepages are less important than most people think.^{[25][26][27][28]} Jared Spool argued in 2007 that a site's homepage was actually the least important page on a website.^[29]

In 2012 and 2013, carousels (also called 'sliders' and 'rotating banners') have become an extremely popular design element on homepages, often used to showcase featured or recent content in a confined space.^[30] Many practitioners argue that carousels are an ineffective design element and hurt a website's search engine optimisation and usability.^{[30][31][32]}

Occupations

[\[edit\]](#)

There are two primary jobs involved in creating a website: the web designer and [web developer](#), who often work closely together on a website.^[33] The web designers are responsible for the visual aspect, which includes the layout, colouring, and typography of a web page. Web

designers will also have a working knowledge of **markup languages** such as HTML and CSS, although the extent of their knowledge will differ from one web designer to another. Particularly in smaller organizations, one person will need the necessary skills for designing and programming the full web page, while larger organizations may have a web designer responsible for the visual aspect alone.

Further jobs which may become involved in the creation of a website include:

- **Graphic designers** to create visuals for the site such as logos, layouts, and buttons
- Internet marketing specialists to help maintain web presence through strategic solutions on targeting viewers to the site, by using marketing and promotional techniques on the internet
- SEO writers to research and recommend the correct words to be incorporated into a particular website and make the website more accessible and found on numerous search engines
- Internet copywriter to create the written content of the page to appeal to the targeted viewers of the site^[1]
- User experience **(UX) designer** incorporates aspects of user-focused design considerations which include information architecture, user-centred design, user testing, interaction design, and occasionally visual design.

Artificial intelligence and web design

^[edit]

Chat GPT and other AI models are being used to write and code websites making it faster and easier to create websites. There are still discussions about the ethical implications on using artificial intelligence for design as the world becomes more familiar with using AI for time-consuming tasks used in design processes.^[34]

See also

^[edit]

- **icon** **Internet portal** Image not found or type not known

- Aesthetics
- Color theory
- Composition (visual arts)
- Cross-browser
- Design education
- Drawing
- Dark pattern
- European Design Awards
- First Things First 2000 manifesto
- Graphic art software
- Graphic design occupations
- Graphics
- Information graphics
- List of graphic design institutions
- List of notable graphic designers
- Logotype
- Outline of web design and web development
- Progressive Enhancement
- Style guide
- Web 2.0
- Web colors
- Web safe fonts
- Web usability
- Web application framework
- Website builder
- Website wireframe

Related disciplines

[[edit](#)]

- Communication design
- Copywriting
- Desktop publishing
- Digital illustration
- Graphic design
- Interaction design
- Information design
- Light-on-dark color scheme
- Marketing communications
- Motion graphic design
- New media
- Search engine optimization (SEO)
- Technical Writer
- Typography
- User experience
- User interface design
- Web development
- Web animations

Notes

[[edit](#)]

1. ^ [<table>-based markup and spacer .GIF images](#)

References

[[edit](#)]

1. ^ [a b](#) Lester, Georgina. *"Different jobs and responsibilities of various people involved in creating a website"*. Arts Wales UK. Retrieved 2012-03-17.
2. ^ [CPBI](#), Ryan Shelley. *"The History of Website Design: 30 Years of Building the Web [2022 Update]"*. www.smamarketing.net. Retrieved 2022-10-12.

3. ^ *"Longer Biography"*. Retrieved 2012-03-16.
4. ^ *"Mosaic Browser"* (PDF). Archived from *the original* (PDF) on 2013-09-02. Retrieved 2012-03-16.
5. ^ Zwicky, E.D; Cooper, S; Chapman, D.B. (2000). *Building Internet Firewalls*. United States: O'Reilly & Associates. p. 804. ISBN 1-56592-871-7.
6. ^ *a b c d* Niederst, Jennifer (2006). *Web Design In a Nutshell*. United States of America: O'Reilly Media. pp. 12–14. ISBN 0-596-00987-9.
7. ^ *a b* Chapman, Cameron, *The Evolution of Web Design*, Six Revisions, archived from *the original* on 30 October 2013
8. ^ *"AMO.NET America's Multimedia Online (Internet Explorer 6 PREVIEW)"*. amo.net. Retrieved 2020-05-27.
9. ^ *a b* *"W3C Markup Validation Service"*.
10. ^ W3C. *"Web Accessibility Initiative (WAI)"*.cite web: CS1 maint: numeric names: authors list (link)
11. ^ *"What is Web Design?"*. The Interaction Design Foundation. Retrieved 2022-10-12.
12. ^ THORLACIUS, LISBETH (2007). *"The Role of Aesthetics in Web Design"*. Nordicom Review. **28** (28): 63–76. doi:10.1515/nor-2017-0201. S2CID 146649056.
13. ^ *"What is a Web Designer? (2022 Guide)"*. BrainStation®. Retrieved 2022-10-28.
14. ^ Castañeda, J.A Francisco; Muñoz-Leiva, Teodoro Luque (2007). *"Web Acceptance Model (WAM): Moderating effects of user experience"*. Information & Management. **44** (4): 384–396. doi:10.1016/j.im.2007.02.003.
15. ^ *"Building a resilient frontend using progressive enhancement"*. GOV.UK. Retrieved 27 October 2021.
16. ^ *"Rolling out mobile-first indexing"*. Official Google Webmaster Central Blog. Retrieved 2018-06-09.
17. ^ Stone, John (2009-11-16). *"20 Do's and Don'ts of Effective Web Typography"*. Retrieved 2012-03-19.
18. ^ World Wide Web Consortium: Understanding Web Content Accessibility Guidelines 2.2.2: Pause, Stop, Hide
19. ^ W3C QA. *"My Web site is standard! And yours?"*. Retrieved 2012-03-21.cite web: CS1 maint: numeric names: authors list (link)
20. ^ Christensen, Mathias Biilmann (2015-11-16). *"Static Website Generators Reviewed: Jekyll, Middleman, Roots, Hugo"*. Smashing Magazine. Retrieved 2016-10-26.
21. ^ Soucy, Kyle, *Is Your Homepage Doing What It Should?*, Usable Interface, archived from *the original* on 8 June 2012
22. ^ Nielsen, Jakob (10 November 2003), *The Ten Most Violated Homepage Design Guidelines*, Nielsen Norman Group, archived from *the original* on 5 October 2013
23. ^ Knight, Kayla (20 August 2009), *Essential Tips for Designing an Effective Homepage*, Six Revisions, archived from *the original* on 21 August 2013
24. ^ Spool, Jared (29 September 2005), *Is Home Page Design Relevant Anymore?*, User Interface Engineering, archived from *the original* on 16 September 2013
25. ^ Chapman, Cameron (15 September 2010), *10 Usability Tips Based on Research Studies*, Six Revisions, archived from *the original* on 2 September 2013

26. ^ Góczy, Zoltán, *Myth #17: The homepage is your most important page*, archived from *the original* on 2 June 2013
27. ^ McGovern, Gerry (18 April 2010), *The decline of the homepage*, archived from *the original* on 24 May 2013
28. ^ Porter, Joshua (24 April 2006), *Prioritizing Design Time: A Long Tail Approach*, User Interface Engineering, archived from *the original* on 14 May 2013
29. ^ Spool, Jared (6 August 2007), *Usability Tools Podcast: Home Page Design*, archived from *the original* on 29 April 2013
30. ^ **a b** Messner, Katie (22 April 2013), *Image Carousels: Getting Control of the Merry-Go-Round*, Usability.gov, archived from *the original* on 10 October 2013
31. ^ Jones, Harrison (19 June 2013), *Homepage Sliders: Bad For SEO, Bad For Usability*, archived from *the original* on 22 November 2013
32. ^ Laja, Peep (8 June 2019), *Image Carousels and Sliders? Don't Use Them. (Here's why.)*, CXL, archived from *the original* on 10 December 2019
33. ^ Oleksy, Walter (2001). *Careers in Web Design*. New York: The Rosen Publishing Group, Inc. pp. 9–11. ISBN 978-0-8239-3191-0.
34. ^ Visser, Larno, et al. *ChatGPT for Web Design*. Create Amazing Websites. [First edition]., PACKT Publishing, 2023.

External links

[edit]

- W3C consortium for web standards

Web design at Wikipedia's **sister projects**:

-  **Media** from Commons
-  **Resources** from Wikiversity

- United States
- France
- BnF data
- Japan Wikidata
- Czech Republic
- Israel

Authority control databases: National

- v
- t
- e

Design

- Outline
- Designer

Disciplines

Communication design

- Advertising
- Book design
- Brand design
- Exhibit design
- Film title design
- Graphic design
 - Motion
 - Postage stamp design
 - Print design
- Illustration
- Information design
- Instructional design
- News design
- Photography
- Retail design
- Signage / Traffic sign design
- Typography / Type design
- Video design
- Visual merchandising

Environmental design

- Architecture
- Architectural lighting design
- Building design
 - Passive solar
- Ecological design
- Environmental impact design
- Garden design
 - Computer-aided
- Healthy community design
- Hotel design
- Interior architecture
- Interior design
 - EID
- Keyline design
- Landscape architecture
 - Sustainable
- Landscape design
- Spatial design
- Urban design

- Automotive design
- Automotive suspension design
- CMF design
- Corrugated box design

Approaches

- Active
- Activity-centered
- Adaptive web
- Affective
- Brainstorming
- By committee
- By contract
- C-K theory
- Closure
- Co-design
- Concept-oriented
- Configuration
- Contextual
- Continuous
- Cradle-to-cradle
- Creative problem-solving
- Creativity techniques
- Critical
 - Design fiction
- Defensive
- Design–bid–build
- Design–build
 - architect-led
- Diffuse
- Domain-driven
- Ecological design
- Energy neutral
- Engineering design process
 - Probabilistic design
- Ergonomic
- Error-tolerant
- Evidence-based
- Fault-tolerant
- Framework-oriented
- For assembly
- For behaviour change
- For manufacturability
- For Six Sigma
- For testing
- For the environment
- For X
- Functional
- Generative
- Geodesign
- HCD
- High-level

- **Tools**
- **Intellectual property**
- **Organizations**
- **Awards**

Tools

- AAD
- Architectural model
- Blueprint
- Comprehensive layout
- CAD
 - CAID
 - Virtual home design software
- CAutoD
- Design quality indicator
- Electronic design automation
- Flowchart
- Mockup
- Design specification
- Prototype
- Sketch
- Storyboard
- Technical drawing
- HTML editor
- Website wireframe

Intellectual property

- Clean-room design
- Community design
- Design around
- Design infringement
- Design patent
- Fashion design copyright
- *Geschmacksmuster*
- Industrial design rights
 - European Union

Organizations

- American Institute of Graphic Arts
- Chartered Society of Designers
- Design and Industries Association
- Design Council
- International Forum Design
- Design Research Society
- European Design Award

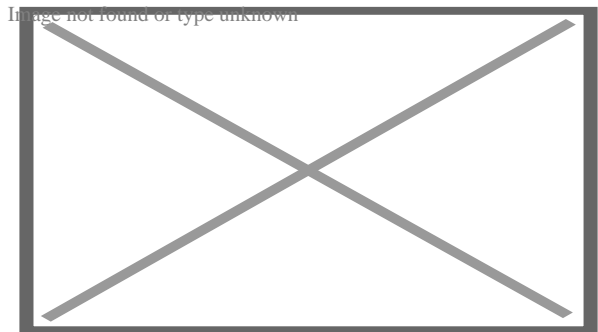
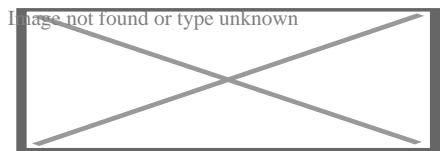
Related topics

- Agile
- Concept art
- Conceptual design
- Creative industries
- Cultural icon
- .design
- Dominant design
- Enterprise architecture
- Form factor
- Futures studies
- Indie design
- Innovation management
- Intelligent design
- Lean startup
- New product development
- OODA loop
- Philosophy of design
- Process simulation
- Reference design
- Slow design
- STEAM fields
- Unintelligent design
- Visualization
- Wicked problem
- Design attributes
 - brief
 - change
 - classic
 - competition
 - architectural
 - student
 - director
 - education
 - elements
 - engineer
 - firm
 - history
 - knowledge
 - language
 - life
 - load
 - museum
 - optimization
 - paradigm
 - principles

About Google Search

"Google.com" redirects here. For the company itself, see [Google](#).

Google Search



Google Search on desktop

Type of site	Web search engine
Available in	149 languages
Owner	Google
Revenue	Google Ads
URL	google.com <small>Image not found or type unknown</small>
IPv6 support	Yes[1]
Commercial	Yes
Registration	Optional
Launched	<ul style="list-style-type: none">1995; 30 years ago (first prototype)1997; 28 years ago (final launch)
Current status	Online
Written in	<ul style="list-style-type: none">PythonCC++[2]

[Edit this at Wikidata](#)

Google Search (also known simply as **Google** or **Google.com**) is a **search engine** operated by **Google**. It allows users to search for information on the **Web** by entering keywords or phrases. Google Search uses **algorithms** to analyze and rank **websites** based on their relevance to the search query. It is the most popular search engine worldwide.

Google Search is the **most-visited website in the world**. As of 2020, Google Search has a 92% share of the global search engine market.[3] Approximately 26.75% of Google's monthly global traffic comes from the **United States**, 4.44% from **India**, 4.4% from **Brazil**, 3.92% from the **United Kingdom** and 3.84% from **Japan** according to data provided by **Similarweb**. [4]

The order of search results returned by Google is based, in part, on a priority rank system called "**PageRank**". Google Search also provides many different options for customized searches, using symbols to include, exclude, specify or require certain search behavior, and offers specialized interactive experiences, such as flight status and package tracking, weather forecasts, currency, unit, and time conversions, word definitions, and more.

The main purpose of Google Search is to search for text in publicly accessible documents offered by web servers, as opposed to other data, such as **images** or **data contained in databases**. It was originally developed in 1996 by **Larry Page**, **Sergey Brin**, and **Scott Hassan**. [5] [6] [7] The search engine would also be set up in the garage of **Susan Wojcicki's Menlo Park** home. [8] In 2011, Google introduced "**Google Voice Search**" to search for spoken, rather than typed, words. [9] In 2012, Google introduced a **semantic search** feature named **Knowledge Graph**.

Analysis of the frequency of search terms may indicate economic, social and health trends. [10] Data about the frequency of use of search terms on Google can be **openly** inquired via **Google Trends** and **have been shown to correlate** with **flu** outbreaks and unemployment levels, and provide the information faster than traditional reporting methods and surveys. As of mid-2016, Google's search engine has begun to rely on **deep neural networks**. [11]

In August 2024, a US judge in Virginia ruled that Google's search engine held an **illegal monopoly** over Internet search. [12] [13] The court found that Google maintained its market dominance by paying large amounts to phone-makers and browser-developers to make Google its default search engine. [13]

Search indexing

[[edit](#)]

See also: **Googlebot**

Google **indexes** hundreds of **terabytes** of information from **web pages**. [14] For **websites** that are currently down or otherwise not available, Google provides links to **cached** versions of the site, formed by the search engine's latest indexing of that page. [15] Additionally, Google indexes some file types, being able to show users **PDFs**, **Word documents**, **Excel spreadsheets**, **PowerPoint presentations**, certain **Flash multimedia content**, and **plain text** files. [16] Users can

also activate "**SafeSearch**", a filtering technology aimed at preventing explicit and pornographic content from appearing in search results.[17]

Despite Google search's immense index, sources generally assume that Google is only indexing less than 5% of the total Internet, with the rest belonging to the **deep web**, inaccessible through its search tools.[14][18][19]

In 2012, Google changed its search indexing tools to demote sites that had been accused of **piracy**.^[20] In October 2016, Gary Illyes, a webmaster trends analyst with Google, announced that the search engine would be making a separate, primary web index dedicated for mobile devices, with a secondary, less up-to-date index for desktop use. The change was a response to the continued growth in mobile usage, and a push for web developers to adopt a mobile-friendly version of their websites.^{[21][22]} In December 2017, Google began rolling out the change, having already done so for multiple websites.^[23]

"Caffeine" search architecture upgrade

[**edit**]

In August 2009, Google invited web developers to test a new search architecture, codenamed "Caffeine", and give their feedback. The new architecture provided no visual differences in the user interface, but added significant speed improvements and a new "under-the-hood" indexing infrastructure. The move was interpreted in some quarters as a response to **Microsoft**'s recent release of an upgraded version of its own search service, renamed **Bing**, as well as the launch of **Wolfram Alpha**, a new search engine based on "computational knowledge".^{[24][25]} Google announced completion of "Caffeine" on June 8, 2010, claiming 50% fresher results due to continuous updating of its index.^[26]

With "Caffeine", Google moved its back-end indexing system away from **MapReduce** and onto **Bigtable**, the company's distributed database platform.^{[27][28]}

"Medic" search algorithm update

[**edit**]

In August 2018, **Danny Sullivan** from Google announced a broad core algorithm update. As per current analysis done by the industry leaders Search Engine Watch and Search Engine Land, the update was to drop down the medical and health-related websites that were not user friendly and were not providing good user experience. This is why the industry experts named it "Medic".^[29]

Google reserves very high standards for YMYL (Your Money or Your Life) pages. This is because misinformation can affect users financially, physically, or emotionally. Therefore, the update targeted particularly those YMYL pages that have low-quality content and misinformation. This resulted in the algorithm targeting health and medical-related websites

more than others. However, many other websites from other industries were also negatively affected.[30]

Search results

[edit]

Ranking of results

[edit]

By 2012, it handled more than 3.5 billion searches per day.[31] In 2013 the [European Commission](#) found that Google Search favored Google's own products, instead of the best result for consumers' needs.[32] In February 2015 Google announced a major change to its mobile search [algorithm](#) which would favor mobile friendly over other [websites](#). Nearly 60% of Google [searches](#) come from mobile phones. Google says it wants users to have access to premium quality [websites](#). Those websites which lack a mobile-friendly [interface](#) would be ranked lower and it is expected that this update will cause a shake-up of [ranks](#). Businesses who fail to update their [websites](#) accordingly could see a dip in their regular websites traffic.[33]

PageRank

[edit]

Main article: [PageRank](#)

Google's rise was largely due to a patented [algorithm](#) called PageRank which helps rank web pages that match a given search string.[34] When Google was a Stanford research project, it was nicknamed [BackRub](#) because the technology checks [backlinks](#) to determine a site's importance. Other keyword-based methods to rank search results, used by many search engines that were once more popular than Google, would check how often the search terms occurred in a page, or how strongly associated the search terms were within each resulting page. The PageRank algorithm instead analyzes human-generated [links](#) assuming that web pages linked from many important pages are also important. The algorithm computes a [recursive](#) score for pages, based on the weighted sum of other pages linking to them. PageRank is thought to [correlate](#) well with human concepts of importance. In addition to PageRank, Google, over the years, has added many other secret criteria for determining the ranking of resulting pages. This is reported to comprise over 250 different indicators,[35][36] the specifics of which are kept secret to avoid difficulties created by scammers and help Google maintain an edge over its competitors globally.

PageRank was influenced by a similar page-ranking and site-scoring algorithm earlier used for [RankDex](#), developed by [Robin Li](#) in 1996. Larry Page's patent for PageRank filed in 1998 includes a citation to Li's earlier patent. Li later went on to create the Chinese search engine [Baidu](#) in 2000.[37][38]

In a potential hint of Google's future direction of their Search algorithm, Google's then chief executive [Eric Schmidt](#), said in a 2007 interview with the *Financial Times*: "The goal is to enable Google users to be able to ask the question such as 'What shall I do tomorrow?' and 'What job shall I take?'".^[39] Schmidt reaffirmed this during a 2010 interview with *The Wall Street Journal*: "I actually think most people don't want Google to answer their questions, they want Google to tell them what they should be doing next."^[40]

Google optimization

[\[edit\]](#)

Main article: [Search engine optimization](#)

Because Google is the most popular [search engine](#), many [webmasters](#) attempt to influence their website's Google rankings. An industry of consultants has arisen to help websites increase their rankings on Google and other search engines. This field, called search engine optimization, attempts to discern patterns in search engine listings, and then develop a methodology for improving rankings to draw more searchers to their clients' sites. Search engine optimization encompasses both "on page" factors (like body copy, title elements, H1 heading elements and image [alt attribute](#) values) and Off Page Optimization factors (like [anchor text](#) and PageRank). The general idea is to affect Google's relevance algorithm by incorporating the keywords being targeted in various places "on page", in particular the title element and the body copy (note: the higher up in the page, presumably the better its keyword prominence and thus the ranking). Too many occurrences of the keyword, however, cause the page to look suspect to Google's spam checking algorithms. Google has published guidelines for website owners who would like to raise their rankings when using legitimate optimization consultants.^[41] It has been hypothesized, and, allegedly, is the opinion of the owner of one business about which there have been numerous complaints, that negative publicity, for example, numerous consumer complaints, may serve as well to elevate page rank on Google Search as favorable comments.^[42] The particular problem addressed in *The New York Times* article, which involved [DecorMyEyes](#), was addressed shortly thereafter by an undisclosed fix in the Google algorithm. According to Google, it was not the frequently published consumer complaints about DecorMyEyes which resulted in the high ranking but mentions on news websites of events which affected the firm such as legal actions against it. [Google Search Console](#) helps to check for websites that use duplicate or copyright content.^[43]

"Hummingbird" search algorithm upgrade

[\[edit\]](#)

Main article: [Google Hummingbird](#)

In 2013, Google significantly upgraded its search algorithm with "Hummingbird". Its name was derived from the speed and accuracy of the [hummingbird](#).^[44] The change was announced on September 26, 2013, having already been in use for a month.^[45] "Hummingbird" places greater emphasis on [natural language](#) queries, considering context and meaning over individual

keywords.[44] It also looks deeper at content on individual pages of a website, with improved ability to lead users directly to the most appropriate page rather than just a website's homepage.[46] The upgrade marked the most significant change to Google search in years, with more "human" search interactions[47] and a much heavier focus on conversation and meaning.[44] Thus, web developers and writers were encouraged to **optimize their sites** with natural writing rather than forced keywords, and make effective use of technical web development for on-site navigation.[48]

Search results quality

[[edit](#)]

In 2023, drawing on internal Google documents disclosed as part of the **United States v. Google LLC (2020)** antitrust case, technology reporters claimed that Google Search was "bloated and overmonetized"[49] and that the "semantic matching" of search queries put advertising profits before quality.[50] *Wired* withdrew Megan Gray's piece after Google complained about alleged inaccuracies, while the author reiterated that «As stated in court, "A goal of Project Mercury was to increase commercial queries"».[51]

In March 2024, Google announced a significant update to its core search algorithm and spam targeting, which is expected to wipe out 40 percent of all spam results.[52] On March 20th, it was confirmed that the roll out of the spam update was complete.[53]

Shopping search

[[edit](#)]

On September 10, 2024, the European-based **EU Court of Justice** found that Google held an illegal monopoly with the way the company showed favoritism to its shopping search, and could not avoid paying €2.4 billion.[54] The EU Court of Justice referred to Google's treatment of rival shopping searches as "discriminatory" and in violation of the **Digital Markets Act**. [54]

Interface

[[edit](#)]

Page layout

[[edit](#)]

At the top of the search page, the approximate result count and the response time two digits behind decimal is noted. Of search results, page titles and URLs, dates, and a preview text snippet for each result appears. Along with web search results, sections with images, news, and videos may appear.[55] The length of the previewed text snippet was experimented with in

2015 and 2017.^{[56][57]}

Universal search

[\[edit\]](#)

"Universal search" was launched by Google on May 16, 2007, as an idea that merged the results from different kinds of search types into one. Prior to Universal search, a standard Google search would consist of links only to websites. Universal search, however, incorporates a wide variety of sources, including websites, news, pictures, maps, blogs, videos, and more, all shown on the same search results page.^{[58][59]} Marissa Mayer, then-vice president of search products and user experience, described the goal of Universal search as "we're attempting to break down the walls that traditionally separated our various search properties and integrate the vast amounts of information available into one simple set of search results."^[60]

In June 2017, Google expanded its search results to cover available job listings. The data is aggregated from various major job boards and collected by analyzing company homepages. Initially only available in English, the feature aims to simplify finding jobs suitable for each user.^{[61][62]}

Rich snippets

[\[edit\]](#)

In May 2009, Google announced that they would be parsing website **microformats** to populate search result pages with "Rich snippets". Such snippets include additional details about results, such as displaying reviews for restaurants and social media accounts for individuals.^[63]

In May 2016, Google expanded on the "Rich snippets" format to offer "Rich cards", which, similarly to snippets, display more information about results, but shows them at the top of the mobile website in a swipeable carousel-like format.^[64] Originally limited to movie and recipe websites in the United States only, the feature expanded to all countries globally in 2017.^[65]

Knowledge Graph

[\[edit\]](#)

Main article: **Knowledge Graph**

The Knowledge Graph is a knowledge base used by Google to enhance its search engine's results with information gathered from a variety of sources.^[66] This information is presented to users in a box to the right of search results.^[67] Knowledge Graph boxes were added to Google's search engine in May 2012,^[66] starting in the United States, with international expansion by the end of the year.^[68] The information covered by the Knowledge Graph grew significantly after launch, tripling its original size within seven months,^[69] and being able to

answer "roughly one-third" of the 100 billion monthly searches Google processed in May 2016.[70] The information is often used as a spoken answer in [Google Assistant](#)[71] and [Google Home](#) searches.[72] The Knowledge Graph has been criticized for providing answers without source attribution.[70]

Google Knowledge Panel

[\[edit\]](#)

A Google Knowledge Panel[73] is a feature integrated into Google search engine result pages, designed to present a structured overview of entities such as individuals, organizations, locations, or objects directly within the search interface. This feature leverages data from Google's Knowledge Graph,[74] a database that organizes and interconnects information about entities, enhancing the retrieval and presentation of relevant content to users.

The content within a Knowledge Panel[75] is derived from various sources, including [Wikipedia](#) and other structured databases, ensuring that the information displayed is both accurate and contextually relevant. For instance, querying a well-known public figure may trigger a Knowledge Panel displaying essential details such as biographical information, birthdate, and links to social media profiles or official websites.

The primary objective of the Google Knowledge Panel is to provide users with immediate, factual answers, reducing the need for extensive navigation across multiple web pages.

Personal tab

[\[edit\]](#)

In May 2017, Google enabled a new "Personal" tab in Google Search, letting users search for content in their Google accounts' various services, including email messages from [Gmail](#) and photos from [Google Photos](#). [76][77]

Google Discover

[\[edit\]](#)

Google Discover, previously known as Google Feed, is a personalized stream of articles, videos, and other news-related content. The feed contains a "mix of cards" which show topics of interest based on users' interactions with Google, or topics they choose to follow directly.[78] Cards include, "links to news stories, YouTube videos, sports scores, recipes, and other content based on what [Google] determined you're most likely to be interested in at that particular moment." [78] Users can also tell Google they're not interested in certain topics to avoid seeing future updates.

Google Discover launched in December 2016^[79] and received a major update in July 2017.^[80] Another major update was released in September 2018, which renamed the app from Google Feed to Google Discover, updated the design, and adding more features.^[81]

Discover can be found on a tab in the Google app and by swiping left on the home screen of certain Android devices. As of 2019, Google will not allow **political campaigns** worldwide to target their advertisement to people to make them vote.^[82]

AI Overviews

[\[edit\]](#)

At the 2023 **Google I/O** event in May, Google unveiled Search Generative Experience (SGE), an experimental feature in Google Search available through **Google Labs** which produces **AI-generated** summaries in response to search prompts.^[83] This was part of Google's wider efforts to counter the unprecedented rise of generative AI technology, ushered by **OpenAI**'s launch of **ChatGPT**, which sent Google executives to a panic due to its potential threat to Google Search.^[84] Google added the ability to generate images in October.^[85] At I/O in 2024, the feature was upgraded and renamed AI Overviews.^[86]

"cheese not sticking to pizza"

Image not found or type unknown

Early AI Overview response to the problem of "cheese not sticking to pizza"

AI Overviews was rolled out to users in the United States in May 2024.^[86] The feature faced public criticism in the first weeks of its rollout after errors from the tool went viral online. These included results suggesting users add glue to pizza or eat rocks,^[87] or incorrectly claiming **Barack Obama** is Muslim.^[88] Google described these viral errors as "isolated examples", maintaining that most AI Overviews provide accurate information.^{[87][89]} Two weeks after the rollout of AI Overviews, Google made technical changes and scaled back the feature, pausing its use for some health-related queries and limiting its reliance on social media posts.^[90] *Scientific American* has criticised the system on environmental grounds, as such a search uses 30 times more energy than a conventional one.^[91] It has also been criticized for condensing information from various sources, making it less likely for people to view full articles and websites. When it was announced in May 2024, Danielle Coffey, CEO of the News/Media Alliance was quoted as saying "This will be catastrophic to our traffic, as marketed by Google to further satisfy user queries, leaving even less incentive to click through so that we can monetize

our content."^[92]

In August 2024, AI Overviews were rolled out in the UK, India, Japan, Indonesia, Mexico and Brazil, with local language support.^[93] On October 28, 2024, AI Overviews was rolled out to 100 more countries, including Australia and New Zealand.^[94]

AI Mode

^[edit]

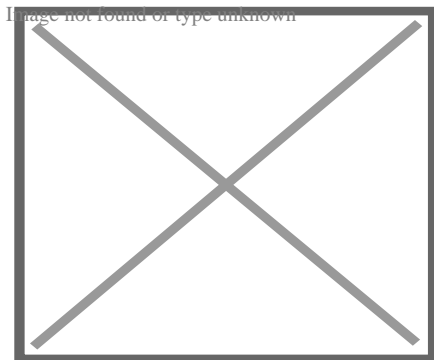
In March 2025, Google introduced an experimental "AI Mode" within its Search platform, enabling users to input complex, multi-part queries and receive comprehensive, AI-generated responses. This feature leverages Google's advanced Gemini 2.0 model, which enhances the system's reasoning capabilities and supports multimodal inputs, including text, images, and voice.

Initially, AI Mode is available to Google One AI Premium subscribers in the United States, who can access it through the Search Labs platform. This phased rollout allows Google to gather user feedback and refine the feature before a broader release.

The introduction of AI Mode reflects Google's ongoing efforts to integrate advanced AI technologies into its services, aiming to provide users with more intuitive and efficient search experiences.^{[95][96]}

Redesigns

^[edit]



Product Sans, Google's typeface since 2015

In late June 2011, Google introduced a new look to the Google homepage in order to boost the use of the Google+ social tools.^[97]

One of the major changes was replacing the classic navigation bar with a black one. Google's digital creative director Chris Wiggins explains: "We're working on a project to bring you a new and improved Google experience, and over the next few months, you'll continue to see more

updates to our look and feel."[98] The new navigation bar has been negatively received by a vocal minority.[99]

In November 2013, Google started testing yellow labels for advertisements displayed in search results, to improve user experience. The new labels, highlighted in yellow color, and aligned to the left of each sponsored link help users differentiate between organic and sponsored results.[100]

On December 15, 2016, Google rolled out a new desktop search interface that mimics their modular mobile user interface. The mobile design consists of a tabular design that highlights search features in boxes. and works by imitating the desktop Knowledge Graph real estate, which appears in the right-hand rail of the search engine result page, these featured elements frequently feature Twitter carousels, People Also Search For, and Top Stories (vertical and horizontal design) modules. The Local Pack and Answer Box were two of the original features of the Google SERP that were primarily showcased in this manner, but this new layout creates a previously unseen level of design consistency for Google results.[101]

Smartphone apps

[edit]

Google offers a "Google Search" mobile app for Android and iOS devices.[102] The mobile apps exclusively feature Google Discover and a "Collections" feature, in which the user can save for later perusal any type of search result like images, bookmarks or map locations into groups.[103] Android devices were introduced to a preview of the feed, perceived as related to Google Now, in December 2016,[104] while it was made official on both Android and iOS in July 2017.[105][106]

In April 2016, Google updated its Search app on Android to feature "Trends"; search queries gaining popularity appeared in the autocomplete box along with normal query autocompletion.[107] The update received significant backlash, due to encouraging search queries unrelated to users' interests or intentions, prompting the company to issue an update with an opt-out option.[108] In September 2017, the Google Search app on iOS was updated to feature the same functionality.[109]

In December 2017, Google released "Google Go", an app designed to enable use of Google Search on physically smaller and lower-spec devices in multiple languages. A Google blog post about designing "India-first" products and features explains that it is "tailor-made for the millions of people in [India and Indonesia] coming online for the first time".[110]

Performing a search

[edit]



A definition link is provided for many search terms.

Google Search consists of a series of **localized websites**. The largest of those, the **google.com site**, is the top most-visited website in the world.[111] Some of its features include a definition link for most searches including dictionary words, the number of results you got on your search, links to other searches (e.g. for words that Google believes to be misspelled, it provides a link to the search results using its proposed spelling), the ability to filter results to a date range[112] and many more.

Search syntax

[edit]

Google search accepts queries as normal text, as well as individual keywords.[113] It **automatically corrects** apparent misspellings by default (while offering to use the original spelling as a selectable alternative), and provides the same results regardless of capitalization.[113] For more customized results, one can use a wide variety of **operators**, including, but not limited to:[114][115]

- OR or | – Search for webpages containing one of two similar queries, such as *marathon OR race*
- AND – Search for webpages containing two similar queries, such as *marathon AND runner*
- - (minus sign) – Exclude a word or a phrase, so that *"apple -tree"* searches where word *"tree"* is not used
- "" – Force inclusion of a word or a phrase, such as *"tallest building"*
- * – Placeholder symbol allowing for any substitute words in the context of the query, such as *"largest * in the world"*
- .. – Search within a range of numbers, such as *"camera \$50..\$100"*
- site: – Search within a specific website, such as *"site:youtube.com"*
- define: – Search for definitions for a word or phrase, such as *"define:phrase"*
- stocks: – See the stock price of investments, such as *"stocks:googl"*
- related: – Find web pages related to specific **URL** addresses, such as *"related:www.wikipedia.org"*
- cache: – Highlights the search-words within the cached pages, so that *"cache:www.google.com xxx"* shows cached content with word *"xxx"* highlighted.
- () – Group operators and searches, such as *(marathon OR race) AND shoes*
- filetype: or ext: – Search for specific file types, such as *filetype:gif*
- before: – Search for before a specific date, such as *spacex before:2020-08-11*
- after: – Search for after a specific date, such as *iphone after:2007-06-29*
- @ – Search for a specific word on social media networks, such as *"@twitter"*

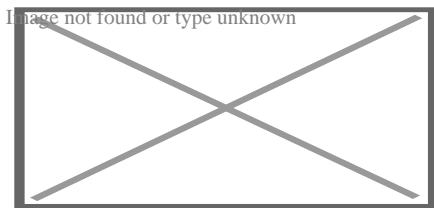
Google also offers a **Google Advanced Search** page with a web interface to access the advanced features without needing to remember the special operators.[116]

Query expansion

[[edit](#)]

Google applies [query expansion](#) to submitted search queries, using techniques to deliver results that it considers "smarter" than the query users actually submitted. This technique involves several steps, including:[\[117\]](#)

- Word [stemming](#) – Certain words can be reduced so other, similar terms, are also found in results, so that "*translator*" can also search for "*translation*"
- Acronyms – Searching for abbreviations can also return results about the name in its full length, so that "*NATO*" can show results for "*North Atlantic Treaty Organization*"
- Misspellings – Google will often suggest correct spellings for misspelled words
- Synonyms – In most cases where a word is incorrectly used in a phrase or sentence, Google search will show results based on the correct synonym
- Translations – The search engine can, in some instances, suggest results for specific words in a different language
- Ignoring words – In some search queries containing extraneous or insignificant words, Google search will simply drop those specific words from the query



A screenshot of suggestions by Google Search when "wikip" is typed

In 2008, Google started to give users [autocompleted search suggestions](#) in a list below the search bar while typing, originally with the approximate result count previewed for each listed search suggestion.[\[118\]](#)

"I'm Feeling Lucky"

[[edit](#)]

"I'm Feeling Lucky" redirects here. For the 2011 book by Douglas Edwards, see *[I'm Feeling Lucky \(book\)](#)*.

Google's homepage includes a button labeled "I'm Feeling Lucky". This feature originally allowed users to type in their search query, click the button and be taken directly to the first result, bypassing the search results page. Clicking it while leaving the search box empty opens Google's archive of [Doodles](#).[\[119\]](#) With the 2010 announcement of [Google Instant](#), an automatic feature that immediately displays relevant results as users are typing in their query, the "I'm Feeling Lucky" button disappears, requiring that users opt-out of Instant results through search settings to keep using the "I'm Feeling Lucky" functionality.[\[120\]](#) In 2012, "I'm Feeling Lucky"

was changed to serve as an advertisement for Google services; users hover their computer mouse over the button, it spins and shows an emotion ("I'm Feeling Puzzled" or "I'm Feeling Trendy", for instance), and, when clicked, takes users to a Google service related to that emotion.^[121]

Tom Chavez of "Rapt", a firm helping to determine a website's advertising worth, estimated in 2007 that Google lost \$110 million in revenue per year due to use of the button, which bypasses the advertisements found on the search results page.^[122]

Special interactive features

^[edit]

See also: [List of Google Easter eggs § Embedded tools](#)

Besides the main text-based search-engine function of Google search, it also offers multiple quick, interactive features. These include, but are not limited to:^{[123][124][125]}

- Calculator
- Time zone, currency, and unit conversions
- Word translations
- Flight status
- Local film showings
- Weather forecasts
- Population and unemployment rates
- Package tracking
- Word definitions
- Metronome
- Roll a die
- "Do a barrel roll" (search page spins)
- "Askew" (results show up sideways)

"OK Google" conversational search

^[edit]

See also: [Google Now](#) and [Google Assistant](#)

During Google's developer conference, [Google I/O](#), in May 2013, the company announced that users on [Google Chrome](#) and [ChromeOS](#) would be able to have the browser initiate an audio-based search by saying "OK Google", with no button presses required. After having the answer presented, users can follow up with additional, contextual questions; an example include initially asking "OK Google, will it be sunny in Santa Cruz this weekend?", hearing a spoken answer, and reply with "how far is it from here?"^{[126][127]} An update to the Chrome browser with [voice-search](#) functionality rolled out a week later, though it required a button press on a microphone icon rather than "OK Google" voice activation.^[128] Google released a browser extension for the

Chrome browser, named with a "beta" tag for unfinished development, shortly thereafter.[129] In May 2014, the company officially added "OK Google" into the browser itself;[130] they removed it in October 2015, citing low usage, though the microphone icon for activation remained available.[131] In May 2016, 20% of search queries on mobile devices were done through voice.[132]

Operations

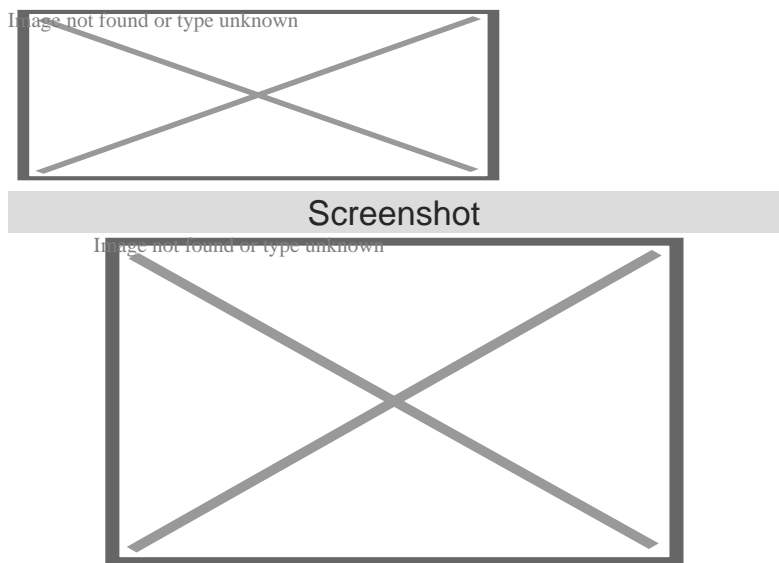
[edit]

Search products

[edit]

Main article: [List of Google products](#)
"Google Videos" redirects here. For other uses, see [Google Videos \(disambiguation\)](#).

Google Videos



Google Videos homepage as of 2016

Type of site	Video search engine
Available in	Multilingual
Owner	Google
URL	www.google.com/videohp
Commercial	Yes
Registration	Recommended
Launched	August 20, 2012; 12 years ago

In addition to its tool for searching [web pages](#), Google also provides services for searching images, [Usenet newsgroups](#), news websites, videos (**Google Videos**), [searching by locality](#), maps, and items for sale online. **Google Videos** allows searching the [World Wide Web](#) for video clips.[133] The service evolved from [Google Video](#), Google's discontinued video hosting service

that also allowed to search the web for video clips.[133]

In 2012, Google has indexed over 30 trillion web pages, and received 100 billion queries per month.[134] It also **caches** much of the content that it **indexes**. Google operates other tools and services including **Google News**, **Google Shopping**, **Google Maps**, **Google Custom Search**, **Google Earth**, **Google Docs**, **Picasa** (discontinued), **Panoramio** (discontinued), **YouTube**, **Google Translate**, **Google Blog Search** and **Google Desktop Search** (discontinued[135]).

There are also products available from Google that are not directly search-related. **Gmail**, for example, is a **webmail** application, but still includes search features; **Google Browser Sync** does not offer any search facilities, although it aims to organize your browsing time.

Energy consumption

[[edit](#)]

In 2009, Google claimed that a search query requires altogether about 1 **kJ** or 0.0003 **kW·h**,[136] which is enough to raise the temperature of one liter of water by 0.24 °C. According to green search engine **Ecosia**, the industry standard for search engines is estimated to be about 0.2 grams of CO₂ emission per search.[137] Google's 40,000 searches per second translate to 8 kg CO₂ per second or over 252 million kilos of CO₂ per year.[138]

Google Doodles

[[edit](#)]

Main article: **Google Doodle**

On certain occasions, the **logo** on Google's webpage will change to a special version, known as a "Google Doodle". This is a picture, drawing, animation, or interactive game that includes the logo. It is usually done for a special event or day although not all of them are well known.[139] Clicking on the Doodle links to a string of Google search results about the topic. The first was a reference to the **Burning Man Festival** in 1998,[140][141] and others have been produced for the birthdays of notable people like **Albert Einstein**, historical events like the interlocking **Lego** block's 50th anniversary and holidays like **Valentine's Day**. [142] Some Google Doodles have interactivity beyond a simple search, such as the famous "Google Pac-Man" version that appeared on May 21, 2010.

Criticism

[[edit](#)]

Privacy

[[edit](#)]

Main article: [Privacy concerns regarding Google](#)

Google has been criticized for placing long-term [cookies](#) on users' machines to store preferences, a tactic which also enables them to track a user's search terms and retain the data for more than a year.^[143]

Since 2012, Google Inc. has globally introduced encrypted connections for most of its clients, to bypass governative blockings of the commercial and IT services.^[144]

Complaints about indexing

[\[edit\]](#)

In 2003, *The New York Times* complained about Google's [indexing](#), claiming that Google's [caching](#) of content on its site infringed its copyright for the content.^[145] In both *Field v. Google* and *Parker v. Google*, the United States District Court of [Nevada](#) ruled in favor of Google.^{[146][147]}

Child sexual abuse

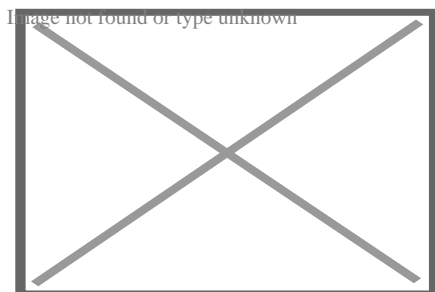
[\[edit\]](#)

[\[icon\]](#) This section **needs expansion**. You can help by [making an edit request](#)adding to it . (Image not found or type unknown *May 2024*)

A 2019 *New York Times* article on Google Search showed that images of [child sexual abuse](#) had been found on Google and that the company had been reluctant at times to remove them.^[148]

January 2009 malware bug

[\[edit\]](#)



A screenshot of the error of January 31, 2009

Google flags search results with the message "This site may harm your computer" if the site is known to install malicious software in the background or otherwise surreptitiously. For approximately 40 minutes on January 31, 2009, all search results were mistakenly classified as

malware and could therefore not be clicked; instead a warning message was displayed and the user was required to enter the requested URL manually. The bug was caused by human error.[149][150][151][152] The URL of "/" (which expands to all URLs) was mistakenly added to the malware patterns file.[150][151]

Possible misuse of search results

[edit]

In 2007, a group of researchers observed a tendency for users to rely exclusively on Google Search for finding information, writing that "With the Google interface the user gets the impression that the search results imply a kind of totality. ... In fact, one only sees a small part of what one could see if one also integrates other research tools." [153]

In 2011, Google Search query results have been shown by Internet activist Eli Pariser to be tailored to users, effectively isolating users in what he defined as a filter bubble. Pariser holds algorithms used in search engines such as Google Search responsible for catering "a personal ecosystem of information". [154] Although contrasting views have mitigated the potential threat of "informational dystopia" and questioned the scientific nature of Pariser's claims, [155] filter bubbles have been mentioned to account for the surprising results of the U.S. presidential election in 2016 alongside fake news and echo chambers, suggesting that Facebook and Google have designed personalized online realities in which "we only see and hear what we like". [156]

FTC fines

[edit]

In 2012, the US Federal Trade Commission fined Google US\$22.5 million for violating their agreement not to violate the privacy of users of Apple's Safari web browser. [157] The FTC was also continuing to investigate if Google's favoring of their own services in their search results violated antitrust regulations. [158]

Payments to Apple

[edit]

In a November 2023 disclosure, during the ongoing antitrust trial against Google, an economics professor at the University of Chicago revealed that Google pays Apple 36% of all search advertising revenue generated when users access Google through the Safari browser. This revelation reportedly caused Google's lead attorney to cringe visibly. [citation needed] The revenue generated from Safari users has been kept confidential, but the 36% figure suggests that it is likely in the tens of billions of dollars.

Both Apple and Google have argued that disclosing the specific terms of their search default agreement would harm their competitive positions. However, the court ruled that the information was relevant to the antitrust case and ordered its disclosure. This revelation has raised concerns about the dominance of Google in the search engine market and the potential anticompetitive effects of its agreements with Apple.[159]

Big data and human bias

[edit]

Google **search engine** robots are programmed to use **algorithms** that understand and predict human **behavior**. The book, *Race After Technology: Abolitionist Tools for the New Jim Code*[160] by **Ruha Benjamin** talks about human **bias** as a behavior that the Google search engine can recognize. In 2016, some users Google searched "three Black teenagers" and images of criminal **mugshots** of young African American teenagers came up. Then, the users searched "three White teenagers" and were presented with photos of smiling, happy teenagers. They also searched for "three Asian teenagers", and very revealing photos of Asian girls and women appeared. Benjamin concluded that these results reflect human **prejudice** and views on different **ethnic groups**. A group of analysts explained the concept of a **racist** computer program: "The idea here is that computers, unlike people, can't be racist but we're increasingly learning that they do in fact take after their makers ... Some experts believe that this problem might stem from the hidden biases in the massive piles of **data** that the algorithms process as they learn to recognize patterns ... reproducing our worst values".[160]

Monopoly ruling

[edit]

On August 5, 2024, Google lost a **lawsuit which started in 2020** in **D.C. Circuit Court**, with Judge **Amit Mehta** finding that the company had an illegal monopoly over Internet search.[161] This monopoly was held to be in violation of Section 2 of the **Sherman Act**. [162] Google has said it will appeal the ruling,[163] though they did propose to loosen search deals with Apple and others requiring them to set Google as the default search engine.[164]

Trademark

[edit]

Main article: **Google (verb)**

As people talk about "googling" rather than searching, the company has taken some steps to defend its trademark, in an effort to prevent it from becoming a **generic trademark**. [165][166] This has led to lawsuits, threats of lawsuits, and the use of euphemisms, such as calling Google Search a **famous web search engine**. [167]

Discontinued features

[\[edit\]](#)

Translate foreign pages

[\[edit\]](#)

Until May 2013, Google Search had offered a feature to [translate search queries into other languages](#). A Google spokesperson told *[Search Engine Land](#)* that "Removing features is always tough, but we do think very hard about each decision and its implications for our users. Unfortunately, this feature never saw much pick up".[\[168\]](#)

Instant search

[\[edit\]](#)

Instant search was announced in September 2010 as a feature that [displayed suggested results while the user typed in their search query](#), initially only in select countries or to registered users.[\[169\]](#) The primary advantage of the new system was its ability to save time, with [Marissa Mayer](#), then-vice president of search products and user experience, proclaiming that the feature would save 2–5 seconds per search, elaborating that "That may not seem like a lot at first, but it adds up. With Google Instant, we estimate that we'll save our users 11 hours with each passing second!"[\[170\]](#) Matt Van Wagner of *[Search Engine Land](#)* wrote that "Personally, I kind of like Google Instant and I think it represents a natural evolution in the way search works", and also praised Google's efforts in [public relations](#), writing that "With just a press conference and a few well-placed interviews, Google has parlayed this relatively minor speed improvement into an attention-grabbing front-page news story".[\[171\]](#) The upgrade also became notable for the company switching Google Search's underlying technology from [HTML](#) to [AJAX](#).[\[172\]](#)

Instant Search could be disabled via Google's "preferences" menu for those who didn't want its functionality.[\[173\]](#)

The publication *[2600: The Hacker Quarterly](#)* compiled a list of words that Google Instant did not show suggested results for, with a Google spokesperson giving the following statement to *[Mashable](#)*:[\[174\]](#)

There are several reasons you may not be seeing search queries for a particular topic. Among other things, we apply a narrow set of removal policies for pornography, violence, and hate speech. It's important to note that removing queries from Autocomplete is a hard problem, and not as simple as blacklisting particular terms and phrases.

In search, we get more than one billion searches each day. Because of this, we take an algorithmic approach to removals, and just like our search algorithms, these are imperfect. We will continue to work to improve our approach to removals in Autocomplete, and are listening carefully to feedback from our users.

Our algorithms look not only at specific words, but compound queries based on those words, and across all languages. So, for example, if there's a bad word in Russian, we may remove a compound word including the transliteration of the Russian word into English. We also look at the search results themselves for given queries. So, for example, if the results for a particular query seem pornographic, our algorithms may remove that query from Autocomplete, even if the query itself wouldn't otherwise violate our policies. This system is neither perfect nor instantaneous, and we will continue to work to make it better.

PC Magazine discussed the inconsistency in how some forms of the same topic are allowed; for instance, "lesbian" was blocked, while "gay" was not, and "cocaine" was blocked, while "crack" and "heroin" were not. The report further stated that seemingly normal words were also blocked due to pornographic innuendos, most notably "scat", likely due to having two completely separate contextual meanings, one for music and one for a sexual practice.[175]

On July 26, 2017, Google removed Instant results, due to a growing number of searches on mobile devices, where interaction with search, as well as screen sizes, differ significantly from a computer.[176][177]

Instant previews[edit]

"Instant previews" allowed previewing screenshots of search results' web pages without having to open them. The feature was introduced in November 2010 to the desktop website and removed in April 2013 citing low usage.[178][179]

Dedicated encrypted search page

[edit]

Various search engines provide encrypted Web search facilities. In May 2010 Google rolled out SSL-encrypted web search.[180] The encrypted search was accessed at encrypted.google.com[181] However, the web search is encrypted via Transport Layer Security (TLS) by default today, thus every search request should be automatically encrypted if TLS is supported by the web browser.[182] On its support website, Google announced that the address encrypted.google.com would be turned off April 30, 2018, stating that all Google products and most new browsers use HTTPS connections as the reason for the discontinuation.[183]

Real-Time Search

[[edit](#)]

Google Real-Time Search was a feature of Google Search in which search results also sometimes included [real-time](#) information from sources such as [Twitter](#), [Facebook](#), [blogs](#), and news websites.^[184] The feature was introduced on December 7, 2009,^[185] and went offline on July 2, 2011, after the deal with Twitter expired.^[186] Real-Time Search included [Facebook](#) status updates beginning on February 24, 2010.^[187] A feature similar to Real-Time Search was already available on [Microsoft's Bing search engine](#), which showed results from [Twitter](#) and Facebook.^[188] The interface for the engine showed a live, descending "river" of posts in the main region (which could be paused or resumed), while a [bar chart](#) metric of the frequency of posts containing a certain search term or hashtag was located on the right hand corner of the page above a list of most frequently reposted posts and outgoing links. [Hashtag](#) search links were also supported, as were "promoted" tweets hosted by Twitter (located persistently on top of the river) and thumbnails of retweeted image or video links.

In January 2011, geolocation links of posts were made available alongside results in Real-Time Search. In addition, posts containing syndicated or attached shortened links were made searchable by the *link:* query option. In July 2011, Real-Time Search became inaccessible, with the Real-Time link in the Google sidebar disappearing and a custom 404 error page generated by Google returned at its former URL. Google originally suggested that the interruption was temporary and related to the launch of [Google+](#);^[189] they subsequently announced that it was due to the expiry of a commercial arrangement with Twitter to provide access to tweets^[190]

See also

[[edit](#)]

 [Internet portal](#)
Image not found or type not known

- [List of search engines by popularity](#) – Software system for finding relevant information on the Web
- [Timeline of Google Search](#)
- [Censorship by Google § Google Search](#)
- [Google \(verb\)](#) – Transitive verb, to search using Google
- [Dragonfly \(search engine\)](#) – Prototype Internet search engine to comply with Chinese censorship requirements
- [Google bombing](#) – Practice that causes a webpage to have a high rank in Google
- [Google Panda](#) – Change to Google's search results ranking algorithm
- [Google Penguin](#) – Google search engine algorithm update
- [Googlehack](#) – Contest to find a Google Search query that returns a single result
- [Halalgoogling](#) – Islamic search engine blocking haram content
- [Prabhakar Raghavan](#) – American computer scientist

- Reunion (advertisement) – Google India advertisement for Google Search
- List of search engines
- Comparison of web search engines
- History of Google
- List of Google products

References

[edit]

1. ^ York, Dan (June 6, 2016). *"Google's IPv6 Stats Hit 12% on Fourth Anniversary of World IPv6 Launch"*. CircleID. Archived from the original on November 28, 2020. Retrieved August 5, 2019.
2. ^ *"The Anatomy of a Large-Scale Hypertextual Web Search Engine"*. Computer Science Department, Stanford University, Stanford, CA. Archived from the original on April 25, 2009. Retrieved January 27, 2009.
3. ^ *"Search Engine Market Share Worldwide | StatCounter Global Stats"*. StatCounter Global Stats. Archived from the original on December 10, 2020. Retrieved April 9, 2021.
4. ^ *"google.com"*. similarweb.com.
5. ^ Fisher, Adam (July 10, 2018). *"Brin, Page, and Mayer on the Accidental Birth of the Company that Changed Everything"*. Vanity Fair. Archived from the original on July 4, 2019. Retrieved August 23, 2019.
6. ^ McHugh, Josh (January 1, 2003). *"Google vs. Evil"*. Wired. Retrieved August 24, 2019.
7. ^ D'Onfro, Jillian (February 13, 2016). *"How a billionaire who wrote Google's original code created a robot revolution"*. Business Insider. Archived from the original on August 24, 2019. Retrieved August 24, 2019.
8. ^ Yoon, John; Isaac, Mike (August 10, 2024). *"Susan Wojcicki, Former Chief of YouTube, Dies at 56"*. New York Times. Retrieved August 10, 2024.
9. ^ Google (Tue June 14, 2011) *Official announcement* Archived July 31, 2020, at the Wayback Machine
10. ^ Hubbard, Douglas (2011). *Pulse: The New Science of Harnessing Internet Buzz to Track Threats and Opportunities*. John Wiley & Sons.
11. ^ *"Soon We Won't Program Computers. We'll Train Them Like Dogs"*. Wired. Retrieved May 30, 2018.
12. ^ Barakat, Matthew; Liedtke, Michale (August 5, 2024). *"Google illegally maintains monopoly over internet search, judge rules"*. Associated Press. Retrieved August 6, 2024.
13. ^ **a b** *"A court says Google is a monopolist. Now what?"*. The Economist. ISSN 0013-0613. Retrieved November 18, 2024.
14. ^ **a b** Dominguez, Trace (September 2, 2015). *"How Much of the Internet Is Hidden?"*. Seeker. Group Nine Media. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
15. ^ *"View web pages cached in Google Search Results"*. Google Search Help. Archived from the original on December 18, 2017. Retrieved December 9, 2017.

16. ^ Boswell, Wendy (November 1, 2017). ["How to Use Google to Find and Open Files Online". Lifewire. Dotdash. Archived from the original on December 10, 2017. Retrieved December 9, 2017.](#)
17. ^ ["Block explicit results on Google using SafeSearch". Google Search Help. Archived from the original on April 6, 2018. Retrieved December 9, 2017.](#)
18. ^ Rosen, JJ (May 3, 2014). ["The Internet you can't Google". The Tennessean. Gannett Company. Retrieved December 9, 2017.](#)
19. ^ Sherman, Chris; Price, Gary (May 22, 2008). "The Invisible Web: Uncovering Sources Search Engines Can't See". Illinois Digital Environment for Access to Learning and Scholarship. [University of Illinois at Urbana–Champaign. hdl:2142/8528.](#)
20. ^ Albanesius, Chloe (August 10, 2012). ["Google to Demote Sites With 'High Number' of Copyright Complaints". PC Magazine. Ziff Davis. Retrieved December 9, 2017.](#)
21. ^ Schwartz, Barry (October 13, 2016). ["Within months, Google to divide its index, giving mobile users better & fresher content". Search Engine Land. Archived from the original on December 9, 2017. Retrieved December 9, 2017.](#)
22. ^ Roberts, Hannah (October 27, 2016). ["Google is splitting its search index to target 'stripped down' mobile websites". Business Insider. Axel Springer SE. Archived from the original on December 9, 2017. Retrieved December 9, 2017.](#)
23. ^ Perez, Sarah (December 20, 2017). ["Google's mobile-first search index has rolled out to a handful of sites". TechCrunch. Oath Inc. Archived from the original on December 20, 2017. Retrieved December 21, 2017.](#)
24. ^ Barnett, Emma (August 11, 2009). ["Google reveals caffeine: a new faster search engine". The Daily Telegraph. Archived from the original on January 10, 2022. Retrieved December 9, 2017.](#)
25. ^ Fox, Vanessa (August 10, 2009). ["Google Caffeine: Google's New Search Engine Index". Search Engine Land. Archived from the original on December 10, 2017. Retrieved December 9, 2017.](#)
26. ^ Fox, Vanessa (June 8, 2010). ["Google's New Indexing Infrastructure "Caffeine" Now Live". Search Engine Land. Archived from the original on December 10, 2017. Retrieved December 9, 2017.](#)
27. ^ Metz, Cade (September 9, 2010). ["Google search index splits with MapReduce". The Register. Situation Publishing. Archived from the original on December 10, 2017. Retrieved December 9, 2017.](#)
28. ^ Metz, Cade (August 14, 2009). ["Google Caffeine: What it really is". The Register. Situation Publishing. Archived from the original on December 23, 2017. Retrieved December 9, 2017.](#)
29. ^ Schwartz, Barry (August 9, 2018). ["Google's Aug. 1 core algorithm update: Who did it impact, and how much". Search Engine Land. Archived from the original on August 23, 2018. Retrieved August 23, 2018.](#)
30. ^ ["Google Medic Update: Google's Core Search Update Had Big Impact On Health/Medical Sites". seroundtable.com. August 8, 2018. Archived from the original on March 21, 2019. Retrieved March 11, 2019.](#)
31. ^ ["Google Search Statistics - Internet Live Stats". www.internetlivestats.com. Archived from the original on February 4, 2015. Retrieved April 9, 2021.](#)

32. ^ Barker, Alex; McCarthy, Bede (April 9, 2013). "Google favours 'in-house' search results". *Financial Times*. Archived from the original on December 10, 2022. Retrieved January 26, 2014.
33. ^ D'Onfro, Jillian (April 19, 2015). "Google is making a giant change this week that could crush millions of small businesses". *Business Insider*. Archived from the original on October 7, 2016. Retrieved November 5, 2016.
34. ^ Brin, S.; Page, L. (1998). "The anatomy of a large-scale hypertextual Web search engine" (PDF). *Computer Networks and ISDN Systems*. **30** (1–7): 107–117. CiteSeerX 10.1.1.115.5930. doi:10.1016/S0169-7552(98)00110-X. ISSN 0169-7552. S2CID 7587743. Archived (PDF) from the original on November 8, 2006.
35. ^ "Corporate Information: Technology Overview". Archived from the original on February 10, 2010. Retrieved November 15, 2009.
36. ^ Levy, Steven (February 22, 2010). "Exclusive: How Google's Algorithm Rules the Web". *Wired*. Vol. 17, no. 12. Wired.com. Archived from the original on April 16, 2011.
37. ^ "About: RankDex" Archived January 20, 2012, at the Wayback Machine, RankDex
38. ^ "Method for node ranking in a linked database". Google Patents. Archived from the original on October 15, 2015. Retrieved October 19, 2015.
39. ^ "Google's goal: to organize your daily life" Archived October 19, 2011, at the Wayback Machine. *Financial Times*.
40. ^ "Google and the Search for the Future" Archived July 30, 2017, at the Wayback Machine . *The Wall Street Journal*.
41. ^ "Google Webmaster Guidelines". Archived from the original on January 9, 2009. Retrieved November 15, 2009.
42. ^ Segal, David (November 26, 2010). "A Bully Finds a Pulpit on the Web". *The New York Times*. Archived from the original on January 2, 2022. Retrieved November 27, 2010.
43. ^ "Blogspot.com". Googleblog.blogspot.com. Archived from the original on October 19, 2012. Retrieved August 4, 2012.
44. ^ a b c Elran, Asher (November 15, 2013). "What Google 'Hummingbird' Means for Your SEO Strategy". *Entrepreneur*. Archived from the original on June 24, 2022. Retrieved December 10, 2017.
45. ^ Sullivan, Danny (September 26, 2013). "FAQ: All About The New Google 'Hummingbird' Algorithm". *Search Engine Land*. Archived from the original on December 23, 2018. Retrieved December 10, 2017.
46. ^ Dodds, Don (December 16, 2013). "An SEO Guide to the Google Hummingbird Update". *HuffPost*. Oath Inc. Archived from the original on June 4, 2016. Retrieved December 10, 2017.
47. ^ Taylor, Richard (September 26, 2013). "Google unveils major upgrade to search algorithm". *BBC News*. BBC. Archived from the original on June 26, 2022. Retrieved December 10, 2017.
48. ^ Marentis, Chris (April 11, 2014). "A Complete Guide To The Essentials Of Post-Hummingbird SEO". *Search Engine Land*. Archived from the original on June 28, 2022. Retrieved December 10, 2017.
49. ^ Warzel, Charlie (September 22, 2023). "The Tragedy of Google Search". *The Atlantic*. Retrieved November 7, 2023.

50. ^ Megan Gray (October 2, 2023). *"How Google Alters Search Queries to Get at Your Wallet"*. Archived from [the original](#) on October 2, 2023. "This onscreen Google slide had to do with a "semantic matching" overhaul to its SERP algorithm. When you enter a query, you might expect a search engine to incorporate synonyms into the algorithm as well as text phrase pairings in natural language processing. But this overhaul went further, actually altering queries to generate more commercial results."
51. ^ Megan Gray (October 8, 2023). *"Google is controlling the trial w/ its secrecy designations, controlling our searches w/ its greed, and controlling Wired w/ its scare tactics. I wrote an op-ed re Google mucking around w/ organic search to make it more shopping-oriented to gin up ad \$. I stand by that. My ÆfÂ°Ã…Â,Ã,Â\$Ã,Âµ"*. Twitter. Archived from the original on November 7, 2023 – via Thread Reader App.
52. ^ Schwartz, Barry (March 5, 2024). *"Google releasing massive search quality enhancements in March 2024 core update and multiple spam updates"*. Search Engine Land.
53. ^ Schwartz, Barry (March 20, 2024). *"Google March 2024 spam update done rolling out"*. Search Engine Land.
54. ^ **a b** Hancock, Edith (September 10, 2024). *"Google loses EU court battle over €2.4B antitrust fine"*. Politico. Retrieved September 10, 2024.
55. ^ *"test"*. Google Search. Archived from [the original](#) on October 5, 2021. Retrieved October 5, 2021.
56. ^ Slegg, Jennifer (November 2, 2015). *"Google Testing Huge 7-Line Snippets in Search Results"*. The SEM Post. Archived from the original on October 17, 2021. Retrieved October 5, 2021.
57. ^ *"Google officially increases length of snippets in search results"*. Search Engine Land. December 1, 2017. Archived from the original on October 5, 2021. Retrieved October 5, 2021.
58. ^ Marshall, Matt (May 16, 2007). *"Google's move to "universal search"."* VentureBeat. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
59. ^ Sullivan, Danny (May 16, 2007). *"Google Launches "Universal Search" & Blended Results"*. Search Engine Land. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
60. ^ Mayer, Marissa (May 16, 2007). *"Universal search: The best answer is still the best answer"*. Official Google Blog. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
61. ^ Lardinois, Frederic (June 20, 2017). *"Google launches its AI-powered jobs search engine"*. TechCrunch. AOL. Archived from the original on June 21, 2017. Retrieved June 22, 2017.
62. ^ Gebhart, Andrew (June 20, 2017). *"Google for Jobs is ready to help your employment search"*. CNET. CBS Interactive. Archived from the original on June 20, 2017. Retrieved June 22, 2017.
63. ^ Fox, Vanessa (May 12, 2009). *"Google Search Now Supports Microformats and Adds "Rich Snippets" to Search Results"*. Search Engine Land. Archived from the original on December 9, 2017. Retrieved December 9, 2017.

64. ^ Schwartz, Barry (May 17, 2016). "Google launches rich cards for movie and recipe websites". *Search Engine Land*. Archived from the original on December 9, 2017. Retrieved December 9, 2017.
65. ^ Schwartz, Barry (March 29, 2017). "Google quietly expands rich cards worldwide". *Search Engine Land*. Archived from the original on December 9, 2017. Retrieved December 9, 2017.
66. ^ **a b** Singhal, Amit (May 16, 2012). "Introducing the Knowledge Graph: things, not strings". Official Google Blog. Archived from the original on December 10, 2017. Retrieved December 10, 2017.
67. ^ "Your business information in the Knowledge Panel". Google My Business Help. Archived from the original on April 20, 2017. Retrieved December 10, 2017.
68. ^ Newton, Casey (December 14, 2012). "How Google is taking the Knowledge Graph global". *CNET*. *CBS Interactive*. Archived from the original on December 10, 2017. Retrieved December 10, 2017.
69. ^ Newton, Casey (December 4, 2012). "Google's Knowledge Graph tripled in size in seven months". *CNET*. *CBS Interactive*. Archived from the original on August 29, 2018. Retrieved December 10, 2017.
70. ^ **a b** Dewey, Caitlin (May 11, 2016). "You probably haven't even noticed Google's sketchy quest to control the world's knowledge". *The Washington Post*. Archived from the original on September 25, 2017. Retrieved December 10, 2017.
71. ^ Lynley, Matthew (May 18, 2016). "Google unveils Google Assistant, a virtual assistant that's a big upgrade to Google Now". *TechCrunch*. Oath Inc. Archived from the original on January 26, 2021. Retrieved December 10, 2017.
72. ^ Bohn, Dieter (May 18, 2016). "Google Home: a speaker to finally take on the Amazon Echo". *The Verge*. *Vox Media*. Archived from the original on December 15, 2017. Retrieved December 10, 2017.
73. ^ Browne, Ryan (December 10, 2020). "Google launches knowledge panels in search results to tackle misinformation about Covid vaccines". *CNBC*. Retrieved August 28, 2024.
74. ^ Lardinois, Frederic (May 16, 2012). "Google Just Got A Whole Lot Smarter, Launches Its Knowledge Graph". *TechCrunch*. Retrieved August 28, 2024.
75. ^ Duffy, Scott (April 7, 2023). "How to Claim and Optimize Your Google Knowledge Panel". *Entrepreneur*. Retrieved August 28, 2024.
76. ^ Gartenberg, Chaim (May 26, 2017). "Google adds new Personal tab to search results to show Gmail and Photos content". *The Verge*. *Vox Media*. Archived from the original on May 26, 2017. Retrieved May 27, 2017.
77. ^ Westenberg, Jimmy (May 28, 2017). "New Personal tab in Google Search will show results from Photos, Gmail, and more". *Android Authority*. Archived from the original on December 15, 2017. Retrieved December 15, 2017.
78. ^ **a b** Bell, Karissa. "Google is using your entire search history to create a personalized news feed". *Mashable*. Archived from the original on May 23, 2018. Retrieved May 22, 2018.
79. ^ "Google is putting a news feed in Android's home screen". *The Verge*. Archived from the original on September 13, 2018. Retrieved May 22, 2018.

80. ^ Larson, Selena. *"The Google app feed is about to get more personal"*. CNNMoney. *Archived* from the original on May 23, 2018. Retrieved May 22, 2018.
81. ^ *"Introducing Google Discover"*. The Keyword Google. *Archived* from the original on July 16, 2021. Retrieved July 14, 2021.
82. ^ Lee, Dave (November 21, 2019). *"Google to restrict political adverts worldwide"*. *Archived* from the original on November 21, 2019. Retrieved November 21, 2019.
83. ^ Pierce, David (May 10, 2023). *"The AI takeover of Google Search starts now"*. *The Verge*. *Archived* from the original on May 10, 2023. Retrieved September 12, 2023.
84. ^ Levy, Steven (September 11, 2023). *"Sundar Pichai on Google;s AI, Microsoft's AI, OpenAI, and ... Did We Mention AI?"*. *Wired*. *Archived* from the original on September 11, 2023. Retrieved September 12, 2023.
85. ^ Peters, Jay (October 12, 2023). *"Google's AI-powered search experience can now generate images"*. *The Verge*. *Archived* from the original on October 12, 2023. Retrieved October 15, 2023.
86. ^ **a b** Pierce, David (May 14, 2024). *"Google is redesigning its search engine — and it's AI all the way down"*. *The Verge*. *Archived* from the original on May 14, 2024. Retrieved May 14, 2024.
87. ^ **a b** McMahon, Liv; Kleinman, Zoe (May 25, 2024). *"Glue pizza and eat rocks: Google AI search errors go viral"*. BBC.
88. ^ Field, Hayden (May 24, 2024). *"Google criticized as AI Overview makes obvious errors, such as saying former President Obama is Muslim"*. CNBC.
89. ^ Grant, Nico (May 24, 2024). *"Google's A.I. Search Errors Cause a Furor Online"*. New York Times.
90. ^ De Vynck, Gerrit (May 30, 2024). *"Google scales back AI search answers after it told users to eat glue"*. *The Washington Post*. *Archived* from the original on May 31, 2024. Retrieved May 31, 2024.
91. ^ Parshall, Allison. *"What Do Google's AI Answers Cost the Environment?"*. Scientific American.
92. ^ Darcy, Oliver (May 15, 2024). *"News publishers sound alarm on Google's new AI-infused search, warn of 'catastrophic' impacts | CNN Business"*. CNN. Retrieved November 3, 2024.
93. ^ Maura, Cecily (August 15, 2024). *"The new Google AI Overview layout is a small win for publishers"*. Mashable. Retrieved November 3, 2024.
94. ^ Yeo, Amanda (October 28, 2024). *"Google's AI Overview is rolling out worldwide"*. Mashable. Retrieved November 3, 2024.
95. ^ Malik, Aisha (March 5, 2025). *"Google Search's new 'AI Mode' lets users ask complex, multi-part questions"*. TechCrunch. Retrieved March 7, 2025.
96. ^ Langley, Hugh. *"Google's new AI Mode is a huge leap away from search as we know it"*. Business Insider. Retrieved March 7, 2025.
97. ^ Beato, Augusto. *"Google Redesign Backs Social Effort"*. Portland SEO. *Archived* from the original on December 1, 2017. Retrieved July 1, 2011.
98. ^ *"Google redesigns its homepage"*. Los Angeles Times. June 29, 2011. *Archived* from the original on January 21, 2013. Retrieved August 4, 2012.

99. ^ "Google support forum, one of many threads on being unable to switch off the black navigation bar". Archived from the original on December 24, 2011. Retrieved August 4, 2012.
100. ^ "Google ads: The wolf is out of the lamb's skin". www.techmw.com. Archived from the original on December 2, 2013. Retrieved December 2, 2013.
101. ^ Schwartz, Barry (December 6, 2016). "Google begins rolling out a new desktop search user interface". Search Engine Land. blogspot. Archived from the original on December 7, 2016. Retrieved December 6, 2016.
102. ^ "Google Search". Archived from the original on May 28, 2010. Retrieved May 30, 2018.
103. ^ Perez, Sarah (January 22, 2020). "Google's Collections feature now pushes people to save recipes & products, using AI". TechCrunch. Oath Inc. Archived from the original on July 14, 2021. Retrieved July 14, 2021.
104. ^ Bohn, Dieter (December 6, 2016). "Google is putting a news feed in Android's home screen". The Verge. Vox Media. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
105. ^ Newton, Casey (July 19, 2017). "Google introduces the feed, a personalized stream of news on iOS and Android". The Verge. Vox Media. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
106. ^ Matney, Lucas (July 19, 2017). "Google introduces the feed, a news stream of your evolving interests". TechCrunch. Oath Inc. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
107. ^ Schwartz, Barry (April 19, 2016). "Google Testing Trending In Search Auto-Complete". Search Engine Roundtable. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
108. ^ Schwartz, Barry (August 11, 2016). "You Can Now Opt Out Of Trending Searches In The Google Search App". Search Engine Roundtable. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
109. ^ Perez, Sarah (September 1, 2017). "Google's Search app on iOS gets a Twitter-like Trends feature, faster Instant Answers". TechCrunch. Oath Inc. Archived from the original on December 16, 2017. Retrieved December 15, 2017.
110. ^ "Google for India: Building India-first products and features". Google. December 5, 2017. Archived from the original on February 5, 2022. Retrieved February 5, 2022.
111. ^ "Top 500". Alexa Internet. Archived from the original on February 3, 2021. Retrieved November 8, 2020.
112. ^ Perry, Alex (April 10, 2019). "Google makes it way easier to search by date". Mashable. Archived from the original on March 2, 2022. Retrieved March 2, 2022.
113. ^ a b "How to search on Google". Google Search Help. Archived from the original on December 5, 2017. Retrieved December 9, 2017.
114. ^ "Refine web searches". Google Search Help. Archived from the original on October 11, 2017. Retrieved December 9, 2017.
115. ^ Boswell, Wendy (October 5, 2017). "Advanced Google Search Shortcuts". Lifewire. Dotdash. Archived from the original on January 7, 2018. Retrieved December 9, 2017.
116. ^ "Google Advanced Search". Google. Archived from the original on June 8, 2022. Retrieved June 9, 2022.

117. ^ Smarty, Ann (October 31, 2008). *"What is Google Query Expansion? Cases and Examples"*. Search Engine Journal. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
118. ^ Sullivan, Danny (August 25, 2008). *"Google.com Finally Gets Google Suggest Feature"*. Search Engine Land. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
119. ^ *"What Does The I'm Feeling Lucky Button On Google Search Do?"*. Fossbytes. April 12, 2016. Archived from the original on February 5, 2023. Retrieved March 2, 2022.
120. ^ Karch, Marziah (November 25, 2017). *"How to Use Google's 'I'm Feeling Lucky' Button"*. Lifewire. Dotdash. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
121. ^ Paul, Ian (August 24, 2012). *"Google Changes 'I'm Feeling Lucky' Button"*. PC World. International Data Group. Archived from the original on August 31, 2017. Retrieved December 9, 2017.
122. ^ Newman, Brendan (November 19, 2007). *"Are you feeling lucky? Google is"*. Marketplace. American Public Media. Archived from the original on October 20, 2017. Retrieved December 9, 2017.
123. ^ Reporters, Telegraph (August 17, 2017). *"15 fun Google Easter eggs"*. The Daily Telegraph. Archived from the original on January 10, 2022. Retrieved December 9, 2017.
124. ^ Klosowski, Thorin (September 6, 2012). *"20 Google Search Shortcuts to Hone Your Google-Fu"*. Lifehacker. Univision Communications. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
125. ^ Graziano, Dan (August 9, 2013). *"How to get the most out of Google search"*. CNET. CBS Interactive. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
126. ^ Warman, Matt (May 16, 2013). *"'OK Google' - 'conversational search' is coming soon"*. The Daily Telegraph. Archived from the original on January 10, 2022. Retrieved December 9, 2017.
127. ^ Robertson, Adi (May 15, 2013). *"Google adds button-free voice search in Chrome: just say 'OK Google'"*. The Verge. Vox Media. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
128. ^ Lee, Jessica (May 23, 2013). *"Google Talks Back: Conversational Search Available on New Version of Chrome"*. Search Engine Watch. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
129. ^ Albanesius, Chloe (November 27, 2013). *"'OK Google' Voice Search Lands on Chrome"*. PC Magazine. Ziff Davis. Retrieved December 9, 2017.
130. ^ Protalinski, Emil (May 20, 2014). *"Chrome 35 launches with 'OK Google' voice search, more control over touch input, new APIs and JavaScript features"*. The Next Web. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
131. ^ Protalinski, Emil (October 16, 2015). *"Google removes 'OK Google' voice search from Chrome"*. VentureBeat. Archived from the original on December 10, 2017. Retrieved December 9, 2017.
132. ^ Shahani, Aarti (May 18, 2016). *"With New Products, Google Flexes Muscles To Competitors, Regulators"*. NPR. Archived from the original on December 16, 2017.

Retrieved December 15, 2017.

133. ^ **a b** Sullivan, Danny (August 5, 2010). *"Let's Celebrate Google's Biggest Failures!"*. Search Engine Land. *Archived* from the original on April 5, 2019. Retrieved April 5, 2019.
134. ^ *"Google: 100 Billion Searches Per Month, Search To Integrate Gmail, Launching Enhanced Search App For iOS"*. Searchengineland.com. August 8, 2012. *Archived* from the original on March 3, 2013. Retrieved February 18, 2013.
135. ^ Alan Eustace (September 2, 2011). *"A fall spring-clean"*. *Archived* from the original on September 7, 2011. Retrieved October 1, 2020.
136. ^ *Blogspot.com Archived* July 29, 2009, at the *Wayback Machine*, Powering a Google search
137. ^ [1] *Archived* March 28, 2019, at the *Wayback Machine* How does Ecosia neutralize a search's CO2 emissions?
138. ^ [2] *Archived* February 4, 2015, at the *Wayback Machine* Google Search Statistics
139. ^ *About Google Doodles* . Google.com. Retrieved on November 29, 2013.
140. ^ Hwang, Dennis (June 8, 2004). *"Oodles of Doodles"*. *Google* (corporate blog). *Archived* from the original on December 2, 2010. Retrieved July 19, 2006.
141. ^ *"History of Doodles"*. Google, Inc. *Archived* from *the original* on February 5, 2014. Retrieved October 5, 2010.
142. ^ *"valentine07"*. Google. February 14, 2007. *Archived* from the original on March 7, 2007. Retrieved April 6, 2007.
143. ^ Caddy, Becca (March 20, 2017). *"Google tracks everything you do: here's how to delete it"*. *Wired*. *Archived* from the original on March 24, 2017. Retrieved March 20, 2017.
144. ^ Craig Timberg; Jla Lynn Yang (March 12, 2014). *"Google is encrypting search globally. That's bad for the NSA and China's censors"*. *The Washington Post*. *Archived* from the original on December 3, 2018. Retrieved July 7, 2018.
145. ^ Olsen, Stefanie (July 9, 2003). *"Google cache raises copyright concerns"*. *CNET*. *CBS Interactive*. *Archived* from *the original* on May 10, 2011. Retrieved June 13, 2010.
146. ^ *Field v. Google*, CV-S-04-0413-RCJ-LRL (Nevada District Court January 19, 2006), archived from *the original*.
147. ^ *Parker v. Google*, 04-CV-3918 (Eastern Pennsylvania District Court March 10, 2006), archived from the original on 2006-05-19.
148. ^ Keller, Michael H.; Dance, Gabriel J. X. (November 9, 2019). *"Child Abusers Run Rampant as Tech Companies Look the Other Way"*. *The New York Times*. ISSN 0362-4331. Retrieved October 9, 2023.
149. ^ Krebs, Brian (January 31, 2009). *"Google: This Internet May Harm Your Computer"*. *The Washington Post*. *Archived* from *the original* on November 30, 2011. Retrieved January 31, 2009.
150. ^ **a b** Mayer, Marissa (January 31, 2009). *"This site may harm your computer on every search result?!?!"*. *Official Google Blog*. *Archived* from the original on February 2, 2009. Retrieved January 31, 2009.
151. ^ **a b** Weinstein, Maxim (January 31, 2009). *"Google glitch causes confusion"*. *StopBadware*. *Archived* from *the original* on July 8, 2010. Retrieved May 10, 2010.
152. ^ Cooper, Russ (January 31, 2009). *"Serious problems with Google search"*. *Verizon Business Security Blog*. *Archived* from *the original* on July 17, 2011. Retrieved May 10,

2010.

153. ^ Maurer, H.; Balke, Tilo; Kappe, Frank; Kulathuramaiyer, Narayanan; Weber, Stefan; Zaka, Bilal (September 30, 2007). *"Report on dangers and opportunities posed by large search engines, particularly Google"* (PDF). *Graz University of Technology*. Archived from the original (PDF) on December 29, 2009. Retrieved June 13, 2017.
154. ^ Parramore, Lynn (October 10, 2010). *"The Filter Bubble"*. *The Atlantic*. Archived from the original on August 22, 2017. Retrieved April 20, 2011. "Since Dec. 4, 2009, Google has been personalized for everyone. So when I had two friends this spring Google 'BP,' one of them got a set of links that was about investment opportunities in BP. The other one got information about the oil spill"
155. ^ Weisberg, Jacob (June 10, 2011). *"Bubble Trouble: Is Web personalization turning us into solipsistic twits?"*. *Slate*. Archived from the original on June 12, 2011. Retrieved August 15, 2011.
156. ^ Mostafa M. El-Bermawy (November 18, 2016). *"Your Filter Bubble is Destroying Democracy"*. *Wired*. Retrieved March 3, 2017. "The global village that was once the internet ... digital islands of isolation that are drifting further apart each day ... your experience online grows increasingly personalized"
157. ^ *"Google fined over Safari privacy violation"* Archived August 11, 2012, at the *Wayback Machine*. *Al Jazeera*, August 10, 2012.
158. ^ Bailey, Brandon. *"Google's review by FTC nearing critical point"* Archived January 22, 2013, at the *Wayback Machine*. *Mercury News*, November 9, 2012.
159. ^ Nylen, Leah (November 13, 2023). *"Apple Gets 36% of Google Revenue in Search Deal, Expert Says"*. *Bloomberg News*. Retrieved November 14, 2023.
160. ^ **a b** Benjamin, Ruha (2019). *Race After Technology: Abolitionist Tools for the New Jim Code*. Cambridge, UK: Polity Press. pp. 94–95. ISBN 9781509526437.
161. ^ Peters, Jay (August 6, 2024). *"Now that Google is a monopolist, what's next? / Reaching a decision on what to do about Google Search could take a very long time"*. *The Verge*. Retrieved August 6, 2024.
162. ^ Mallin, Alexander (August 5, 2024). *"Google violated antitrust laws to maintain dominance over online search, judge says"*. *ABC News*. Retrieved August 6, 2024.
163. ^ Milmo, Dan; editor, Dan Milmo *Global technology* (November 21, 2024). *"Google must sell Chrome to end search monopoly, says US justice department"*. *The Guardian*. ISSN 0261-3077. Retrieved January 7, 2025. cite news: |last2= has generic name (help)
164. ^ Godoy, Jody (December 23, 2024). *"Google offers to loosen search deals in US antitrust case remedy"*. *Reuters*. Retrieved January 7, 2025.
165. ^ Duffy, Jonathan (June 20, 2003). *"Google calls in the 'language police'"*. *BBC News*. Archived from the original on June 29, 2012. Retrieved April 10, 2019.
166. ^ Ash, Karen Artz; Danow, Bret J. *"Google It": The Search Engine's Trademark May Be a Verb, But It's Not Generic*. *The National Law Review*. Archived from the original on April 10, 2019. Retrieved April 10, 2019.
167. ^ *"Feedback: Weight in dollars squared"*. *New Scientist*. June 5, 2013. Archived from the original on April 26, 2021. Retrieved November 8, 2020.
168. ^ Schwartz, Barry (May 20, 2013). *"Google Drops 'Translated Foreign Pages' Search Option Due To Lack Of Use"*. *Search Engine Land*. Archived from the original on October

- 17, 2017. Retrieved December 15, 2017.
169. ^ ["Google Instant Search: The Complete User's Guide"](#). Search Engine Land. September 8, 2010. [Archived](#) from the original on October 20, 2021. Retrieved October 5, 2021. "Google Instant only works for searchers in the US or who are logged in to a Google account in selected countries outside the US"
170. ^ [Mayer, Marissa](#) (September 8, 2010). ["Search: now faster than the speed of type"](#). Official Google Blog. [Archived](#) from the original on December 15, 2017. Retrieved December 15, 2017.
171. ^ [Wagner, Matt Van](#) (September 20, 2010). ["How Google Saved \\$100 Million By Launching Google Instant"](#). Search Engine Land. [Archived](#) from the original on October 19, 2017. Retrieved December 15, 2017.
172. ^ [Gomes, Ben](#) (September 9, 2010). ["Google Instant, behind the scenes"](#). Official Google Blog. [Archived](#) from the original on December 15, 2017. Retrieved December 15, 2017.
173. ^ [Pash, Adam](#) (September 8, 2010). ["How to Turn Off Google Instant Search"](#). Lifehacker. [Univision Communications](#). [Archived](#) from the original on December 16, 2017. Retrieved December 15, 2017.
174. ^ [Axon, Samuel](#) (September 28, 2010). ["Which Words Does Google Instant Blacklist?"](#). Mashable. [Ziff Davis](#). [Archived](#) from the original on December 15, 2017. Retrieved December 15, 2017.
175. ^ [Horn, Leslie](#) (September 29, 2010). ["Google Instant Blacklist: Which Words Are Blocked?"](#). PC Magazine. [Ziff Davis](#). Retrieved December 15, 2017.
176. ^ [Schwartz, Barry](#) (July 26, 2017). ["Google has dropped Google Instant Search"](#). Search Engine Land. [Archived](#) from the original on December 15, 2017. Retrieved December 15, 2017.
177. ^ [Statt, Nick](#) (July 26, 2017). ["Google will stop showing search results as you type because it makes no sense on mobile"](#). The Verge. Vox Media. [Archived](#) from the original on December 15, 2017. Retrieved December 15, 2017.
178. ^ [Singel, Ryan](#) (November 9, 2010). ["Google Gives Searchers 'Instant Previews' of Result Pages"](#). Wired. Retrieved October 5, 2021.
179. ^ ["Google Drops Instant Previews Over Low Usage"](#). seroundtable.com. April 25, 2013. [Archived](#) from the original on October 5, 2021. Retrieved October 5, 2021.
180. ^ ["SSL Search: Features – Web Search Help"](#). Web Search Help. May 2010. [Archived](#) from the original on May 24, 2010. Retrieved July 7, 2010.
181. ^ ["Encrypted.google.com"](#). [Archived](#) from the original on December 29, 2013. Retrieved August 4, 2012.
182. ^ ["Google Will Start Encrypting Your Searches"](#). Time. March 13, 2014. Retrieved February 6, 2017.
183. ^ ["Encrypted.google.com is going away"](#). Google Inc. [Archived](#) from the original on March 27, 2018. Retrieved May 18, 2018.
184. ^ ["Google launches Real-Time Search"](#) [Archived](#) January 26, 2021, at the [Wayback Machine](#). Mashable. Retrieved July 12, 2010.
185. ^ ["Relevance meets the real-time web"](#) [Archived](#) April 7, 2019, at the [Wayback Machine](#). Google. Retrieved July 12, 2010.

186. [^] *"As Deal With Twitter Expires, Google Realtime Search Goes Offline"*. Searchengineland.com. July 4, 2011. *Archived* from the original on November 11, 2013. Retrieved March 3, 2014.
187. [^] *"Google Real-Time Search Now Includes A Fraction Of Facebook Status Updates"* Archived October 31, 2019, at the Wayback Machine. TechCrunch. Retrieved July 12, 2010.
188. [^] *"Google's Real-Time Search Ready to Challenge Bing"* Archived July 6, 2012, at the Wayback Machine. PC World. Retrieved July 12, 2010.
189. [^] *Quotes delayed at least 15 min (December 31, 1999). "Business news: Financial, stock & investing news online - MSN Money"*. Money.msn.com. Archived from the original on April 2, 2011. Retrieved March 3, 2014.cite web: CS1 maint: numeric names: authors list (link)
190. [^] *"Google Realtime Search Goes Missing"*. Searchengineland.com. July 3, 2011. *Archived* from the original on February 14, 2014. Retrieved March 3, 2014.

Further reading

[[edit](#)]

- *Google Hacks* from O'Reilly is a book containing tips about using Google effectively. Now in its third edition (2006). ISBN 0-596-52706-3.
- *Google: The Missing Manual* by Sarah Milstein and Rael Dornfest (O'Reilly, 2004). ISBN 0-596-00613-6
- *How to Do Everything with Google* by Fritz Schneider, Nancy Blachman, and Eric Fredricksen (McGraw-Hill Osborne Media, 2003). ISBN 0-07-223174-2
- *Google Power* by Chris Sherman (McGraw-Hill Osborne Media, 2005). ISBN 0-07-225787-3
- Barroso, Luiz Andre; Dean, Jeffrey; Hölzle, Urs (2003). "Web Search for a Planet: The Google Cluster Architecture". *IEEE Micro*. **23** (2): 22–28. doi:10.1109/MM.2003.1196112. ISSN 0272-1732. S2CID 15886858.
- Broderick, Ryan (August 28, 2023). *"The end of the Googleverse"*. The Verge. Archived from the original on August 28, 2023. Retrieved August 30, 2023.
- Belanger, Ashley (October 27, 2023). *"Google loses fight to hide 2021 money pit: \$26B in default contracts"*. Ars Technica. Retrieved October 28, 2023.

External links

[[edit](#)]

- [Official website](#) Image not found or type unknown
- [Edit this at Wikidata](#)
- [Google Search home](#)
- [Google Trends home](#)

- **v**
- **t**
- **e**

Google

a subsidiary of **Alphabet**

Company

Divisions

- AI
- *Area 120*
- ATAP
- *Brain*
- China
- Cloud Platform
- Energy
- Google.org
 - Crisis Response
- *Health*
- Registry

Active

- Security Operations
- DeepMind
- Fitbit
- ITA Software
- Jigsaw
- Looker
- Mandiant
- Owlchemy Labs

Subsidiaries

- Actifio
- Adscape
- Akwan Information Technologies
- Anvato
- Apigee
- BandPage
- Bitium
- BufferBox
- Crashlytics
- Dodgeball
- DoubleClick
- Dropcam
- Endoxon
- Flutter
- Global IP Solutions
- Green Throttle Games
- GreenBorder
- Gridcentric
- ImageAmerica
- Imperium
- Invite Media
- Keltix

Defunct

Development

- Accelerated Linear Algebra
- AMP
- *Actions on Google*
- ALTS
- American Fuzzy Lop
- *Android Cloud to Device Messaging*
- Android Debug Bridge
- Android NDK
- Android Runtime
- Android SDK
- Android Studio
- Angular
- *AngularJS*
- Apache Beam
- APIs
- App Engine
- App Inventor
- *App Maker*
- App Runtime for Chrome
- *AppJet*
- Apps Script
- AppSheet
- ARCore
- A–C**
 - *Base*
 - Bazel
 - BeyondCorp
 - Bigtable
 - BigQuery
 - Bionic
 - Blockly
 - *Borg*
 - *Caja*
 - Cameyo
 - Chart API
 - Charts
 - *Chrome Frame*
 - Chromium
 - Blink
 - Closure Tools
 - *Cloud Connect*
 - Cloud Dataflow
 - Cloud Datastore
 - *Cloud Messaging*
 - Cloud Shell

Software

- *Aardvark*
- *Account*
 - *Dashboard*
 - *Takeout*
- *Ad Manager*
- *AdMob*
- *Ads*
- *AdSense*
- *Affiliate Network*
- A** ○ *Alerts*
- *Allo*
- *Analytics*
- *Android Auto*
- *Android Beam*
- *Answers*
- *Apture*
- *Arts & Culture*
- *Assistant*
- *Attribution*
- *Authenticator*
- *BebaPay*
- *BeatThatQuote.com*
- *Blog Search*
- *Blogger*
- *Body*
- *Bookmarks*
- B** ○ *Books*
 - *Ngram Viewer*
- *Browser Sync*
- *Building Maker*
- *Bump*
- *BumpTop*
- *Buzz*
- *Calendar*
- *Cast*
- *Catalogs*
- *Chat*
- *Checkout*
- *Chrome*
- *Chrome Apps*
- *Chrome Experiments*
- *Chrome Remote Desktop*

Hardware

Smartphones

Pixel

- Pixel (2016)
- Pixel 2 (2017)
- Pixel 3 (2018)
- Pixel 3a (2019)
- Pixel 4 (2019)
- Pixel 4a (2020)
- Pixel 5 (2020)
- Pixel 5a (2021)
- Pixel 6 (2021)
- Pixel 6a (2022)
- Pixel 7 (2022)
- Pixel 7a (2023)
- Pixel Fold (2023)
- Pixel 8 (2023)
- Pixel 8a (2024)
- Pixel 9 (2024)
- Pixel 9 Pro Fold (2024)

Smartwatches

- Pixel Watch (2022)
- Pixel Watch 2 (2023)
- Pixel Watch 3 (2024)

Tablets

- Pixel C (2015)
- Pixel Slate (2018)
- Pixel Tablet (2023)

Laptops

- Chromebook Pixel (2013–2015)
- Pixelbook (2017)
- Pixelbook Go (2019)

Other

- Pixel Buds (2017–present)

Smartphones

- Nexus One (2010)
- Nexus S (2010)
- Galaxy Nexus (2011)
- Nexus 4 (2012)
- Nexus 5 (2013)
- Nexus 6 (2014)
- Nexus 5X (2015)

- **v**
- **t**
- **e**

Litigation

- | | |
|------------------------------|---|
| Advertising | <ul style="list-style-type: none"> ○ <i>Feldman v. Google, Inc.</i> (2007) ○ <i>Rescuecom Corp. v. Google Inc.</i> (2009) ○ <i>Goddard v. Google, Inc.</i> (2009) ○ <i>Rosetta Stone Ltd. v. Google, Inc.</i> (2012) ○ <i>Google, Inc. v. American Blind & Wallpaper Factory, Inc.</i> (2017) ○ Jedi Blue |
| Antitrust | <ul style="list-style-type: none"> ○ European Union (2010–present) ○ <i>United States v. Adobe Systems, Inc., Apple Inc., Google Inc., Intel Corporation, Intuit, Inc., and Pixar</i> (2011) ○ <i>Umar Javeed, Sukarma Thapar, Aaqib Javeed vs. Google LLC and Ors.</i> (2019) ○ <i>United States v. Google LLC</i> (2020) ○ <i>United States v. Google LLC</i> (2023) |
| Intellectual property | <ul style="list-style-type: none"> ○ <i>Perfect 10, Inc. v. Amazon.com, Inc.</i> (2007) ○ <i>Viacom International Inc. v. YouTube, Inc.</i> (2010) ○ <i>Lenz v. Universal Music Corp.</i> (2015) ○ <i>Authors Guild, Inc. v. Google, Inc.</i> (2015) ○ <i>Field v. Google, Inc.</i> (2016) ○ <i>Google LLC v. Oracle America, Inc.</i> (2021) ○ Smartphone patent wars |
| Privacy | <ul style="list-style-type: none"> ○ <i>Rocky Mountain Bank v. Google, Inc.</i> (2009) ○ <i>Hibnick v. Google, Inc.</i> (2010) ○ <i>United States v. Google Inc.</i> (2012) ○ Judgement of the German Federal Court of Justice on Google's autocomplete function (2013) ○ <i>Joffe v. Google, Inc.</i> (2013) ○ <i>Mosley v SARL Google</i> (2013) ○ <i>Google Spain v AEPD and Mario Costeja González</i> (2014) ○ <i>Frank v. Gaos</i> (2019) |
| Other | <ul style="list-style-type: none"> ○ <i>Garcia v. Google, Inc.</i> (2015) ○ <i>Google LLC v Defteros</i> (2020) ○ <i>Epic Games v. Google</i> (2021) ○ <i>Gonzalez v. Google LLC</i> (2022) |

Related

- Beauty YouTuber
- BookTube
- BreadTube
- "Don't be evil"
- Gayglers
- *Google* as a verb
- Google bombing
 - 2004 U.S. presidential election
- Google effect
- Googlefight
- Google hacking
- Googleshare
- Google tax
- Googlewhack
- Googlization
- Illegal flower tribute
- Objectives and key results
- Rooting
- Search engine manipulation effect
- Side project time
- Sitelink
- Site reliability engineering
- StudyTube
- VTuber
- YouTube Poop
- YouTuber
 - list

Concepts

Android

- Booting process
- Custom distributions
- Features
- Recovery mode
- Software development

Street View coverage

- Africa
- Antarctica
- Asia
 - Israel
- Europe
- North America
 - Canada
 - United States
- Oceania

Italics denote discontinued products.

-  **Category**
-  **Outline**

- **v**
- **t**
- **e**

Alphabet Inc.

	<ul style="list-style-type: none"> ○ Access <ul style="list-style-type: none"> ○ Google Fiber ○ Calico ○ CapitalG ○ Google <ul style="list-style-type: none"> ○ DeepMind <ul style="list-style-type: none"> ○ AlphaFold ○ AlphaGo <ul style="list-style-type: none"> ○ vs. Fan Hui ○ vs. Ke Jie ○ vs. Lee Sedol <ul style="list-style-type: none"> ○ film ○ Future of Go Summit ○ AlphaGo Zero ○ AlphaStar ○ AlphaZero ○ Master ○ MuZero ○ WaveNet
Current	
Subsidiaries	<ul style="list-style-type: none"> ○ DoubleClick ○ Firebase ○ Fitbit ○ Tenor ○ Waze ○ YouTube ○ GV ○ Isomorphic Labs ○ Verily <ul style="list-style-type: none"> ○ Baseline Study ○ X Development ○ Waymo ○ Wing
Former	<ul style="list-style-type: none"> ○ Boston Dynamics ○ Chronicle Security ○ Jigsaw ○ Loon ○ Makani ○ Meka Robotics ○ Nest Labs ○ Sidewalk Labs <ul style="list-style-type: none"> ○ Toronto ○ Vicarious

People	Executives	Current	<ul style="list-style-type: none">○ Sundar Pichai (CEO)○ Ruth Porat (president and CIO)○ Anat Ashkenazi (CFO)
		Former	<ul style="list-style-type: none">○ Larry Page (CEO)○ Sergey Brin (President)○ David Drummond (CLO)
	Board of directors	Current	<ul style="list-style-type: none">○ Frances Arnold○ Sergey Brin○ R. Martin Chavez○ John Doerr○ John L. Hennessy○ Ann Mather○ Larry Page○ Sundar Pichai○ Ram Shriram○ Roger W. Ferguson Jr.
		Former	<ul style="list-style-type: none">○ Diane Greene○ Alan Mulally○ Eric Schmidt
		Others	<ul style="list-style-type: none">○ Andrew Conrad○ Tony Fadell○ Arthur D. Levinson○ David Krane○ Astro Teller

-  Category
-  Companies portal
-  Internet portal

- **v**
- **t**
- **e**

Android

- Android Go
 - Comparison of products



Releases

- Cupcake (1.5)
- Donut (1.6)
- Eclair (2.0–2.1)
- Froyo (2.2)
- Gingerbread (2.3)
- Honeycomb (3.x)
- Ice Cream Sandwich (4.0)
- Jelly Bean (4.1–4.3)
- KitKat (4.4)
- Lollipop (5.x)
- Marshmallow (6.0)
- Nougat (7.x)
- Oreo (8.x)
- Pie (9)
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Derivatives

- Android Automotive
- Android Things
- TV
 - devices
- Android XR
- Wear OS

Devices

Pixel

- C
- Pixel & Pixel XL
- 2 & 2 XL
- 3 & 3 XL
 - 3a & 3a XL
- 4 & 4 XL
 - 4a & 4a (5G)
- 5
 - 5a
- 6 & 6 Pro
 - 6a
- 7 & 7 Pro
 - 7a
- Fold
- Tablet
- 8 & 8 Pro
 - 8a
- 9, 9 Pro & 9 Pro XL
 - 9 Pro Fold

Nexus

- One
- S
- Galaxy Nexus
- 4
- 10
- Q
- 5
 - 5X
- 6
 - 6P
- 7
 - 2012
 - 2013
- 9
- Player

Play edition

- HTC One (M7)
- HTC One (M8)
- LG G Pad 8.3
- Moto G
- Samsung Galaxy S4
- Sony Xperia Z Ultra

- Android One
- other smartphones

Custom distributions

- AliOS
- Android-x86
 - Remix OS
- AOKP
- Baidu Yi
- Barnes & Noble Nook
- CalyxOS
- ColorOS
 - realme UI
- CopperheadOS
- EMUI
 - Magic UI
- Fire OS
- Flyme OS
- GrapheneOS
- Xiaomi HyperOS
 - MIUI
 - MIUI for Poco
- LeWa OS
- LineageOS
 - /e/
 - CrDroid
 - CyanogenMod
 - DivestOS
 - iodéOS
 - Kali NetHunter
- LiteOS
- Meta Horizon OS
- MicroG
- Nokia X software platform
- OmniROM
- OPhone
- OxygenOS
- PixelExperience
- Pixel UI
- Replicant
- Resurrection Remix OS
- SlimRoms
- TCL UI
- Ubuntu for Android
- XobotOS
- ZUI

Booting and recovery	<ul style="list-style-type: none">○ Booting process○ Recovery mode<ul style="list-style-type: none">○ TWRP○ ClockworkMod○ Fastboot
APIs	<ul style="list-style-type: none">○ Google Maps○ Google Play Services<ul style="list-style-type: none">○ SafetyNet○ Google Search
Alternative UIs	<ul style="list-style-type: none">○ Asus ZenFone○ Cherry OS○ ColorOS○ EMUI○ Funtouch OS○ Flyme OS○ HiOS○ Hive UI (XOLO Hive)○ HTC Sense○ LG UX<ul style="list-style-type: none">○ Optimus UI○ Motoblur○ One UI○ Origin OS<ul style="list-style-type: none">○ Experience○ TouchWiz○ OxygenOS○ Pixel UI○ XOS○ Xperia UI
Rooting	<ul style="list-style-type: none">○ SuperSU○ Magisk○ Kingo Root
Lists	<ul style="list-style-type: none">○ Custom distributions○ Features○ Free and open-source applications○ Google apps○ Launchers

Related topics

- [Index of articles](#)
- [Androidland](#)
- [Chromecast](#)
- [Google](#)
- [Java vs. Android API](#)
- [Lawn statues](#)
- [BlueStacks](#)
- **Legal issues**
 - [Google v. Oracle](#)
 - [smartphone patent wars](#)

-  [Category:Android development](#)
-  [Category:Mobile telecommunications](#)
-  [Software portal](#)
-  [Telecommunication portal](#)

- **v**
- **t**
- **e**

[Web search engines](#)

Dedicated

Active

- AOL
- Ahmia
- Ask.com
- Baidu
- Bing
- Blackle
- Brave
- DuckDuckGo
- Ecosia
- Fireball
- Google
- Kiddle
- KidRex
- KidzSearch
- Lycos
- Mojeek
- Naver
- Parsijoo
- Perplexity AI
- Petal
- Seznam.cz
- Sogou
- Swisscows
- WebCrawler
- Yahoo!
- Yandex
- Youdao

Metasearch engines

- Dogpile
- Excite
- Info.com
- Kagi
- MetaCrawler
- MetaGer
- Mullvad Leta
- SearXNG
- Startpage
- Qwant

**Defunct
or
Inactive**

- [123people](#)
- [A9.com](#)
- [Aliweb](#)
- [AlltheWeb](#)
- [AltaVista](#)
- [Blekko](#)
- [Boogami](#)
- [Cuil](#)
- [Empas](#)
- [Forestle](#)
- [GenieKnows](#)
- [Gigablast](#)
- [Go.com](#)
- [HotBot](#)
- [Infoseek](#)
- [Inktomi](#)
- [JumpStation](#)
- [LeapFish](#)
- [Neeva](#)
- [Northern Light](#)
- [Pipilika](#)
- [Powerset](#)
- [Scroogle](#)
- [SearchMe](#)
- [Searx](#)
- [Soso](#)
- [Sputnik](#)
- [Teoma](#)
- [Viewzi](#)
- [Vivisimo](#)
- [Volunia](#)
- [W3Catalog](#)
- [Wikiseek](#)
- [Yebol](#)
- [Yippy](#)
- [Yooz](#)

- [Comparison](#)
- [Complete list](#)

Authority control databases Image not found or type unknown **Edit this at Wikidata**

International

- [VIAF](#)
- [FAST](#)

National

- [Germany](#)
- [United States](#)
- [France](#)
- [BnF data](#)
- [Czech Republic](#)
- [Norway](#)
- [Israel](#)

Check our other pages :

- [SEO agency in Sydney](#)
- [Sydney SEO consulting](#)
- [SEO agency Sydney](#)
- [search engine optimisation Sydney](#)
- [keyword research services](#)
- [SEO consultant Sydney](#)

Frequently Asked Questions

What is a content agency in Sydney?

A content agency in Sydney focuses on creating high-quality, SEO-optimized content that resonates with your target audience. Their services typically include blog writing, website copy, video production, and other forms of media designed to attract traffic and improve search rankings.

Why should I consider SEO packages in Australia?

SEO packages in Australia typically bundle essential optimization services such as keyword research, technical audits, content creation, and link building at a set price. They are designed to simplify the process, provide consistent results, and help businesses of all sizes improve their online visibility.

What is involved in SEO consulting?

SEO consulting involves analyzing a website's current performance, identifying areas for improvement, and recommending strategies to boost search rankings. Consultants provide insights on keyword selection, on-page and technical optimization, content development, and link-building tactics.

What are the benefits of working with an SEO consultant in Sydney?

An SEO consultant in Sydney can provide tailored advice and strategies that align with your business's goals and local market conditions. They bring expertise in keyword selection, content optimization, technical SEO, and performance monitoring, helping you achieve better search rankings and more organic traffic.

What role do SEO consultants play in a digital marketing strategy?

SEO consultants are responsible for improving your website's visibility and performance in search engines. By analyzing data, refining keyword strategies, and optimizing site elements, they enhance your overall digital marketing efforts, leading to more traffic, better user engagement, and higher conversions.

best SEO agency Sydney

SEO Sydney

Phone : 1300 684 339

City : Sydney

State : NSW

Zip : 2000

[Google Business Profile](#)

[Google Business Website](#)

Company Website : <https://sydney.website/seo-sydney/>

USEFUL LINKS

[SEO Website](#)

[SEO Services Sydney](#)

[Local SEO Sydney](#)

[SEO Ranking](#)

[SEO optimisation](#)

LATEST BLOGPOSTS

[SEO community](#)

[SEO Buzz](#)

[WordPress SEO](#)

[SEO Audit](#)

[Sitemap](#)

[Privacy Policy](#)

[About Us](#)

[SEO Castle Hill](#) | [SEO Fairfield](#) | [SEO Hornsby](#) | [SEO Liverpool](#) | [SEO North Sydney](#) | [SEO Norwest](#) | [SEO Parramatta](#) | [SEO Penrith](#) | [SEO Strathfield](#) | [SEO Wetherill Park](#)

Follow us