[Template:About](/wiki/Template:About" \o "Template:About) [Template:Distinguish2](/wiki/Template:Distinguish2) [Template:Pp-semi-indef](/wiki/Template:Pp-semi-indef) [Template:Pp-move-indef](/wiki/Template:Pp-move-indef) [Template:Internet](/wiki/Template:Internet) The **Internet** is the global system of interconnected [computer networks](/wiki/Computer_network) that use the [Internet protocol suite](/wiki/Internet_protocol_suite) (TCP/IP) to link billions of devices worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked [hypertext](/wiki/Hypertext) documents and [applications](/wiki/Web_application) of the [World Wide Web](/wiki/World_Wide_Web) (WWW), [electronic mail](/wiki/Email), [telephony](/wiki/Voice_over_IP), and [peer-to-peer](/wiki/Peer-to-peer) networks for [file sharing](/wiki/File_sharing).

The origins of the Internet date back to research commissioned by the [United States federal government](/wiki/Federal_government_of_the_United_States) in the 1960s to build robust, fault-tolerant communication via computer networks.[[1]](#cite_note-1) The primary precursor network, the [ARPANET](/wiki/ARPANET), initially served as a backbone for interconnection of regional academic and military networks in the 1980s. The funding of the [National Science Foundation Network](/wiki/National_Science_Foundation_Network) as a new backbone in the 1980s, as well as private funding for other commercial extensions, led to worldwide participation in the development of new networking technologies, and the merger of many networks.[[2]](#cite_note-2) The linking of commercial networks and enterprises by the early 1990s marks the beginning of the transition to the modern Internet,[[3]](#cite_note-3) and generated a sustained exponential growth as generations of institutional, [personal](/wiki/Personal_computer), and [mobile](/wiki/Mobile_device) computers were connected to the network.

Although the Internet has been widely used by [academia](/wiki/Academia) since the 1980s, the [commercialization](/wiki/Commercialization) incorporated its services and technologies into virtually every aspect of modern life. Internet use grew rapidly in the West from the mid-1990s and from the late 1990s in the [developing world](/wiki/Developing_world).[[4]](#cite_note-4) In the 20 years since 1995, Internet use has grown 100-times, measured for the period of one year, to over one third of the [world population](/wiki/World_population).[[5]](#cite_note-5)[[6]](#cite_note-6) Most traditional communications media, including telephony and television, are being reshaped or redefined by the Internet, giving birth to new services such as [Internet telephony](/wiki/Internet_telephony) and [Internet television](/wiki/Internet_television). Newspaper, book, and other print publishing are adapting to [website](/wiki/Web_site) technology, or are reshaped into [blogging](/wiki/Blogging) and [web feeds](/wiki/Web_feed). The entertainment industry was initially the fastest growing segment on the Internet. [Template:Citation needed](/wiki/Template:Citation_needed) The Internet has enabled and accelerated new forms of personal interactions through [instant messaging](/wiki/Instant_messaging), [Internet forums](/wiki/Internet_forum), and [social networking](/wiki/Social_network_service). [Online shopping](/wiki/Online_shopping) has grown exponentially both for major retailers and small [artisans](/wiki/Artisan) and traders. [Business-to-business](/wiki/Business-to-business) and [financial services](/wiki/Financial_services) on the Internet affect [supply chains](/wiki/Supply_chain) across entire industries.

The Internet has no centralized governance in either technological implementation or policies for access and usage; each constituent network sets its own policies.[[7]](#cite_note-7) Only the overreaching definitions of the two principal [name spaces](/wiki/Name_space) in the Internet, the [Internet Protocol address](/wiki/IP_address) space and the [Domain Name System](/wiki/Domain_Name_System) (DNS), are directed by a maintainer organization, the [Internet Corporation for Assigned Names and Numbers](/wiki/Internet_Corporation_for_Assigned_Names_and_Numbers) (ICANN). The technical underpinning and standardization of the core protocols is an activity of the [Internet Engineering Task Force](/wiki/Internet_Engineering_Task_Force) (IETF), a non-profit organization of loosely affiliated international participants that anyone may associate with by contributing technical expertise.[[8]](#cite_note-8)

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## Terminology[[edit](/index.php?title=(none)&action=edit&section=1)]

[250px|thumbnail|The Internet Messenger by](/wiki/File:PikiWiki_Israel_32304_The_Internet_Messenger_by_Buky_Schwartz.JPG) [Buky Schwartz](/wiki/Buky_Schwartz) in [Holon](/wiki/Holon). [Template:See also](/wiki/Template:See_also) The term *Internet*, when used to refer to the specific global system of interconnected [Internet Protocol](/wiki/Internet_Protocol) (IP) networks, is a [proper noun](/wiki/Proper_noun)[[9]](#cite_note-9) and may be written with an initial [capital letter](/wiki/Capital_letter). In common use and the media, it is often not capitalized, viz. *the internet.* Some guides specify that the word should be capitalized when used as a noun, but not capitalized when used as an adjective.[[10]](#cite_note-10) The Internet is also often referred to as *the Net*, as a short form of *network*.

Historically, as early as 1849, the word *internetted* was used uncapitalized as an adjective, meaning *Interconnected* or *interwoven*.[[11]](#cite_note-11) The designers of early computer networks used *internet* both as a noun and as a verb in shorthand form of [internetwork](/wiki/Internetwork) or internetworking, meaning interconnecting computer networks.[[12]](#cite_note-12) The terms *Internet* and *World Wide Web* are often used interchangeably in everyday speech; it is common to speak of "*going on the Internet*" when invoking a [web browser](/wiki/Web_browser) to view [web pages](/wiki/Web_page). However, the [World Wide Web](/wiki/World_Wide_Web) or *the Web* is only one of a large number of Internet services. The Web is a collection of interconnected documents (web pages) and other [web resources](/wiki/Web_resource), linked by [hyperlinks](/wiki/Hyperlink) and [URLs](/wiki/Uniform_resource_locator).[[13]](#cite_note-13) As another point of comparison, [Hypertext Transfer Protocol](/wiki/Hypertext_Transfer_Protocol), or HTTP, is the language used on the Web for information transfer, yet it is just one of many languages or protocols that can be used for communication on the Internet.[[14]](#cite_note-14) The term [*Interweb*](/wiki/Wikt:interweb) is a [portmanteau](/wiki/Portmanteau) of *Internet* and *World Wide Web* typically used sarcastically to parody a technically unsavvy user.

## History[[edit](/index.php?title=(none)&action=edit&section=2)]

[Template:Main article](/wiki/Template:Main_article) Research into [packet switching](/wiki/Packet_switching) started in the early 1960s,[[15]](#cite_note-15) and packet switched networks such as the [ARPANET](/wiki/ARPANET), [CYCLADES](/wiki/CYCLADES),[[16]](#cite_note-16)[[17]](#cite_note-17) the [Merit Network](/wiki/Merit_Network),[[18]](#cite_note-18) [NPL network](/wiki/NPL_network),[[19]](#cite_note-19) [Tymnet](/wiki/Tymnet), and [Telenet](/wiki/Telenet), were developed in the late 1960s and 1970s using a variety of [protocols](/wiki/Communications_protocol).[[20]](#cite_note-20) The ARPANET project led to the development of protocols for [internetworking](/wiki/Internetworking), by which multiple separate networks could be joined into a single network of networks.[[21]](#cite_note-21) ARPANET development began with two network nodes which were interconnected between the Network Measurement Center at the [University of California, Los Angeles](/wiki/University_of_California,_Los_Angeles) (UCLA) [Henry Samueli School of Engineering and Applied Science](/wiki/Henry_Samueli_School_of_Engineering_and_Applied_Science) directed by [Leonard Kleinrock](/wiki/Leonard_Kleinrock), and the NLS system at [SRI International](/wiki/SRI_International) (SRI) by [Douglas Engelbart](/wiki/Douglas_Engelbart) in [Menlo Park](/wiki/Menlo_Park,_California), California, on 29 October 1969.[[22]](#cite_note-22) The third site was the Culler-Fried Interactive Mathematics Center at the [University of California, Santa Barbara](/wiki/University_of_California,_Santa_Barbara), followed by the [University of Utah](/wiki/University_of_Utah) Graphics Department. In an early sign of future growth, fifteen sites were connected to the young ARPANET by the end of 1971.[[23]](#cite_note-23)[[24]](#cite_note-24) These early years were documented in the 1972 film [*Computer Networks: The Heralds of Resource Sharing*](/wiki/Computer_Networks:_The_Heralds_of_Resource_Sharing).

Early international collaborations on the ARPANET were rare. European developers were concerned with developing the [X.25](/wiki/X.25) networks.[[25]](#cite_note-25) Notable exceptions were the Norwegian Seismic Array ([NORSAR](/wiki/NORSAR)) in June 1973, followed in 1973 by Sweden with satellite links to the [Tanum](/wiki/Tanum_Municipality) Earth Station and [Peter T. Kirstein's](/wiki/Peter_T._Kirstein) research group in the United Kingdom, initially at the [Institute of Computer Science](/wiki/Institute_of_Computer_Science), [University of London](/wiki/University_of_London) and later at [University College London](/wiki/University_College_London).[[26]](#cite_note-26)[[27]](#cite_note-27)[[28]](#cite_note-28) In December 1974, RFC 675 (*Specification of Internet Transmission Control Program*), by Vinton Cerf, Yogen Dalal, and Carl Sunshine, used the term *internet* as a shorthand for *internetworking* and later [RFCs](/wiki/Request_for_Comments) repeated this use.[[29]](#cite_note-29) Access to the ARPANET was expanded in 1981 when the [National Science Foundation](/wiki/National_Science_Foundation) (NSF) funded the [Computer Science Network](/wiki/CSNET) (CSNET). In 1982, the [Internet Protocol Suite](/wiki/Internet_Protocol_Suite) (TCP/IP) was standardized, which permitted worldwide proliferation of interconnected networks.

[thumb|300px|T3 NSFNET Backbone, c. 1992.](/wiki/File:NSFNET-backbone-T3.png) TCP/IP network access expanded again in 1986 when the [National Science Foundation Network](/wiki/National_Science_Foundation_Network) (NSFNet) provided access to [supercomputer](/wiki/Supercomputer) sites in the United States for researchers, first at speeds of 56 kbit/s and later at 1.5 Mbit/s and 45 Mbit/s.[[30]](#cite_note-30) Commercial [Internet service providers](/wiki/Internet_service_providers) (ISPs) emerged in the late 1980s and early 1990s. The ARPANET was decommissioned in 1990. By 1995, the Internet was fully commercialized in the U.S. when the NSFNet was decommissioned, removing the last restrictions on use of the Internet to carry commercial traffic.<ref name=ConneXions-April1996>[Template:Cite journal](/wiki/Template:Cite_journal)</ref> The Internet rapidly expanded in Europe and Australia in the mid to late 1980s[[31]](#cite_note-31)[[32]](#cite_note-32) and to Asia in the late 1980s and early 1990s.[[33]](#cite_note-33) The beginning of dedicated [transatlantic](/wiki/Wikt:transatlantic) communication between the NSFNET and networks in Europe was established with a low-speed satellite relay between [Princeton University](/wiki/Princeton_University) and [Stockholm, Sweden](/wiki/Stockholm,_Sweden) in December 1988.[[34]](#cite_note-34) Although other network protocols such as [UUCP](/wiki/UUCP) had global reach well before this time, this marked the beginning of the Internet as an intercontinental network.

Slightly over a year later in March 1990, the first high-speed T1 (1.5 Mbit/s) link between the NSFNET and Europe was installed between [Cornell University](/wiki/Cornell_University) and [CERN](/wiki/CERN), allowing much more robust communications than were capable with satellites.[[35]](#cite_note-35) The Internet's technologies have developed enough in recent years, especially in the use of [Unicode](/wiki/Unicode), that good facilities are available for development and communication in the world's widely used languages. However, some glitches such as [*mojibake*](/wiki/Mojibake) (incorrect display of some languages' characters) still remain.

In an American study in 2005, the percentage of men using the Internet was very slightly ahead of the percentage of women, although this difference reversed in those under 30. Men logged on more often, spent more time online, and were more likely to be broadband users, whereas women tended to make more use of opportunities to communicate (such as email). Men were more likely to use the Internet to pay bills, participate in auctions, and for recreation such as downloading music and videos. Men and women were equally likely to use the Internet for shopping and banking.[[68]](#cite_note-68)More recent studies indicate that in 2008, women significantly outnumbered men on most social networking sites, such as Facebook and Myspace, although the ratios varied with age.[[69]](#cite_note-69) In addition, women watched more streaming content, whereas men downloaded more.[[70]](#cite_note-70) In terms of blogs, men were more likely to blog in the first place; among those who blog, men were more likely to have a professional blog, whereas women were more likely to have a personal blog.[[71]](#cite_note-71) According to forecasts by [Euromonitor International](/wiki/Euromonitor_International), 44% of the world's population will be users of the Internet by 2020.[[72]](#cite_note-72) Splitting by country, in 2012 Iceland, Norway, Sweden, the Netherlands, and Denmark had the highest [Internet penetration by the number of users](/wiki/List_of_countries_by_number_of_Internet_users), with 93% or more of the population with access.<ref name=ITU-IndividualsUsingTheInternet>["Percentage of Individuals using the Internet 2000-2012"](http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2013/Individuals_Internet_2000-2012.xls), International Telecommunications Union (Geneva), June 2013, retrieved 22 June 2013</ref>

Several neologisms exist that refer to Internet users: [Netizen](/wiki/Netizen) (as in as in "citizen of the net")[[73]](#cite_note-73) refers to those [actively involved](/wiki/Online_participation) in improving [online communities](/wiki/Virtual_community), the Internet in general or surrounding political affairs and rights such as [free speech](/wiki/Freedom_of_speech#The_Internet_and_Information_Society),[[74]](#cite_note-74)<ref name=Hauben>[*The Net and Netizens by Michael Hauben*](http://www.columbia.edu/~rh120/ch106.x01), Columbia University.</ref> [Internaut](/wiki/Internaut) refers to operators or technically highly capable users of the Internet,[[75]](#cite_note-75)[[76]](#cite_note-76) [digital citizen](/wiki/Digital_citizen) refers to a person using the Internet in order to engage in society, politics, and government participation.[[77]](#cite_note-77)

### Usage[[edit](/index.php?title=(none)&action=edit&section=15)]

The Internet allows greater flexibility in working hours and location, especially with the spread of unmetered high-speed connections. The Internet can be accessed almost anywhere by numerous means, including through [mobile Internet devices](/wiki/Mobile_Internet_device). Mobile phones, [datacards](/wiki/Datacard), [handheld game consoles](/wiki/Handheld_game_console) and [cellular routers](/wiki/Cellular_router) allow users to connect to the Internet [wirelessly](/wiki/Wireless). Within the limitations imposed by small screens and other limited facilities of such pocket-sized devices, the services of the Internet, including email and the web, may be available. Service providers may restrict the services offered and mobile data charges may be significantly higher than other access methods.

Educational material at all levels from pre-school to post-doctoral is available from websites. Examples range from [CBeebies](/wiki/CBeebies), through school and high-school revision guides and [virtual universities](/wiki/Virtual_university), to access to top-end scholarly literature through the likes of [Google Scholar](/wiki/Google_Scholar). For [distance education](/wiki/Distance_education), help with [homework](/wiki/Homework) and other assignments, self-guided learning, whiling away spare time, or just looking up more detail on an interesting fact, it has never been easier for people to access educational information at any level from anywhere. The Internet in general and the [World Wide Web](/wiki/World_Wide_Web) in particular are important enablers of both [formal](/wiki/Education) and [informal education](/wiki/Informal_education). Further, the Internet allows universities, in particular, researchers from the social and behavioral sciences, to conduct research remotely via virtual laboratories, with profound changes in reach and generalizability of findings as well as in communication between scientists and in the publication of results.[[78]](#cite_note-78) The low cost and nearly instantaneous sharing of ideas, knowledge, and skills have made [collaborative](/wiki/Collaboration) work dramatically easier, with the help of [collaborative software](/wiki/Collaborative_software). Not only can a group cheaply communicate and share ideas but the wide reach of the Internet allows such groups more easily to form. An example of this is the [free software movement](/wiki/Free_software_movement), which has produced, among other things, [Linux](/wiki/Linux), [Mozilla Firefox](/wiki/Mozilla_Firefox), and [OpenOffice.org](/wiki/OpenOffice.org). Internet chat, whether using an [IRC](/wiki/IRC) chat room, an [instant messaging](/wiki/Instant_messaging) system, or a [social networking](/wiki/Social_networking) website, allows colleagues to stay in touch in a very convenient way while working at their computers during the day. Messages can be exchanged even more quickly and conveniently than via email. These systems may allow files to be exchanged, drawings and images to be shared, or voice and video contact between team members.

[Content management](/wiki/Content_management) systems allow collaborating teams to work on shared sets of documents simultaneously without accidentally destroying each other's work. Business and project teams can share calendars as well as documents and other information. Such collaboration occurs in a wide variety of areas including scientific research, software development, conference planning, political activism and creative writing. Social and political collaboration is also becoming more widespread as both Internet access and [computer literacy](/wiki/Computer_literacy) spread.

The Internet allows computer users to remotely access other computers and information stores easily from any access point. Access may be with [computer security](/wiki/Computer_security), i.e. authentication and encryption technologies, depending on the requirements. This is encouraging new ways of working from home, collaboration and information sharing in many industries. An accountant sitting at home can [audit](/wiki/Audit) the books of a company based in another country, on a [server](/wiki/Server_(computing)) situated in a third country that is remotely maintained by IT specialists in a fourth. These accounts could have been created by home-working bookkeepers, in other remote locations, based on information emailed to them from offices all over the world. Some of these things were possible before the widespread use of the Internet, but the cost of private [leased lines](/wiki/Leased_line) would have made many of them infeasible in practice. An office worker away from their desk, perhaps on the other side of the world on a business trip or a holiday, can access their emails, access their data using [cloud computing](/wiki/Cloud_computing), or open a [remote desktop](/wiki/Remote_Desktop_Protocol) session into their office PC using a secure [virtual private network](/wiki/Virtual_private_network) (VPN) connection on the Internet. This can give the worker complete access to all of their normal files and data, including email and other applications, while away from the office. It has been referred to among [system administrators](/wiki/System_administrator) as the Virtual Private Nightmare,[[79]](#cite_note-79) because it extends the secure perimeter of a corporate network into remote locations and its employees' homes.

### Social networking and entertainment[[edit](/index.php?title=(none)&action=edit&section=16)]

[Template:See also](/wiki/Template:See_also) Many people use the World Wide Web to access news, weather and sports reports, to plan and book vacations and to pursue their personal interests. People use [chat](/wiki/Online_chat), messaging and email to make and stay in touch with friends worldwide, sometimes in the same way as some previously had [pen pals](/wiki/Pen_pal).

[Social networking](/wiki/Social_network_service) websites such as [Facebook](/wiki/Facebook), [Twitter](/wiki/Twitter), and [Myspace](/wiki/Myspace) have created new ways to socialize and interact. Users of these sites are able to add a wide variety of information to pages, to pursue common interests, and to connect with others. It is also possible to find existing acquaintances, to allow communication among existing groups of people. Sites like [LinkedIn](/wiki/LinkedIn) foster commercial and business connections. YouTube and [Flickr](/wiki/Flickr) specialize in users' videos and photographs.

While social networking sites were initially for individuals only, today they are widely used by businesses and other organizations to promote their brands, to market to their customers and to encourage posts to "[go viral](/wiki/Viral_marketing)". "Black hat" social media techniques are also employed by some organizations, such as [spam](/wiki/Spamming) accounts and [astroturfing](/wiki/Astroturfing).

A risk for both individuals and organizations writing posts (especially public posts) on social networking websites, is that especially foolish or controversial posts occasionally lead to an unexpected and possibly large-scale backlash on social media from other Internet users. This is also a risk in relation to controversial *offline* behavior, if it is widely made known. The nature of this backlash can range widely from counter-arguments and public mockery, through insults and [hate speech](/wiki/Hate_speech), to, in extreme cases, rape and death [threats](/wiki/Computer_crime#Threats). The [online disinhibition effect](/wiki/Online_disinhibition_effect) describes the tendency of many individuals to behave more stridently or offensively online than they would in person. A significant number of [feminist](/wiki/Feminist) women have been the target of various forms of [harassment](/wiki/Harassment) in response to posts they have made on social media, and Twitter in particular has been criticised in the past for not doing enough to aid victims of online abuse.[[80]](#cite_note-80) For organizations, such a backlash can cause overall [brand damage](/wiki/Public_relations), especially if reported by the media. However, this is not always the case, as any brand damage in the eyes of people with an opposing opinion to that presented by the organization could sometimes be outweighed by strengthening the brand in the eyes of others. Furthermore, if an organization or individual gives in to demands that others perceive as wrong-headed, that can then provoke a counter-backlash.

Some websites, such as [Reddit](/wiki/Reddit), have rules forbidding the posting of [personal information](/wiki/Personal_information) of individuals (also known as [doxxing](/wiki/Doxxing)), due to concerns about such postings leading to mobs of large numbers of Internet users directing harassment at the specific individuals thereby identified. In particular, the Reddit rule forbidding the posting of personal information is widely understood to imply that all identifying photos and names must be [censored](/wiki/Censored) in Facebook [screenshots](/wiki/Screenshots) posted to Reddit. However, the interpretation of this rule in relation to public Twitter posts is less clear, and in any case, like-minded people online have many other ways they can use to direct each other's attention to public social media posts they disagree with.

Children also face dangers online such as [cyberbullying](/wiki/Cyberbullying) and [approaches by sexual predators](/wiki/Child_grooming), who sometimes pose as children themselves. Children may also encounter material which they may find upsetting, or material which their parents consider to be not age-appropriate. Due to naivety, they may also post personal information about themselves online, which could put them or their families at risk unless warned not to do so. Many parents choose to enable [Internet filtering](/wiki/Content-control_software), and/or supervise their children's online activities, in an attempt to protect their children from inappropriate material on the Internet. The most popular social networking websites, such as Facebook and Twitter, commonly forbid users under the age of 13. However, these policies are typically trivial to circumvent by registering an account with a false birth date, and a significant number of children aged under 13 join such sites anyway. Social networking sites for younger children, which claim to provide better levels of protection for children, also exist.[[81]](#cite_note-81) The Internet has been a major outlet for leisure activity since its inception, with entertaining [social experiments](/wiki/Social_experiment) such as [MUDs](/wiki/MUD) and [MOOs](/wiki/MOO) being conducted on university servers, and humor-related [Usenet](/wiki/Usenet) groups receiving much traffic. Today, many [Internet forums](/wiki/Internet_forums) have sections devoted to games and funny videos. Over 6 million people use blogs or message boards as a means of communication and for the sharing of ideas. The [Internet pornography](/wiki/Internet_pornography) and [online gambling](/wiki/Online_gambling) industries have taken advantage of the World Wide Web, and often provide a significant source of advertising revenue for other websites.[[82]](#cite_note-82) Although many governments have attempted to restrict both industries' use of the Internet, in general, this has failed to stop their widespread popularity.[[83]](#cite_note-83) Another area of leisure activity on the Internet is [multiplayer gaming](/wiki/Multiplayer_gaming).[[84]](#cite_note-84) This form of recreation creates communities, where people of all ages and origins enjoy the fast-paced world of multiplayer games. These range from [MMORPG](/wiki/MMORPG) to [first-person shooters](/wiki/First-person_shooter), from [role-playing video games](/wiki/Role-playing_video_game) to [online gambling](/wiki/Online_gambling). While online gaming has been around since the 1970s, modern modes of online gaming began with subscription services such as [GameSpy](/wiki/GameSpy_Arcade) and [MPlayer](/wiki/MPlayer.com).[[85]](#cite_note-85) Non-subscribers were limited to certain types of game play or certain games. Many people use the Internet to access and download music, movies and other works for their enjoyment and relaxation. Free and fee-based services exist for all of these activities, using centralized servers and distributed peer-to-peer technologies. Some of these sources exercise more care with respect to the original artists' copyrights than others.

Internet usage has been correlated to users' loneliness.[[86]](#cite_note-86) Lonely people tend to use the Internet as an outlet for their feelings and to share their stories with others, such as in the "[I am lonely will anyone speak to me](/wiki/I_am_lonely_will_anyone_speak_to_me)" thread.

[Cybersectarianism](/wiki/Cybersectarianism) is a new organizational form which involves: "highly dispersed small groups of practitioners that may remain largely anonymous within the larger social context and operate in relative secrecy, while still linked remotely to a larger network of believers who share a set of practices and texts, and often a common devotion to a particular leader. Overseas supporters provide funding and support; domestic practitioners distribute tracts, participate in acts of resistance, and share information on the internal situation with outsiders. Collectively, members and practitioners of such sects construct viable virtual communities of faith, exchanging personal testimonies and engaging in the collective study via email, on-line chat rooms, and web-based message boards."[[87]](#cite_note-87) In particular, the British government has raised concerns about the prospect of young British Muslims being indoctrinated into Islamic extremism by material on the Internet, being persuaded to join [terrorist](/wiki/Terrorist) groups such as the so-called "[Islamic State](/wiki/Islamic_State_of_Iraq_and_the_Levant)", and then potentially committing acts of terrorism on returning to Britain after fighting in Syria or Iraq.

[Cyberslacking](/wiki/Cyberslacking) can become a drain on corporate resources; the average UK employee spent 57 minutes a day surfing the Web while at work, according to a 2003 study by Peninsula Business Services.[[88]](#cite_note-88) [Internet addiction disorder](/wiki/Internet_addiction_disorder) is excessive computer use that interferes with daily life.[[89]](#cite_note-89) Psychologist, Nicolas Carr believe that Internet use has other [effects on individuals](/wiki/Psychological_effects_of_Internet_use), for instance improving skills of scan-reading and interfering with the deep thinking that leads to true creativity.[[90]](#cite_note-90)

### Electronic business[[edit](/index.php?title=(none)&action=edit&section=17)]

[Electronic business](/wiki/Electronic_business) (*e-business*) encompasses business processes spanning the entire [value chain](/wiki/Value_chain): purchasing, [supply chain management](/wiki/Supply_chain_management), [marketing](/wiki/Marketing), [sales](/wiki/Sales), [customer](/wiki/Customer) service, and business relationship. [E-commerce](/wiki/E-commerce) seeks to add revenue streams using the Internet to build and enhance relationships with clients and partners.

According to [International Data Corporation](/wiki/International_Data_Corporation), the size of worldwide e-commerce, when global business-to-business and -consumer transactions are combined, equate to $16 trillion for 2013. A report by [Oxford Economics](/wiki/Oxford_Economics) adds those two together to estimate the total size of the [digital economy](/wiki/Digital_economy) at $20.4 trillion, equivalent to roughly 13.8% of global sales.[[91]](#cite_note-91) While much has been written of the economic advantages of [Internet-enabled commerce](/wiki/Electronic_commerce), there is also evidence that some aspects of the Internet such as maps and location-aware services may serve to reinforce [economic inequality](/wiki/Economic_inequality) and the [digital divide](/wiki/Digital_divide).[[92]](#cite_note-92) Electronic commerce may be responsible for [consolidation](/wiki/Consolidation_(business)) and the decline of [mom-and-pop](/wiki/Mom-and-pop), [brick and mortar](/wiki/Brick_and_mortar) businesses resulting in increases in [income inequality](/wiki/Income_inequality).[[93]](#cite_note-93)[[94]](#cite_note-94)[[95]](#cite_note-95) Author [Andrew Keen](/wiki/Andrew_Keen), a long-time critic of the social transformations caused by the Internet, has recently focused on the economic effects of consolidation from Internet businesses. Keen cites a 2013 [Institute for Local Self-Reliance](/wiki/Institute_for_Local_Self-Reliance) report saying brick-and-mortar retailers employ 47 people for every $10 million in sales while Amazon employs only 14. Similarly, the 700-employee room rental start-up [Airbnb](/wiki/Airbnb) was valued at $10 billion in 2014, about half as much as [Hilton Hotels](/wiki/Hilton_Worldwide), which employs 152,000 people. And car-sharing Internet startup [Uber](/wiki/Uber_(company)) employs 1,000 full-time employees and is valued at $18.2 billion, about the same valuation as [Avis](/wiki/Avis_Rent_a_Car_System) and [Hertz](/wiki/The_Hertz_Corporation) combined, which together employ almost 60,000 people.[[96]](#cite_note-96)

### Telecommuting[[edit](/index.php?title=(none)&action=edit&section=18)]

[Telecommuting](/wiki/Telecommuting) is the performance within a traditional worker and employer relationship when it is facilitated by tools such as [groupware](/wiki/Groupware), [virtual private networks](/wiki/Virtual_private_networks), [conference calling](/wiki/Conference_calling), [videoconferencing](/wiki/Videoconferencing), and [voice over IP](/wiki/Voice_over_IP) (VOIP) so that work may be performed from any location, most conveniently the worker's home. It can be efficient and useful for companies as it allows workers to communicate over long distances, saving significant amounts of travel time and cost. As [broadband](/wiki/Broadband) Internet connections become commonplace, more workers have adequate bandwidth at home to use these tools to link their home to their corporate [intranet](/wiki/Intranet) and internal communication networks.

### Crowdsourcing[[edit](/index.php?title=(none)&action=edit&section=19)]

The Internet provides a particularly good venue for [crowdsourcing](/wiki/Crowdsourcing), because individuals tend to be more open in web-based projects where they are not being physically judged or scrutinized and thus can feel more comfortable sharing.[Template:Citation needed](/wiki/Template:Citation_needed)

### Collaborative publishing[[edit](/index.php?title=(none)&action=edit&section=20)]

[Wikis](/wiki/Wiki) have also been used in the academic community for sharing and dissemination of information across institutional and international boundaries.[[97]](#cite_note-97) In those settings, they have been found useful for collaboration on [grant writing](/wiki/Grant_writing), [strategic planning](/wiki/Strategic_planning), departmental documentation, and committee work.[[98]](#cite_note-98) The [United States Patent and Trademark Office](/wiki/United_States_Patent_and_Trademark_Office) uses a wiki to allow the public to collaborate on finding [prior art](/wiki/Prior_art) relevant to examination of pending patent applications. [Queens](/wiki/Queens), New York has used a wiki to allow citizens to collaborate on the design and planning of a local park.<ref name=Noveck>[Template:Cite journal](/wiki/Template:Cite_journal)[Template:Paywall](/wiki/Template:Paywall)</ref>

The [English Wikipedia](/wiki/English_Wikipedia) has the largest user base among wikis on the World Wide Web[[99]](#cite_note-99) and ranks in the top 10 among all Web sites in terms of traffic.[[100]](#cite_note-100)

### Politics and political revolutions[[edit](/index.php?title=(none)&action=edit&section=21)]

[Template:See also](/wiki/Template:See_also) [thumb|right|Banner in](/wiki/File:Thai-coup-detat-2014-social-media-banner.jpg) [Bangkok](/wiki/Bangkok) during the [2014 Thai coup d'état](/wiki/2014_Thai_coup_d'état), informing the [Thai](/wiki/Thailand) public that 'like' or 'share' activities on social media could result in imprisonment (observed June 30, 2014). The Internet has achieved new relevance as a political tool. The presidential campaign of [Howard Dean](/wiki/Howard_Dean) in 2004 in the United States was notable for its success in soliciting donation via the Internet. Many political groups use the Internet to achieve a new method of organizing for carrying out their mission, having given rise to [Internet activism](/wiki/Internet_activism), most notably practiced by rebels in the [Arab Spring](/wiki/Arab_Spring).<ref name = cascading>[Template:Cite web](/wiki/Template:Cite_web)</ref>[[101]](#cite_note-101) [The New York Times](/wiki/The_New_York_Times) suggested that [social media](/wiki/Social_media) websites, such as Facebook and Twitter, helped people organize the political revolutions in Egypt, by helping activists organize protests, communicate grievances, and disseminate information.[[102]](#cite_note-102) The potential of the Internet as a civic tool of communicative power was explored by Simon R. B. Berdal in his 2004 thesis: [Template:Quote](/wiki/Template:Quote)

Berdal, therefore, extends the [Habermasian](/wiki/Jürgen_Habermas) notion of the [Public sphere](/wiki/Public_sphere) to the Internet, and underlines the inherent global and civic nature that interwoven Internet technologies provide. To limit the growing civic potential of the Internet, Berdal also notes how "self-protective measures" are put in place by those threatened by it: [Template:Quote](/wiki/Template:Quote)

Incidents of politically motivated [Internet censorship](/wiki/Internet_censorship) have now been recorded in many countries, including western democracies.

### Philanthropy[[edit](/index.php?title=(none)&action=edit&section=22)]

The spread of low-cost Internet access in developing countries has opened up new possibilities for [peer-to-peer](/wiki/Social_peer-to-peer_processes) charities, which allow individuals to contribute small amounts to charitable projects for other individuals. Websites, such as [DonorsChoose](/wiki/DonorsChoose) and [GlobalGiving](/wiki/GlobalGiving), allow small-scale donors to direct funds to individual projects of their choice.

A popular twist on Internet-based philanthropy is the use of [peer-to-peer lending](/wiki/Peer-to-peer_lending) for charitable purposes. [Kiva](/wiki/Kiva_(organization)) pioneered this concept in 2005, offering the first web-based service to publish individual loan profiles for funding. Kiva raises funds for local intermediary [microfinance](/wiki/Microfinance) organizations which post stories and updates on behalf of the borrowers. Lenders can contribute as little as $25 to loans of their choice, and receive their money back as borrowers repay. Kiva falls short of being a pure peer-to-peer charity, in that loans are disbursed before being funded by lenders and borrowers do not communicate with lenders themselves.[[103]](#cite_note-103)[[104]](#cite_note-104) However, the recent spread of low-cost Internet access in [developing countries](/wiki/Developing_countries) has made genuine international person-to-person philanthropy increasingly feasible. In 2009, the US-based nonprofit [Zidisha](/wiki/Zidisha) tapped into this trend to offer the first person-to-person microfinance platform to link lenders and borrowers across international borders without intermediaries. Members can fund loans for as little as a dollar, which the borrowers then use to develop business activities that improve their families' incomes while repaying loans to the members with interest. Borrowers access the Internet via public cybercafes, donated laptops in village schools, and even smart phones, then create their own profile pages through which they share photos and information about themselves and their businesses. As they repay their loans, borrowers continue to share updates and dialogue with lenders via their profile pages. This direct web-based connection allows members themselves to take on many of the communication and recording tasks traditionally performed by local organizations, bypassing geographic barriers and dramatically reducing the cost of microfinance services to the entrepreneurs.[[105]](#cite_note-105)

## Security[[edit](/index.php?title=(none)&action=edit&section=23)]

[Template:Main article](/wiki/Template:Main_article) Internet resources, hardware, and software components are the target of malicious attempts to gain unauthorized control to cause interruptions or access private information. Such attempts include [computer viruses](/wiki/Computer_virus) which copy with the help of humans, [computer worms](/wiki/Computer_worm) which copy themselves automatically, [denial of service attacks](/wiki/Denial_of_service_attack), [ransomware](/wiki/Ransomware), [botnets](/wiki/Botnet), and [spyware](/wiki/Spyware) that reports on the activity and typing of users. Usually, these activities constitute [cybercrime](/wiki/Cybercrime). Defense theorists have also speculated about the possibilities of [cyber warfare](/wiki/Cyber_warfare) using similar methods on a large scale.[Template:Citation needed](/wiki/Template:Citation_needed)

### Surveillance[[edit](/index.php?title=(none)&action=edit&section=24)]

[Template:Main article](/wiki/Template:Main_article) [Template:See also](/wiki/Template:See_also) The vast majority of computer surveillance involves the monitoring of [data](/wiki/Data_mining) and [traffic](/wiki/Traffic_analysis) on the Internet.[[106]](#cite_note-106) In the United States for example, under the [Communications Assistance For Law Enforcement Act](/wiki/Communications_Assistance_For_Law_Enforcement_Act), all phone calls and broadband Internet traffic (emails, web traffic, instant messaging, etc.) are required to be available for unimpeded real-time monitoring by Federal law enforcement agencies.[[107]](#cite_note-107)[[108]](#cite_note-108)[[109]](#cite_note-109) [Packet capture](/wiki/Packet_capture) is the monitoring of data traffic on a [computer network](/wiki/Computer_network). Computers communicate over the Internet by breaking up messages (emails, images, videos, web pages, files, etc.) into small chunks called "packets", which are routed through a network of computers, until they reach their destination, where they are assembled back into a complete "message" again. [Packet Capture Appliance](/wiki/Packet_Capture_Appliance) intercepts these packets as they are traveling through the network, in order to examine their contents using other programs. A packet capture is an information *gathering* tool, but not an *analysis* tool. That is it gathers "messages" but it does not analyze them and figure out what they mean. Other programs are needed to perform [traffic analysis](/wiki/Traffic_analysis) and sift through intercepted data looking for important/useful information. Under the [Communications Assistance For Law Enforcement Act](/wiki/Communications_Assistance_For_Law_Enforcement_Act) all U.S. telecommunications providers are required to install packet sniffing technology to allow Federal law enforcement and intelligence agencies to intercept all of their customers' [broadband Internet](/wiki/Broadband_Internet) and [voice over Internet protocol](/wiki/Voice_over_Internet_protocol) (VoIP) traffic.[[110]](#cite_note-110) The large amount of data gathered from packet capturing requires surveillance software that filters and reports relevant information, such as the use of certain words or phrases, the access of certain types of web sites, or communicating via email or chat with certain parties.[[111]](#cite_note-111) Agencies, such as the [Information Awareness Office](/wiki/Information_Awareness_Office), [NSA](/wiki/NSA), [GCHQ](/wiki/GCHQ) and the [FBI](/wiki/FBI), spend billions of dollars per year to develop, purchase, implement, and operate systems for interception and analysis of data.[[112]](#cite_note-112) Similar systems are operated by [Iranian secret police](/wiki/Ministry_of_Intelligence_and_National_Security_of_Iran) to identify and suppress dissidents. The required hardware and software was allegedly installed by German [Siemens AG](/wiki/Siemens_AG) and Finnish [Nokia](/wiki/Nokia).[[113]](#cite_note-113)

### Censorship[[edit](/index.php?title=(none)&action=edit&section=25)]

[[File:Internet Censorship and Surveillance World Map.svg|right|400px|thumb|

[**Internet censorship and surveillance by country**](/wiki/Internet_censorship_by_country)<ref name=ONISS-Nov2011>OpenNet Initiative ["Summarized global Internet filtering data spreadsheet"](http://opennet.net/research/data), 8 November 2011 and ["Country Profiles"](http://opennet.net/research/profiles), the OpenNet Initiative is a collaborative partnership of the Citizen Lab at the Munk School of Global Affairs, University of Toronto; the Berkman Center for Internet & Society at Harvard University; and the SecDev Group, Ottawa</ref><ref name=ONIChildPornLegal>Due to legal concerns the [OpenNet Initiative](/wiki/OpenNet_Initiative) does not check for filtering of [child pornography](/wiki/Child_pornography) and because their classifications focus on technical filtering, they do not include other types of censorship.</ref><ref name=RWBEnemies2014>["Internet Enemies"](http://12mars.rsf.org/2014-en/#slide2), *Enemies of the Internet 2014: Entities at the heart of censorship and surveillance*, Reporters Without Borders (Paris), 11 March 2014. Retrieved 24 June 2014.</ref><ref name=RWBEnemies>[*Internet Enemies*](https://12mars.rsf.org/wp-content/uploads/EN_RAPPORT_INTERNET_BD.pdf), Reporters Without Borders (Paris), 12 March 2012</ref>

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Some governments, such as those of [Burma](/wiki/Burma), [Iran](/wiki/Iran), [North Korea](/wiki/Censorship_in_North_Korea), the [Mainland China](/wiki/Censorship_in_China), [Saudi Arabia](/wiki/Saudi_Arabia) and the [United Arab Emirates](/wiki/United_Arab_Emirates) restrict access to content on the Internet within their territories, especially to political and religious content, with domain name and keyword filters.[[114]](#cite_note-114) In Norway, Denmark, Finland, and Sweden, major Internet service providers have voluntarily agreed to restrict access to sites listed by authorities. While this list of forbidden resources is supposed to contain only known child pornography sites, the content of the list is secret.[[115]](#cite_note-115) Many countries, including the United States, have enacted laws against the possession or distribution of certain material, such as [child pornography](/wiki/Child_pornography), via the Internet, but do not mandate filter software. Many free or commercially available software programs, called [content-control software](/wiki/Content-control_software) are available to users to block offensive websites on individual computers or networks, in order to limit access by children to pornographic material or depiction of violence.

## Performance[[edit](/index.php?title=(none)&action=edit&section=26)]

[Template:Expand section](/wiki/Template:Expand_section) As the Internet is a heterogeneous network, the physical characteristics, including for example the [data transfer rates](/wiki/Bit_rate) of connections, vary widely. It exhibits [emergent phenomena](/wiki/Emergence) that depend on its large-scale organization.[Template:Citation needed](/wiki/Template:Citation_needed)

### Outages[[edit](/index.php?title=(none)&action=edit&section=27)]

An Internet blackout or outage can be caused by local signalling interruptions. Disruptions of [submarine communications cables](/wiki/Submarine_communications_cable) may cause blackouts or slowdowns to large areas, such as in the [2008 submarine cable disruption](/wiki/2008_submarine_cable_disruption). Less-developed countries are more vulnerable due to a small number of high-capacity links. Land cables are also vulnerable, as in 2011 when a woman digging for scrap metal severed most connectivity for the nation of Armenia.[[116]](#cite_note-116) Internet blackouts affecting almost entire countries can be achieved by governments as a form of [Internet censorship](/wiki/Internet_censorship), as in the blockage of the [Internet in Egypt](/wiki/Internet_in_Egypt), whereby approximately 93%[[117]](#cite_note-117) of networks were without access in 2011 in an attempt to stop mobilization for [anti-government protests](/wiki/Egyptian_Revolution_of_2011).[[118]](#cite_note-118)

### Energy use[[edit](/index.php?title=(none)&action=edit&section=28)]

In 2011, researchers estimated the energy used by the Internet to be between 170 and 307 GW, less than two percent of the energy used by humanity. This estimate included the energy needed to build, operate, and periodically replace the estimated 750 million laptops, a billion smart phones and 100 million servers worldwide as well as the energy that routers, cell towers, optical switches, Wi-Fi transmitters and cloud storage devices use when transmitting Internet traffic.[[119]](#cite_note-119)[[120]](#cite_note-120) [Template:Clear](/wiki/Template:Clear)

## See also[[edit](/index.php?title=(none)&action=edit&section=29)]

[Template:Wikipedia books](/wiki/Template:Wikipedia_books) [Template:Portal](/wiki/Template:Portal) [Template:Div col](/wiki/Template:Div_col)

* [Darknet](/wiki/Darknet)
* [Deep web](/wiki/Deep_web)
* [Freenet](/wiki/Freenet)
* [Index of Internet-related articles](/wiki/Index_of_Internet-related_articles)
* [Internet metaphors](/wiki/Internet_metaphors)
* "[Internets](/wiki/Internets)"
* [Open Systems Interconnection](/wiki/Open_Systems_Interconnection)
* [Outline of the Internet](/wiki/Outline_of_the_Internet)

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## References[[edit](/index.php?title=(none)&action=edit&section=30)]

[Template:Reflist](/wiki/Template:Reflist)

## Further reading[[edit](/index.php?title=(none)&action=edit&section=31)]

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## External links[[edit](/index.php?title=(none)&action=edit&section=32)]

[Template:Sister project links](/wiki/Template:Sister_project_links)

* [The Internet Society](http://www.isoc.org/)
* [Berkman Center for Internet and Society](http://cyber.law.harvard.edu/)
* [European Commission Information Society](http://ec.europa.eu/information_society/index_en.htm)
* [Living Internet](http://www.livinginternet.com/), Internet history and related information, including information from many creators of the Internet
* [Ger Magazine](/wiki/Ger_magazine), Mongolia's first online magazine, launched in 1998.

[Template:Media culture](/wiki/Template:Media_culture) [Template:Telecommunications](/wiki/Template:Telecommunications) [Template:Use British English](/wiki/Template:Use_British_English) [Template:Use dmy dates](/wiki/Template:Use_dmy_dates)

[Template:Authority control](/wiki/Template:Authority_control)

[Category:Internet](/wiki/Category:Internet) [Category:1969 introductions](/wiki/Category:1969_introductions) [Category:1983 introductions](/wiki/Category:1983_introductions) [Category:American inventions](/wiki/Category:American_inventions) [Category:Digital technology](/wiki/Category:Digital_technology) [Category:Media technology](/wiki/Category:Media_technology) [Category:New media](/wiki/Category:New_media)

[Category:Cultural globalization](/wiki/Category:Cultural_globalization) [Category:Telegraphy](/wiki/Category:Telegraphy) [Category:Public services](/wiki/Category:Public_services) [Category:Transport systems](/wiki/Category:Transport_systems) [Category:Virtual reality](/wiki/Category:Virtual_reality) [Category:1969 in the United States](/wiki/Category:1969_in_the_United_States)