FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

ACA CONNECTS – AMERICA'S COMMUNICATIONS ASSOCIATION, FKA American Cable Association; CTIA – THE WIRELESS ASSOCIATION; NCTA – THE INTERNET & TELEVISION ASSOCIATION; USTELECOM – THE BROADBAND ASSOCIATION, *Plaintiffs-Appellants*, v. ROB BONTA, in his official capacity as Attorney General of California, *Defendant-Appellee.*	No. 21-15430 D.C. No. 2:18-cv-02684-JAM-DB OPINION

Appeal from the United States District Court
for the Eastern District of California
John A. Mendez, District Judge, Presiding

Argued and Submitted September 14, 2021
San Francisco, California

Filed January 28, 2022

Before: J. Clifford Wallace, Mary M. Schroeder, and Danielle J. Forrest, Circuit Judges.

Opinion by Judge Schroeder;
Concurrence by Judge Wallace

SUMMARY*

Preliminary Injunction / Preemption

The panel affirmed the district court's order denying plaintiffs' motion for a preliminary injunction against enforcement of the California Internet Consumer Protection and Net Neutrality Act of 2018, or SB-822.

In a 2018 order, the Federal Communications Commission decided to stop treating broadband internet services as "telecommunications services" subject to relatively comprehensive, common-carrier regulation pursuant to Title II of the Communications Act, and to classify them instead under Title I as lightly regulated "information services," which had the result of terminating federal net neutrality rules. A group of industry trade associations representing communications service providers sought an injunction to prevent the California Attorney General from enforcing SB-822, which in essence, codified the rescinded federal net neutrality rules, but limited its application to broadband internet services provided to customers in California. The district court concluded there

* This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

was no federal preemption because the FCC lacked the requisite regulatory authority.

In *Mozilla Corp. v. F.C.C.*, 940 F.3d 1 (D.C. Cir. 2019), the D.C. Circuit upheld the FCC's 2018 reclassification decision but struck down an accompanying order preempting state net neutrality rules. The panel rejected the service providers' contention that SB-822 nevertheless was preempted because it conflicted with the policy underlying the FCC's reclassification decision and conflicted with the Communications Act and its limitations on federal regulation. The panel also rejected the service providers' contention that SB-822 was preempted because federal law occupies the field of interstate services.

Guided by the D.C. Circuit's decision in *Mozilla*, the panel held that only the invocation of federal regulatory authority can preempt state regulatory authority. The panel held that, by classifying broadband internet services as information services, the FCC no longer had the authority to regulate in the same manner that it did when these services were classified as telecommunications services. The FCC, therefore, could not preempt state action, like SB-822, that protects net neutrality. The panel held that SB-822 did not conflict with the Communications Act itself, which only limits the FCC's regulatory authority. The panel held that the service providers' field preemption argument was foreclosed by case law and various provisions of the Communications Act.

Concurring, Judge Wallace wrote separately to express his concern that in some cases, parties appeal orders granting or denying motions for preliminary injunctions in the misguided belief they can ascertain the views of the appellate

court on the merits of the litigation, and this often leads to unnecessary cost, delay and inefficient use of judicial resources.

COUNSEL

Scott H. Angstreich (argued), Leslie V. Pope, and Alex A. Parkinson, Kellogg Hansen Todd Figel & Frederick PLLC, Washington, D.C., for Plaintiffs-Appellants CTIA – The Wireless Association and USTelecom – The Broadband Association.

Matthew A. Brill, James Tomberlin, Matthew T. Murchison, and Ryan S. Baasch, Latham & Watkins LLP, Washington, D.C., for Plaintiff-Appellant NCTA – The Internet & Television Association.

Jeffrey A. Lamken, MoloLamken LLP, Washington, D.C., for Plaintiff-Appellant ACA Connects – America's Communications Association.

P. Patty Li (argued), Sarah E. Kurtz, and John D. Echeverria, Deputy Attorneys General; Paul Stein and Heather B. Hoesterey, Supervising Deputy Attorneys General; Joshua Patashnik, Deputy Solicitor General; Thomas S. Patterson, Senior Assistant Attorney General; Rob Bonta, Attorney General; Attorney General's Office, San Francisco, California; for Defendant-Appellee.

Corbin K. Barthold, Berin Szóka, and James Dunstan, TechFreedom, Washington, D.C., for Amicus Curiae TechFreedom.

Jeffrey M. Harris, Bryan Weir, and Tiffany H. Bates, Consovoy McCarthy PLLC, Arlington, Virginia; Tara S. Morrissey and Paul V. Lettow, U.S Chamber Litigation Center; for Amici Curiae Chamber of Commerce of the United States of America, California Chamber of Commerce, Small Business & Entrepreneurship Council, Telecommunications Industry Association, and CALinnovates.

Brian R. Hardy and Kathleen A. Wilde, Marquis Aurbach Coffing, Las Vegas, Nevada, for Amicus Curiae International Center for Law & Economics.

Christopher S. Yoo, University of Pennsylvania Carey Law School Transnational Legal Clinic, Philadelphia, Pennsylvania, pro se Amicus Curiae.

Kevin K. Russell, Goldstein & Russell PC, Bethesda, Maryland, for Amici Curiae Professors of Communications Law, and Media Democracy Fund.

Corynne McSherry and Kit Walsh, Electronic Frontier Foundation, San Francisco, California; Jacob A. Snow, ACLU Foundation of Northern California, San Francisco, California; Melissa Goodman and Zoe McKinney, ACLU Foundation of Southern California, Los Angeles, California; Andrew Jay Schwartzman, Benton Institute for Broadband & Society, Washington, D.C.; for Amici Curiae Electronic Frontier Foundation, ACLU Foundation of Northern California, ACLU Foundation of Southern California, Access Humboldt, Benton Institute for Broadband & Society, Clean Money Campaign, Fight for the Future, Greenling Institute, iFixit Inc., Media Justice, National Hispanic Media Coalition,

Oakland Privacy, Reddit Inc., Turn—The Utility Reform Network, and Writers Guild of America, West, Inc.

Letitia James, Attorney General; Barbara D. Underwood, Solicitor General; Steven C. Wu, Deputy Solicitor General; Office of the Attorney General, New York, New York; William Tong, Attorney General, Hartford, Connecticut; Kathleen Jennings, Attorney General, Wilmington, Delaware; Clare E. Connors, Attorney General, Honolulu, Hawai'i; Kwame Raoul, Attorney General, Chicago, Illinois; Aaron M. Frey, Attorney General, Augusta, Maine; Brian E. Frosh, Attorney General, Baltimore, Maryland; Maura Healey, Attorney General, Boston, Massachusetts; Dana Nessel, Attorney General, Lansing, Michigan; Keith Ellison, Attorney General, Saint Paul, Minnesota; Gurbir S. Grewal, Attorney General, Trenton, New Jersey; Hector Balderas, Attorney General, Santa Fe, New Mexico; Ellen F. Rosenblum, Attorney General, Salem, Oregon; Josh Shapiro, Attorney General, Harrisburg, Pennsylvania; Peter F. Neronha, Providence, Rhode Island; Thomas J. Donovan Jr., Attorney General, Montpelier, Vermont; Robert W. Ferguson, Attorney General, Olympia, Washington; Joshua Kaul, Attorney General, Madison, Wisconsin; Karl A. Racine, Attorney General, Washington, D.C.; for Amici Curiae States of New York, Connecticut, Delaware, Hawai'i, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, Wisconsin, and District of Columbia.

James R. Williams, County Counsel; Greta S. Hansen, Chief Assistant County Counsel; Raphael N. Rajendra and Meredith A. Johnson, Deputy County Counsel; Office of the County Counsel, San Jose, California; for Amici Curiae County of Santa Clara and Six Additional Local Governments.

Phillip R. Malone, Juelsgaard Intellectual Property and Innovation Clinic, Mills Legal Clinic at Stanford Law School, Stanford, California; Michael J. Burstein, New York, New York; for Amici Curiae Internet Law Professors.

Thomas H. Vidal, Pryor Cashman LLP, Los Angeles, California, for Amici Curiae Access Now, Mozilla Corp., Public Knowledge, New America's Open Technology Institute, and Free Press.

OPINION

SCHROEDER, Circuit Judge:

Overview

For the broadband internet industry, the critical regulatory issues that have emerged so far in this century concern access to the internet: what entities have access, on what terms, and to what extent access should be regulated. The administrative enthusiasm of the Federal Communications Commission ("FCC") has seemingly ebbed and flowed with the political tides, culminating most recently in its 2018 decision to stop treating broadband services as "telecommunications services" subject to relatively comprehensive, common-carrier regulation pursuant to Title II of the Communications Act, and to classify them instead under Title I as lightly regulated "information services." *In the Matter of Restoring Internet Freedom*, 33 FCC Rcd. 311 (2018) ("2018 Order").

This 2018 Order had the significant result of terminating federal regulation intended to protect equal access to the internet, popularly known as "net neutrality" rules. This in

turn has raised immediate questions about the extent of states' authority in the field. In this appeal, we consider the broadband industry's contention that, when the FCC reclassified broadband services under Title I, thereby abandoning its regulatory authority with respect to net neutrality, California was preempted from stepping into the breach to enact its own net neutrality protections.

Plaintiffs-Appellants are a group of industry trade associations representing communications service providers ("service providers") who sought an injunction to prevent the California Attorney General from enforcing the California Internet Consumer Protection and Net Neutrality Act of 2018 ("SB-822"). Cal. Stats. 2018, ch. 976. This state law, in essence, codified the rescinded federal net neutrality rules, but limits its application to broadband internet services provided to customers in California. The district court ruled in favor of California and denied the service providers' request for a preliminary injunction to block enforcement of the statute. The district court concluded there was no preemption because the FCC lacked the requisite regulatory authority.

The district court's decision was in line with the D.C. Circuit's recent holding in *Mozilla Corp. v. F.C.C.*, 940 F.3d 1 (D.C. Cir. 2019) ("*Mozilla*"). The court in *Mozilla* reviewed the validity of the FCC's 2018 reclassification decision and an accompanying order preempting state net neutrality rules. The court upheld the reclassification, but struck down the preemption order. *Id.* at 18. The critical issue with respect to preemption was whether the FCC retained the statutory authority to adopt federal net neutrality rules after its decision to reclassify broadband internet services under Title I of the Communications Act. The D.C.

Circuit held that, under Title I, the FCC did not have the authority to regulate broadband services in this manner, and because federal regulatory authority is a prerequisite to preemption, the FCC could not expressly preempt the states. *See id*. at 74–76.

The service providers here nevertheless contend that the California statute is preempted on the basis of both conflict and field preemption. They argue first that SB-822 is preempted because it conflicts with the policy underlying the FCC's reclassification decision; that policy was to eliminate all net neutrality regulation of broadband services, not to replace federal regulations with what could become a checkerboard of state regulations. The service providers additionally contend that SB-822 is preempted because it conflicts with the Communications Act itself and its limitations on federal regulation. They argue as well that even if there is no preemption by virtue of any identifiable conflict, federal law occupies the field of interstate services and therefore preempts state laws regulating intrastate services that intrude upon the field of interstate services.

We conclude the district court correctly denied the preliminary injunction. This is because only the invocation of federal regulatory authority can preempt state regulatory authority. As the D.C. Circuit held in *Mozilla*, by classifying broadband internet services as information services, the FCC no longer has the authority to regulate in the same manner that it had when these services were classified as telecommunications services. *See id*. at 75–76. The agency, therefore, cannot preempt state action, like SB-822, that protects net neutrality. *See id*. at 18. Without the authority to preempt, it does not much matter whether SB-822 conflicts with the federal policy objectives underlying the

reclassification decision. And SB-822 does not conflict with the Communications Act itself, which only limits the FCC's regulatory authority. As to the service providers' field preemption argument, Supreme Court authority, the case law of this circuit, and various provisions of the Communications Act itself all foreclose that argument.

The stakes in this case are high for the industry and consumers. We have been aided in our study of the issues with briefs submitted by a multitude of amici curiae, including state and local governments, trade associations, advocacy groups, and law professors. In order to adequately explain the background of this case and the legal issues before us, we first provide a brief introduction to the concept of net neutrality and the recent history of FCC regulations pertaining to it.

An Introduction to Net Neutrality

At its most fundamental level, the internet is a global network of interconnected cables providing the physical infrastructure that connects computers. Data travels along these cables from the computer seeking information to the computer that houses the information and back. To be considered broadband internet, data must download to a consumer's device at relatively high speeds. *See, e.g.*, Chris Woodford, *The Internet*, EXPLAINTHATSTUFF! (July 6, 2021), https://www.explainthatstuff.com/internet.html; Dave Johnson, *A Beginner's Guide to Broadband Internet, the Most Popular Type of Internet in the US*, INSIDER (April 2, 2021), https://www.businessinsider.com/what-is-broadband-internet.

Many of the plaintiffs-appellants in this case are broadband internet service providers, operating the cables that

take information from the global cable networks to the relevant computer. If the cables forming the internet were a highway, data would be the cars driving along that highway, and the internet service providers would build and maintain the exit ramps from the highway to consumers' homes and businesses. Accordingly, consumers must subscribe to a broadband internet service provider in order to connect to high-speed internet.

These broadband internet service providers control access to the internet. They can do so on the basis of the content of the information or the identity of the information's creator. This power of control has revenue creating potential. Providers have exercised that power in different ways, such as by blocking access altogether, slowing certain customer's access to the internet—commonly termed "throttling"—or prioritizing access to some content over others. The power to control access can therefore open the door for anti-competitive, discriminatory behavior that could disadvantage important segments of society. For illustration, the FCC has found that service providers engage in anti-competitive behavior when they block access to services that compete with their own. *See, e.g.*, *Madison River Communications, LLC, Consent Decree*, 20 FCC Rcd. 4295 (2005) (finding that a service provider blocked ports on its network that were used by competing services, resulting in a consent decree and fine).

Any federal authority to regulate the exercise of that control and safeguard equal access to the internet rests with the FCC. That agency regulates broadband internet services under the Communications Act, 47 U.S.C. § 151 *et seq*, and the amendments to the Act made by the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56. Under the

Communications Act, the FCC has the authority to classify broadband internet services as either a "telecommunications service" under Title II of the Act, 47 U.S.C. §§ 201–222, or an "information service" under Title I, 47 U.S.C. §§ 151–155.

The classification decision is key because it dictates the scope of the FCC's regulatory authority. The FCC has express, expansive authority to regulate Title II telecommunications services, but only a more limited "ancillary authority" with respect to Title I information services. *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 975–76 (2005) ("*Brand X*"). Pursuant to Title I, the FCC can only impose regulations ancillary or necessary to the effective performance of the FCC's specific statutory responsibilities. *See id.*; *see also People of State of California v. F.C.C.*, 905 F.2d 1217, 1240 n.35 (9th Cir. 1990) ("*California I*"); 47 U.S.C. §§ 151–155. If classified under the broad authority of Title II, telecommunications services are treated as common carriers, which triggers a multitude of statutory restrictions and requirements. *Brand X*, 545 U.S. at 975–76; *California I*, 905 F.2d at 1240 n.35; 47 U.S.C. §§ 201–222.

Under Title II, the FCC can regulate broadband internet services to ensure what has come to be known as "net neutrality," by adopting regulations making it illegal for service providers to engage in blocking, throttling, and prioritization for payment or to benefit an affiliate. *See U.S. Telecom Ass'n v. F.C.C.*, 825 F.3d 674, 689 (D.C. Cir. 2016) (upholding *In the Matter of Protecting and Promoting the Open Internet*, 30 FCC Rcd. 5601 (2015) ("2015 Order")). Such regulation imposes costs that critics have argued would threaten to stifle investment and innovation, 2018 Order ¶¶ 2, 4, and which supporters have contended are required to

ensure open internet access along with broadband investment and deployment, 2015 Order, ¶¶ 8, 11.

The upshot of the controversy is that net neutrality rules have had an off-again, on-again history. Prior to 2015, the FCC classified broadband internet as an information service under Title I, and the agency's efforts to impose net neutrality rules were repeatedly struck down as outside the regulatory authority of that Title. *See, e.g.*, *Comcast Corp. v. F.C.C.*, 600 F.3d 642, 644 (D.C. Cir. 2010); *Verizon v. F.C.C.*, 740 F.3d 623, 628 (D.C. Cir. 2014). In 2015, the FCC reclassified broadband as a Title II, telecommunications service and adopted net neutrality rules which the D.C. Circuit upheld. *U.S. Telecom Ass'n*, 825 F.3d at 689, 733.

Six months after that decision, however, a new administration took office and brought with it different attitudes towards net neutrality. In 2018, the FCC reverted to the Title I classification and rescinded the net neutrality rules, a decision that ultimately gave rise to this litigation. 2018 Order ¶¶ 2, 4, 65. The FCC reasoned that the net neutrality rules were too expensive and that the costs of the rules outweighed their benefits. *Id.* at ¶¶ 2, 4. Instead, the FCC adopted a "Transparency Rule" calling for broadband service providers to disclose practices that block, throttle, or prioritize internet traffic for payment or to benefit an affiliate. *See* 2018 Order ¶¶ 3, 215–231. These actions benefitted internet service providers, at least in part because the Transparency Rule lowered their compliance costs. *See, e.g.*, David Shepardson, *U.S. Defends FCC's Repeal of Net Neutrality Rules*, Reuters, Oct. 12, 2018.

At the same time, in an effort to preclude state action, the FCC announced a "Preemption Directive," which purported

to preempt "any state or local requirements that are inconsistent with the federal deregulatory approach," 2018 Order ¶ 194, including "any state or local measures that would effectively impose rules or requirements that [the Order] repealed," 2018 Order ¶ 195. The Preemption Directive also benefitted the service providers because it was aimed at preventing state regulations that would impose additional compliance costs.

In *Mozilla*, various states and consumer groups challenged the Reclassification Order and accompanying Preemption Directive. The D.C. Circuit upheld the reclassification, considering itself bound by the Supreme Court's decision in *Brand X*, 545 U.S. at 19. *Mozilla*, 940 F.3d. at 18–19. Because the Supreme Court had made it clear in *Brand X* that the Communications Act affords the FCC the discretion to classify broadband services, the D.C. Circuit upheld the classification under Title I as reasonable. *See id.* at 18–20, 87.

Two judges in *Mozilla* nevertheless expressed considerable reservations about their holding, because the nature of broadband services had changed substantially since *Brand X* was decided. *See id.* at 18–20; *see also id*. at 86–87 (Millett, J. concurring); *Id.* at 94–95 (Wilkins, J. concurring). Judge Millett explained in her concurrence that, at the time *Brand X* was decided, consumers used service providers chiefly to gain access to information services like domain name services and caching. *See id.* at 87. Today, these information services no longer occupy the same significance that they once did. *See id.* While the judges felt their hands were tied by *Brand X*, they suggested that it is no longer accurate to rely on domain name services and caching to

determine the legal status of broadband services. *See id*. at 88–90, 94–95.

Although it upheld the reclassification to Title I, the court in *Mozilla* vacated the Preemption Directive. *Id.* at 74. The court explained that the FCC may only preempt state law, as the Preemption Directive purported to do, if the agency is acting within the scope of its congressionally delegated authority to regulate. *Id.* at 74–75 (citing *Louisiana Pub. Serv. Comm'n v. F.C.C.*, 476 U.S. 355, 374 (1986) ("*Louisiana*")). By reclassifying broadband as a Title I information service, the FCC stripped itself of the requisite regulatory authority and, accordingly, of the preemptive authority to displace state laws. *See id.* at 74–76.

Background of this Litigation

In the immediate wake of the FCC's 2018 decision, but before the D.C. Circuit's *Mozilla* decision, California adopted SB-822. This state law does what the Preemption Directive was intended to prevent: it essentially codifies the FCC's 2015 net neutrality rules, *Compare* Cal. Civ. Code § 3101(a)(1)–(2), (4), (7)(A) *with* 2015 Order ¶¶ 15–16, 18, 21, although it applies only to broadband internet services provided to customers in California. Cal. Civ. Code § 3100(b), (k). Additionally, SB-822 contains a disclosure measure similar to the FCC's 2018 Transparency Rule. *Compare* Cal. Civ. Code § 3101(a)(8) *with* 47 C.F.R. § 8.1(a).

California was one of the many plaintiffs in the *Mozilla* litigation challenging the FCC's 2018 decision. *See Mozilla*, 940 F.3d at 13, 17. Before the D.C. Circuit could decide that case, the service providers filed this action in the District Court for the Eastern District of California, challenging SB-

822. They requested declaratory and injunctive relief, including a preliminary injunction preventing California from enforcing SB-822. The United States filed a separate action alleging similar claims. The two cases were later combined. By agreement of the parties, this litigation was stayed during the pendency of *Mozilla*.

In 2019, the D.C. Circuit issued its opinion in *Mozilla* vacating the Preemption Directive. *See Mozilla*, 940 F.3d at 74–76. The D.C. Circuit held that the FCC could not preempt the states from regulating broadband services because, after reclassification, the FCC did not have the underlying authority to regulate broadband, and therefore could not preempt states from doing so. *See id*. at 18, 74–76. The *Mozilla* decision is important to our decision here. Not only did the parties agree to stay this case while *Mozilla* was pending, but none of the parties now challenge the correctness or finality of the D.C. Circuit's opinion. Following the conclusion of the *Mozilla* litigation in October 2019, and after the 2020 election resulted in a new administration, the United States withdrew as a plaintiff in this case.

After hearing extensive argument on the effect of the *Mozilla* decision, the district court, in a ruling from the bench, denied a preliminary injunction to block enforcement of the California statute. The court explained its decision with reasoning similar to that underlying the D.C. Circuit's decision in *Mozilla* which had vacated the Preemption Directive. The district court held that the FCC, after the reclassification decision, lacked the regulatory authority to preempt SB-822.

This appeal followed. To succeed in obtaining a preliminary injunction, the service providers must establish that they are likely to succeed on the merits, they are likely to suffer irreparable harm in the absence of preliminary relief, the balance of the equities supports the motion for a preliminary injunction, and an injunction is in the public interest. *Stormans, Inc. v. Selecky*, 586 F.3d 1109, 1127 (9th Cir. 2009) (citing *Winter v. N.R.D.C., Inc.*, 555 U.S. 7, 20 (2008). If the service providers fail to demonstrate that they are likely to succeed on the merits, this court need not consider the remaining factors. *See DISH Network Corp. v. F.C.C.*, 653 F.3d 771, 776–77 (9th Cir. 2011).

On the merits, the service providers do not dispute that, under Title I, the FCC now lacks the regulatory authority to promulgate net neutrality rules. Their principal contentions are that the California statute is nevertheless preempted because it conflicts with both the purpose underlying the FCC's reclassification decision and with the Communications Act itself. They also argue that the FCC occupies the entire field of interstate communications services to the exclusion of the states. We are guided by the D.C. Circuit's decision in *Mozilla* as to the scope of the FCC's regulatory and preemptive authority after the 2018 reclassification.

I. The California Statute Does Not Conflict With the FCC's Reclassification of Broadband Services Under Title I

Resolution of the question of conflict preemption in this case involves a straightforward application of federal preemption principles. The service providers argue that the FCC's 2018 reclassification of broadband services as Title I information services, which eliminated the federal net

neutrality rules promulgated under Title II, preempts state net neutrality rules. They essentially contend that the state regulation conflicts with the absence of federal regulation. A fundamental principle of preemption, however, is that an absence of federal regulation may preempt state law only if the federal agency has the statutory authority to regulate in the first place. *Louisiana*, 476 U.S. at 374. The D.C. Circuit applied this principle when it vacated the FCC's Preemption Directive, as it recognized that the FCC does not have the authority to adopt federal net neutrality rules and is therefore unable to preempt such state regulation. *See Mozilla*, 940 F.3d at 74–76. Neither party challenges the validity or finality of *Mozilla*, so we look to the D.C. Circuit's analysis to guide our own.

Underlying the *Mozilla* decision are principles laid down by the Supreme Court relating to an agency's regulatory and preemptive authority. When a federal agency pursues a policy of non-regulation, as the FCC was doing in its 2018 Order, the Supreme Court has recognized that the agency can preempt the states from exercising regulatory authority only when the agency has chosen not to exercise its full authority. *See Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 178 (1978).

In *Ray*, Congress had granted the Secretary of Transportation broad authority to regulate the "vessel size and speed limitations" of tankers traveling in Puget Sound. *Id.* at 174. The Secretary chose not to ban large tankers although it had the authority to do so. *Id.* at 174–75. The Supreme Court held that, because the Secretary had the authority to ban large tankers, its decision not to implement such a ban preempted the states from doing so. *Id.* at 178.

The service providers in this case urge us to rely on *Ray*. What happened in *Ray*, however, is not what happened here. By reclassifying broadband services under Title I, the FCC gave up its authority to regulate broadband services as common carriers and hence surrendered the authority it had to adopt federal net neutrality rules.

This case is thus more like the situation in *Louisiana* where the Court held that a federal agency may not preempt state regulation when the agency itself does not have regulatory authority. *See* 476 U.S. at 374. At issue in *Louisiana* was whether state regulation of intrastate depreciation rates was preempted where Congress had not given the federal agency authority to regulate those rates. *See id*. at 358–59. The FCC in *Louisiana*, to further its national policy of increasing competition in the telephone services industry, attempted to preempt state regulators who refused to accept this national policy. *Id*. Accordingly, the FCC issued two orders that changed depreciation practices affecting telephone company facilities, asserting that these orders would preclude state regulators from using their own depreciation procedures for intrastate rate-making purposes. *Id.* at 360–62. But the Supreme Court explained that the Communications Act expressly denies the FCC the power to preempt state regulation of intrastate rates. *Id.* at 373. Accordingly, the Supreme Court held that the FCC could not preempt state regulation. *See id.* at 374–75. Without the power to act, a federal agency can not preempt. *Id.* at 374. We conclude that principle applies here. The FCC can not preempt SB-822 because it gave up its full regulatory authority by reclassifying broadband as a Title I information service.

This is in accord with the D.C. Circuit's decision in *Mozilla*. It followed the principles articulated in *Ray* and *Louisiana* when it vacated the FCC's "Preemption Directive" that accompanied the "Reclassification Order." The Preemption Directive had declared as preempted "any state or local requirements that are inconsistent with [the Order's] deregulatory approach," 2018 Order ¶ 194, including "any state or local measures that would effectively impose rules or requirements that [the Reclassification Order] repealed," 2018 Order ¶ 195. But unlike the situation in *Ray* where the federal agency retained its regulatory authority and the state was preempted, 435 U.S. at 178, the Preemption Directive did not rest on any regulatory authority. By reclassifying broadband as an information service, the FCC surrendered its authority to regulate with respect to net neutrality. And just as in *Louisiana*, where a federal agency was unable to preempt state law without the authority to regulate, 476 U.S. at 374–75, the Preemption Directive exceeded the FCC's Title I statutory authority to regulate broadband and, therefore, exceeded its authority to preempt state regulation. *See Mozilla*, 940 F.3d at 74–76.

The service providers try to avoid the effect of reclassification to Title I by arguing that the decision was not an abdication of authority but an exercise of discretion under the statute as to the appropriate classification of communications services. The service providers are correct that the 2018 decision was an exercise of statutory authority to make a classification decision, but they fail to acknowledge that the effect of that decision was to eliminate the agency's authority to impose net neutrality rules.

Indeed, the FCC itself has acknowledged that it did away with the statutory authority to adopt net neutrality rules when

it reclassified broadband internet services as information services under Title I. It said as much in the Reclassification Order. *See, e.g.*, 2018 Order ¶ 267 (finding after reclassification no "source[] of statutory authority that individually or in the aggregate" supports net neutrality conduct rules). This conclusion had experience behind it. The FCC tried unsuccessfully to adopt net neutrality rules under Title I several times in the early 2000s and was unable to do so until broadband services were reclassified as a telecommunications service under Title II in 2015. *See U.S. Telecom Ass'n*, 825 F.3d at 689. The FCC knew that its reclassification decision in 2018 stripped the FCC of its authority to adopt federal net neutrality rules, and the D.C. Circuit held it also stripped it of its power to preempt. *See Mozilla*, 940 F.3d at 74–76; *see also Louisiana*, 476 U.S. at 374–75. Accordingly, there can be no preemption of the California statute as a result of the Reclassification Order.

The service providers point instead to the reasons for the reclassification to contend that the FCC's policy goals underlying the reclassification decision have preemptive effect. They point out that the FCC made the reclassification decision in reliance on its policy judgment that a light-touch regulatory framework would be most effective. They contend that, because the D.C. Circuit upheld these policy-based grounds for the FCC's decision, the FCC's policy behind the decision forms a valid predicate for conflict preemption.

Yet the Supreme Court has expressly rejected the argument that an agency's policy preferences can preempt state action in the absence of federal statutory regulatory authority. *See Louisiana*, 476 U.S. at 374–75. The Supreme Court warned that to permit preemption on the basis of policy rather than legislation would allow a federal agency to confer

power upon itself and override the power of Congress. *Id.* As the Supreme Court said, "[t]his we are both unwilling and unable to do." *Id.* at 375.

The service providers also suggest that the FCC's policy choice should have preemptive effect by way of a novel interpretation of *Chevron U.S.A., Inc. v. N.R.D.C.*, 467 U.S. 837 (1984) ("*Chevron*"). *Chevron* lays out a two-step analysis to decide when courts should defer to an agency's interpretation of a statute. *Id.* at 842–43. The first step is to determine whether a statute is ambiguous. *Id.* If the court finds any ambiguity, the court presumes that Congress intended to delegate to the agency the authority to resolve the ambiguity, relying on its expert policy judgment. *Id.* at 842–44. In the second step, the court determines if the agency has chosen a reasonable interpretation. *Id.*

The service providers point to the premise of *Chevron*—that Congress delegated to agencies the authority to interpret ambiguous statutory language through the exercise of agencies' reasoned policy judgment—to argue that the FCC's deregulatory policy preferences are somehow binding on the states.

The D.C. Circuit, however, strenuously rejected this attempt to turn the authority to make statutory choices under *Chevron* into an engine for preemption. *See Mozilla*, 940 F.3d at 82–85. The court explained that the discretion to classify a communications service under federal law does not permit the FCC to impose upon the states the policy preferences underlying that definitional choice. *See id.* As the D.C. Circuit explained,

> [This] theory of *Chevron* preemption, in other words, takes the discretion to decide which definition best fits a real-world communications service and attempts to turn that subsidiary judgment into a license to reorder the entire statutory scheme to enforce an overarching "nationwide regime" that enforces the policy preference underlying the definitional choice. Nothing in *Chevron* goes that far.

Id. at 84 (internal citations omitted). Therefore, notwithstanding the FCC's power under *Chevron* to take into account policy judgments about the benefits of a "light-touch" regulatory approach when making the decision to classify broadband services under Title I, such policy preferences are not a source of the statutory authority required to regulate or to preempt. *See id*. at 82–85. As the D.C. Circuit said, "[n]o matter how desirous of protecting their policy judgments, agency officials cannot invest themselves with power that Congress has not conferred. And nothing in *Chevron* rewrites or erases plain statutory text." *Id.* at 83 (internal citations omitted).

In spite of the D.C. Circuit's conclusion, the service providers go on to contend that this court has already decided the preemption issue in its favor. They point to our decision in *People of State of California v. F.C.C.*, 39 F.3d 919, 931–32 (9th Cir. 1994) ("*California*"), where we recognized some limited preemptive authority under Title I when state regulation would make it impossible for federal regulatory measures to take effect. That principle is not applicable here, because the FCC has adopted no relevant regulatory measures.

California arose at a time of unusual regulatory activity that preceded the advent of the internet and followed the break-up of AT&T. The break-up resulted in the creation of Regional Bell Operating Companies (BOCs) that could participate in the growing industry providing information services over telephone lines. *Id*. at 923–24. To prevent the BOCs from having a competitive advantage as a result of their control of these lines, the FCC had originally ordered the BOCs to structurally separate their telephone operations from the related services. *Id.* In 1986, however, the FCC determined that actual structural separation was not necessary and that less stringent, and less costly, measures could serve the same purpose. *Id.* at 924. When it eliminated the structural separation requirements and substituted less stringent measures, it also entered an order preempting any state from imposing more stringent measures, as, for example, structural separation. *Id.* at 931.

States, not surprisingly, challenged the preemption order, contending that the FCC, per the Supreme Court's decision in *Louisiana*, had no preemptive authority when acting pursuant to Title I. *Id.* at 932. We held that our own decisions had recognized an "impossibility" exception to allow the FCC to preempt state measures that would be inconsistent with lawful federal regulation. *Id.* at 931. Since the federal regulation allowed the enhanced services to be provided on an integrated basis, but BOC's compliance with state regulations could result in structural separation, we upheld the limited preemptive order. *Id.* at 932–33. The situation was very similar to that in *Ray*, where the exercise of federal regulatory authority preempted inconsistent state measures. *Ray*, 435 U.S. at 178.

In this case, of course, the FCC has not adopted any regulatory measures. It has instead diminished its authority to regulate by its reclassification of the service providers to a relatively unregulated category under the Communications Act. There is thus no conflict between the state's enactment of SB-822 and the FCC's order. *California* is therefore in line with *Ray*, *Mozilla*, and our decision today. Without the underlying authority to regulate net neutrality under Title I, the FCC is without the authority to preempt California from doing so. *See Louisiana*, 476 U.S. at 374–75.

In a similar vein, we reject the service providers' argument about the FCC's disclosure requirements. The Reclassification Order was accompanied by disclosure requirements, known as a Transparency Rule. This Transparency Rule requires broadband providers to disclose practices that, for payment or to benefit an affiliate, block, throttle, or prioritize internet traffic. 2018 Order ¶¶ 3, 215. The service providers argue that because the D.C. Circuit upheld these disclosure requirements, they foreclose any other regulation of broadband services.

But the D.C. Circuit did not hold that the Transparency Rule had any effect on the states' ability to regulate net neutrality. *Mozilla* upheld the FCC's determination that a disclosure-based regime—without net neutrality rules—provided consumer protection. 940 F.3d at 46–49. The *Mozilla* court did not hold, however, that the FCC's decision displaced all state regulatory authority that went beyond the federal disclosure requirements. It construed the FCC's Title I preemption authority narrowly. *See id.* at 75–76, 82–85. The legal effect of the reclassification, and the adoption of the Transparency Rule, was to diminish federal regulatory authority. As a result, despite the FCC's policy

preference for a lightly-regulated broadband marketplace, the agency no longer had the requisite authority to adopt federal net neutrality rules and could not preempt states from adopting them. *See id*.

The district court correctly decided that the service providers are unlikely to succeed on the merits of their claim that SB-822 conflicts with the FCC's 2018 Order.

II. There Is No Conflict Between the California Statute and the Communications Act

The service providers' alternative position relates to the Communications Act itself. They contend that the California statute conflicts with the text of two provisions of the Communications Act. 47 U.S.C. §§ 153(51), 332(c)(2). According to the service providers, these provisions limit the states' ability to regulate broadband services. The provisions, however, do not support this theory.

Section 153(51) is located in the Communication Act's lengthy list of definitions. This section defines a "telecommunications carrier" and it further provides that a "telecommunications carrier shall be treated as a common carrier *under this chapter* only to the extent that it is engaged in providing telecommunications services." 47 U.S.C. § 153(51) (emphasis added).

Section 332 pertains to mobile broadband, which is the high-speed internet access delivered to cell phones and other mobile devices. For mobile broadband, there is a dual classification system that is similar to the classification system for telecommunications and information services. A "commercial mobile service" is subject to common carrier

status and a "private mobile service" is not. 47 U.S.C. §§ 332(c)(1)–(2). Section 332(c)(2), defines "private mobile services," stating in relevant part that "[a] person engaged in the provision of a service that is a private mobile service shall not, insofar as that person is so engaged, be treated as a common carrier for any purpose *under this chapter*." 47 U.S.C. § 332(c)(2) (emphasis added).

The service providers urge that Sections 153(51) and 332(c)(2) mean that states may not subject information services and private mobile services to any type of regulation that, under federal law, could be imposed only on common-carriers. They contend that these provisions limiting the FCC's regulatory authority also limits the states' authority. They do not.

The text of each provision defines and limits only the FCC's regulatory authority and makes no mention of the states' authority to regulate. 47 U.S.C. §§ 153(51), 332(c)(2). The provisions explicitly state that they are defining the extent of FCC regulation under "this chapter," meaning Chapter 5 of the Communications act, and do not mention, let alone defend or displace, the regulatory authority of the states. The two provisions thus prevent the FCC itself, and not the states, from imposing common carrier regulations on either information services or private mobile services.

Indeed, the D.C. Circuit in *Mozilla* held that Section 153(51) is a limitation on the FCC's regulatory authority and does not affect the states' authority. *Mozilla*, 940 F.3d at 79. There, the FCC had argued that the section provided the agency with the requisite source of regulatory authority to support its Preemption Directive against state regulation. *Id.* at 79. But the D.C. Circuit quickly disposed of this argument.

See id. Looking to the text of Section 153(51), the court said that this provision could not be a source of regulatory authority because it is a limitation on the FCC's authority. *Id.* The court also observed that Congress would not hide such an expansive source of regulatory and preemptive authority in this part of the statute. *Id.* As the D.C. Circuit said:

> It also would make no sense for Congress to bury the enormously far-reaching and consequential authority to override every single State's *statutorily conferred* power to regulate intrastate communications deep within a list of fifty-nine definitions in a non-regulatory portion of the statute, and then articulate the relevant definition as a *restriction* of the Commission's power.

Id. We follow the D.C. Circuit's well-reasoned decision. Here, the service providers cannot stretch a provision limiting the FCC's power to regulate common carriers into an overarching grant of preemptive power over the states' authority to regulate net neutrality. *See id.*

Other provisions of the statute demonstrate that Congress knew how to preempt state authority when it wanted to. The Communications Act contains numerous express preemption provisions. *See, e.g.*, 47 U.S.C. §§ 223(f)(2), 230(e)(3) ("No cause of action may be brought and no liability may be imposed under any State or local law that is inconsistent with this section"), 253(a), 253(d) ("If . . . the Commission determines that a State or local government has permitted or imposed any statute . . . that violates subsection (a) or (b), the Commission shall preempt the enforcement of such statute . . . to the extent necessary to correct such violation or

inconsistency."), 332(c)(3) ("State Preemption . . . [n]otwithstanding sections 152(b) and 221(b) of this title, no State or local government shall have the authority to regulate the entry of or the rates charged by any commercial mobile service or any private mobile service . . . "). Sections 153(51) and 332(c)(2) contain no such express preemption provisions. We should understand from the omission that Congress did not intend Sections 153(51) and 332(c)(2) to have preemptive effect.

If there were any remaining doubt, the Savings Provision in Section 601(c)(1) of the Telecommunications Act provides even more evidence that Section 153(51) was not intended to limit the states' authority. *See* Telecommunications Act of 1996, Pub. L. No. 104-104, § 601(c)(1), 101 Stat. 56, 143 (1996), *reprinted in* 47 U.S.C. § 152 note. The Savings Provision says "[t]his Act and the amendments made by this Act shall not be construed to modify, impair, or supersede Federal, State, or local law unless *expressly* so provided in such Act or amendments." *Id*. (emphasis added). Because the 1996 Amendments added Section 153(51) to the Communications Act, and Section 153(51) contains no express statement of preemption, the Savings Provision precludes any inference of preemptive intent. *See* Telecommunications Act of 1996, § 153(49). Therefore, the service providers cannot successfully maintain that the California statute conflicts with the Communications Act.

III. The California Statute Does Not Impermissibly Touch on the Field of Interstate Communications

Even in the absence of an express conflicting Congressional command, a state law may be preempted when

federal law so thoroughly occupies a legislative field as to demonstrate Congressional intent to exclude all state law. *See*, *e.g.*, *Arizona v. United States*, 567 U.S. 387, 399 (2012). In this appeal, the service providers argue that the field of interstate communications services is exclusively federal and that SB-822 therefore impermissibly regulates in that field.

SB-822 limits its application, however, to broadband internet access services "provided to customers in California" and to internet service providers that "provide[] broadband Internet access service to an individual, corporation, government, or other customer in California." Cal. Civ. Code § 3100(b), (k). In *Greater Los Angeles Agency on Deafness, Inc. v. Cable News Network, Inc.*, 742 F.3d 414, 433 (9th Cir. 2014) ("*GLAAD*"), we reviewed an analogous California statute that regulated online content only when it was accessed by California viewers. *Id.* at 433. We held that such state regulation of internet services does not have the practical effect of regulating wholly interstate conduct. *See id*.

The service providers nevertheless resort to Section 152 of the Communications Act to argue that any state regulation of intrastate communications that touches on interstate communications, such as SB-822, impermissibly regulates in that field. 47 U.S.C. § 152. But Section 152 merely excludes the FCC from regulation of intrastate communications. It states in relevant part that "[t]he provisions of this chapter shall apply to all interstate and foreign communication" except that "nothing in this chapter shall be construed to apply or to give the Commission jurisdiction with respect to . . . intrastate communication service." 47 U.S.C. § 152.

The service providers also point to a statement by the Supreme Court interpreting Section 152 as affording the FCC "plenary authority" over interstate communications. *Louisiana*, 476 U.S. at 360. They ask us to conclude that state regulations may not touch on interstate communications. Yet the division of regulatory authority is not so simple and *Louisiana* does not go so far. The *Louisiana* Court rejected any interpretation of the Communications Act that would neatly divide power between federal and state authority. *See id.* The Supreme Court said in reference to Section 152:

> while the Act would seem to divide the world into two hemispheres—one comprised of interstate service, over which the FCC would have plenary authority, and the other made up of intrastate service, over which the States would retain exclusive jurisdiction—in practice, the realities of technology and economics belie such a clean parceling of responsibility. This is so because virtually all telephone plant that is used to provide intrastate service is also used to provide interstate service, and is thus conceivably within the jurisdiction of both state and federal authorities. Moreover, because the same carriers provide both interstate and intrastate service, actions taken by federal and state regulators within their respective domains necessarily affect the general financial health of those carriers, and hence their ability to provide service, in the other "hemisphere."

Id. Contrary to the service providers' contention, the *Louisiana* Court described the Communications Act as establishing dual state and federal regulatory authority. *Id.* at 375; *see also Mozilla*, 940 F.3d at 81 (noting "the Communications Act's vision of dual federal-state authority and cooperation").

Indeed, we have previously rejected field preemption arguments that are similar to those made on this appeal. In *GLAAD*, the plaintiff, the Cable News Network, Inc. ("CNN"), argued that the Telecommunications Act as amended by the Twenty-First Century Communications and Video Accessibility Act, occupied the legislative field of closed captioning of videos on the internet. 742 F.3d at 428–29. Accordingly, CNN contended that a California state law that regulated the closed captioning of CNN's online videos impermissibly entered that field. *See id.* at 428–29, 433. We held that Congress did not preempt the field of closed captioning, principally because the FCC had left room for state laws to supplement the federal regulatory scheme. *See id.* at 428–29.

Similarly, in the field of interstate broadband services, states have taken advantage of the space left for state laws to supplement the federal scheme. There are many illustrations cited by states in amici briefs. For example, Maine, Nevada, and Minnesota have all regulated broadband providers by enacting laws requiring them to obtain permission from consumers before sharing the consumers' data. *See* 35-A Me. Rev. Stat. Ann. § 9301; Minn. Stat. § 325M.01 et seq.; Nev. Rev. Stat. § 205.498. And the FCC itself recently acknowledged the states' role in, among other things, policing fraud, taxation, general commercial dealings, and enforcing fair business practices in the field of interstate broadband

services. 2018 Order ¶ 196. Accordingly, the realities of today show a dual-system of regulation that refutes the service providers' argument.

The Communications Act itself reflects a federal scheme that leaves room for state regulation that may touch on interstate services. For example, Section 253, which removes barriers to entry to the interstate and intrastate telecommunications industry, expressly preserves a role for states to protect consumer rights in this field. 47 U.S.C. § 253(a), (b). The express preemption provisions located throughout the Communications Act are predicated on the assumption that states otherwise would have concurrent authority to regulate interstate services. To illustrate, Section 253(a) provides that "[n]o State or local statute or regulation . . . may prohibit . . . the ability of any entity to provide any interstate or intrastate telecommunications service." 47 U.S.C. § 253(a). If Congress had intended the Communications Act to preempt state regulation touching on any interstate communications, there would be no need for any express preemption provisions.

As the Supreme Court said in *Louisiana*, the argument that states' regulatory authority "should be confined to intrastate matters which are separable from and do not substantially affect interstate communication . . . misrepresents the statutory scheme . . ." 476 U.S. at 373–74 (internal quotations omitted). The district court correctly concluded that the service providers are unlikely to prevail on their argument that SB-822 is field preempted by the Communications Act.

Conclusion

The judgment of the United States District Court for the District of Eastern California denying a preliminary injunction that would bar enforcement of SB-822 is **AFFIRMED**.

WALLACE, Circuit Judge, concurring:

I concur in the majority opinion. I write separately to express my concern that "in some cases, parties appeal orders granting or denying motions for preliminary injunctions in order to ascertain the views of the appellate court on the merits of the litigation." *Sports Form, Inc. v. United Press Int'l, Inc.*, 686 F.2d 750, 753 (9th Cir. 1982). Here, we are solely reviewing a denial of a preliminary injunction, *see* Opin. at 24, 33, and we thus can express no view on issues arising after a trial dealing with a permanent injunction. *See, e.g.*, *Ctr. for Biological Diversity v. Salazar*, 706 F.3d 1085, 1090 (9th Cir. 2013) ("We have repeatedly emphasized the preliminary nature of preliminary injunction appeals.").

I emphasize that appealing from a grant or a denial of a preliminary injunction to obtain an appellate court's view of the merits often leads to "unnecessary delay to the parties and inefficient use of judicial resources." *Sports Form*, 686 F.2d at 753. These appeals generally provide "little guidance" because "of the limited scope of our review of the law" and "because the fully developed factual record may be materially different from that initially before the district court." *Id*. Given the limitations of reviewing an order granting or denying a preliminary injunction, we have repeatedly

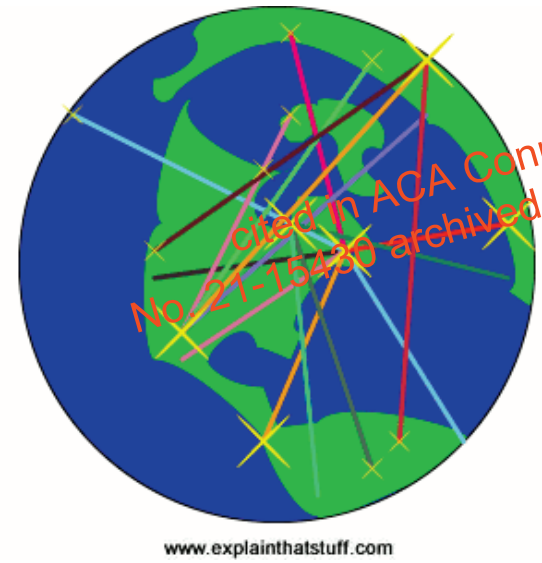
cautioned parties that a disposition of a preliminary injunction appeal is not an adjudication on the merits and that the parties should not "read too much into" such holdings. *Gregorio T. v. Wilson*, 59 F.3d 1002, 1005 (9th Cir. 1995).

We have also "repeatedly admonished district courts not to delay trial preparation to await an interim ruling on a preliminary injunction." *California v. Azar*, 911 F.3d 558, 583 (9th Cir. 2018). Here, the plaintiffs filed a renewed motion for a preliminary injunction on August 5, 2020. The district court denied the motion on February 23, 2021. The plaintiffs then filed a notice of appeal on March 9, 2021. Since then, it appears that there has been little progress in the case. Given the purported urgency of the case's resolution, the parties might "have been better served to pursue aggressively" their claims in the district court, "rather than apparently awaiting the outcome of this appeal" for nearly one year. *Id.* at 584 (citation omitted).

The Internet

by Chris Woodford. *Last updated: July 6, 2021.*

hen you chat to somebody on the Net or send them an e-mail, do you ever stop to think how many different computers you are using



W in the process? There's the computer on your own desk, of course, and another one at the other end where the other person is sitting, ready to communicate with you. But in between your two machines, making communication between them possible, there are probably about a dozen other computers bridging the gap. Collectively, all the world's linked-up computers are called **the Internet**. How do they talk to one another? Let's take a closer look!

Photo: What most of us think of as the Internet—Google, eBay, and all the rest of it—is actually the World Wide Web. The Internet is the underlying telecommunication network that makes the Web possible. If you use broadband, your computer is probably connected to the Internet all the time it's on.

Contents

What is the Internet?

Global communication is easy now thanks to an intricately linked worldwide computer network that we call the Internet. In less than 20 years, the Internet has expanded to link up around 230 different nations. Even some of the world's poorest developing nations are now connected.

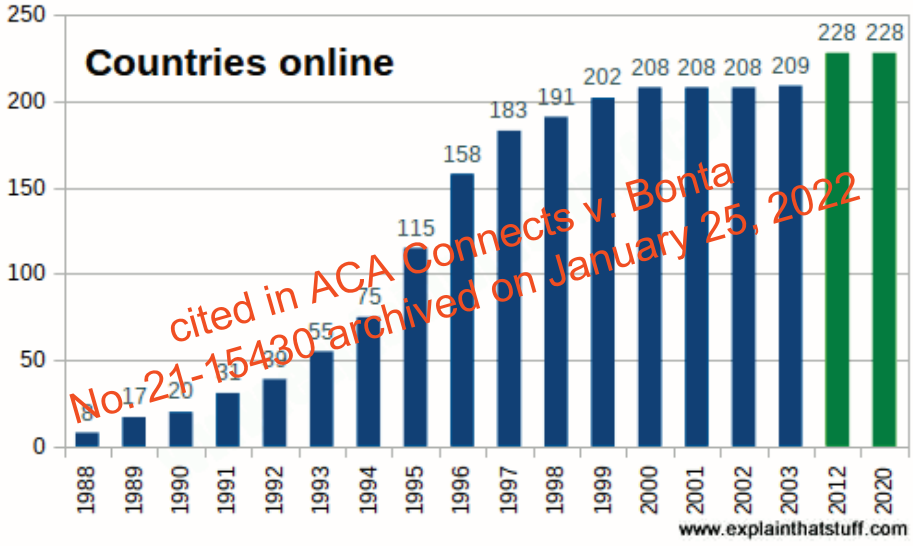
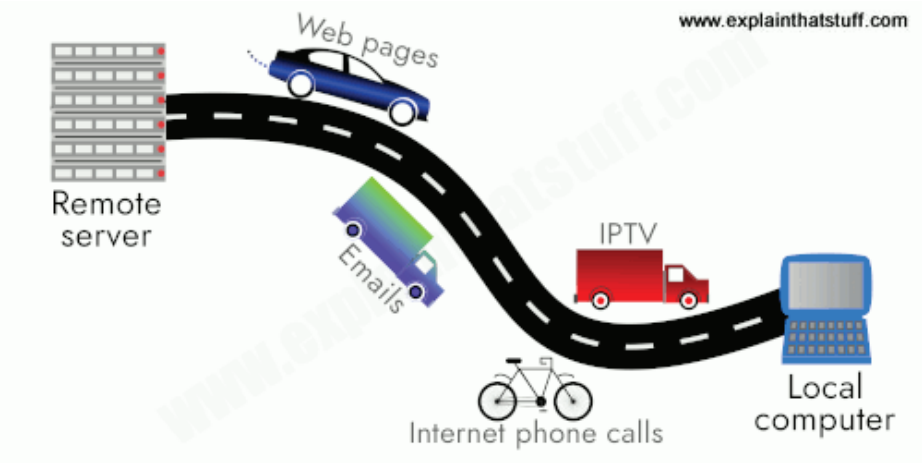


Chart: Countries online: In just over a decade, between 1988 and 2000, virtually every country in the world went online. Although most countries are now "wired," that doesn't mean everyone is online in all those countries, as you can see from the next chart, below. Source: Redrawn by Explainthatstuff.com using data from ITU World Telecommunication Development Report: Access Indicators for the Information Society: Summary, 2003 (blue bars, 1998–2003) and Percentage of Individuals using the Internet 2000–2019 [XLS spreadsheet format], International Telecommunications Union, 2021 (2012 and 2020, green bars).

Lots of people use the word "Internet" to mean going online. Actually, the "Internet" is nothing more than the basic computer network. Think of it like the telephone network or the network of highways that criss-cross the world. Telephones and highways are networks, just like the Internet. The things you say on the telephone and the traffic that travels down roads run on "top" of the basic network. In much the same way, things like the World Wide Web (the information pages we can browse online), instant messaging chat programs, MP3

music downloading, IPTV (TV streamed over the Internet), and file sharing are all things that run on top of the basic computer network that we call the Internet.



Artwork: "Information superhighway": The Internet is like a global road network on which many different kinds of traffic can travel. Much of it seems one way—from distant computers (servers) into your home—but in reality the traffic is always two-way.

The Internet is a collection of standalone computers (and computer networks in companies, schools, and colleges) all loosely linked together, mostly using the telephone network. The connections between the computers are a mixture of old-fashioned copper cables, fiber-optic cables (which send messages in pulses of light), wireless radio connections (which transmit information by radio. waves), and satellite links.

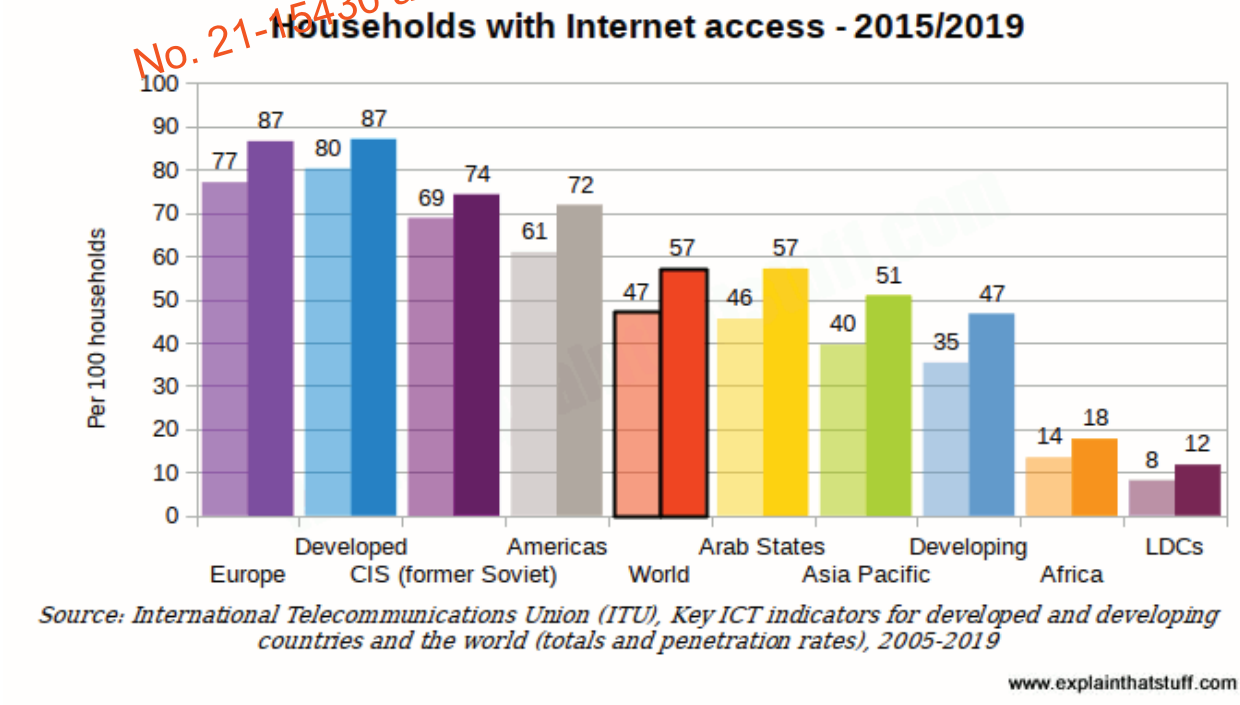


Chart: Internet use around the world: This chart compares the estimated percentage of households with Internet access for different world regions and economic groupings. For each region or grouping, the lighter bar on the left shows the percentage for 2015, while the darker bar shows 2019. Although there have clearly been dramatic improvements in all regions, there

are still great disparities between the "richer" nations and the "poorer" ones. The world average, shown by the black-outlined orange center bars, is still only 57 out of 100 (just over half). Not surprisingly, richer nations are well to the left of the average and poorer ones well to the right. Source: Percentage of Individuals using the Internet 2000–2019 [XLS spreadsheet format], International Telecommunications Union, 2020.

What does the Internet do?

The Internet has one very simple job: to move computerized information (known as **data**) from one place to another. That's it! The machines that make up the Internet treat all the information they handle in exactly the same way. In this respect, the Internet works a bit like the postal service. Letters are simply passed from one place to another, no matter who they are from or what messages they contain. The job of the mail service is to move letters from place to place, not to worry about why people are writing letters in the first place; the same applies to the Internet.

Just like the mail service, the Internet's simplicity means it can handle many different kinds of information helping people to do many different jobs. It's not specialized to handle emails, Web pages, chat messages, or anything else: all information is handled equally and passed on in exactly the same way. Because the Internet is so simply designed, people can easily use it to run new "applications"—new things that run on top of the basic computer network. That's why, when two European inventors developed Skype, a way of making telephone calls over the Net, they just had to write a program that could turn speech into Internet data and back again. No-one had to rebuild the entire Internet to make Skype possible.

How does Internet data move?

Circuit switching

Much of the Internet runs on the ordinary public telephone network —but there's a big difference between how a telephone call works and how the Internet carries data. If you ring a friend, your telephone opens a direct

connection (or circuit) between
your home and theirs. If you had a big map of the worldwide telephone system (and it would be a *really* big map!), you could theoretically mark a direct line, running along lots of miles of cable, all the way from your phone to the phone in your friend's house. For as long as you're on the phone, that circuit stays permanently open between your two phones. This way of linking phones together is called **circuit switching**. In the old days, when you made a call, someone sitting at a "switchboard" (literally, a board made of wood with wires and sockets all over it) pulled wires in and out to make a temporary circuits that connected one home to another. Now the circuit switching is done automatically by an electronic telephone exchange.

If you think about it, circuit switching is a really inefficient way to use a network. All the time you're connected to your friend's house, no-one else can get through to either of you by phone. (Imagine being on your computer, typing an email for an hour or more—and no-one being able to email you while you were doing so.) Suppose you talk very slowly on the phone, leave long gaps of silence, or go off to make a cup of coffee. Even though you're not actually sending information down the line, the circuit is still connected—and still blocking other people from using it.

Packet switching

The Internet could, theoretically, work by circuit switching—and some parts of it still do. If you have a traditional "dialup" connection to the Net (where your computer dials a telephone number to reach your Internet service provider in what's effectively an ordinary phone call), you're using circuit switching to go online. You'll know how maddeningly inefficient this can be. No-one can phone you while you're online; you'll be billed for every second you stay on the Net; and your Net connection will work relatively slowly.

Most data moves over the Internet in a completely different way called **packet switching**. Suppose you send an email to someone in China. Instead of opening up a long and convoluted circuit between your home and China and sending your email down it all in one go, the email is broken up into tiny pieces called **packets**. Each one is tagged with its ultimate destination and allowed to travel separately. In theory, all the packets could travel by totally different routes. When they reach their ultimate destination, they are reassembled to make an email again.

Packet switching is much more efficient than circuit switching. You don't have to have a permanent connection between the two places that are communicating, for a start, so you're not blocking an entire chunk of the network each time you send a message. Many people can use the network at the same time and since the packets can flow by many different routes, depending on which ones are quietest

or busiest, the whole network is used more evenly—which makes for quicker and more efficient communication all round.

How packet switching works

What is circuit switching?

Picture: Circuit switching is like moving your house slowly, all in one go, along a fixed route between two places.

Suppose you want to move home from the United States to Africa and you decide to take your whole house with you—not just the contents, but the building too! Imagine the nightmare of trying to haul a house from one side of the world to the other. You'd need to plan a route very carefully in advance. You'd need roads to be closed so your house could squeeze down them on the back of a gigantic truck. You'd also need to book a special ship to cross the ocean. The whole thing would be slow and difficult and the slightest problem en-route could slow you down for days. You'd also be slowing down all the other people trying to travel at the same time. Circuit switching is a bit like this. It's how a phone call works.

What is packet switching?

Picture: Packet switching is like breaking your house into lots of bits and mailing them in separate packets. Because the pieces travel separately, in parallel, they usually go more quickly and make better overall use of the network.

Is there a better way? Well, what if you dismantled your home instead, numbered all the bricks, put each one in an envelope, and

mailed them separately to Africa? All those bricks could travel by separate routes. Some might go by ship; some might go by air. Some might travel quickly; others slowly. But you don't actually care. All that matters to you is that the bricks arrive at the other end, one way or another. Then you can simply put them back together again to recreate your house. Mailing the bricks wouldn't stop other people mailing things and wouldn't clog up the roads, seas, or airways. Because the bricks could be traveling "in parallel," over many separate routes at the same time, they'd probably arrive much quicker. This is how packet switching works. When you send an email or browse the Web, the data you send is split up into lots of packets that travel separately over the Internet.

What are "clients" and "servers"?

Photo: The Internet is really nothing more than a load of wires—metal wires, fiber-optic cables, and "wireless" wires (radio waves ferrying the same sort of data that wires would carry). Much of the Internet's traffic moves along ethernet networking cables like this one.

There are hundreds of millions of computers on the Net, but they don't all do exactly the same thing. Some of them are like electronic filing cabinets that simply store information and pass it on when requested. These machines are called **servers**. Machines that hold ordinary

documents are called file servers; ones that hold people's mail are called mail servers; and the ones that hold Web pages are Web servers. There are tens of millions of servers on the Internet.

A computer that gets information from a server is called a **client**. When your computer connects over the Internet to a mail server at your ISP (Internet Service Provider) so you can read your messages, your computer is the client and the ISP computer is the server. There are far more clients on the Internet than servers—probably getting on for a billion by now!

When two computers on the Internet swap information back and forth on a more-or-less equal basis, they are known as peers. If you use an instant messaging program to chat to a friend, and you start swapping party photos back and forth, you're taking part in what's called **peer-to-peer** (**P2P**) communication. In P2P, the machines involved sometimes act as clients and sometimes as servers. For example, if you send a photo to your friend, your computer is the server (supplying the photo) and the friend's computer is the client (accessing the photo). If your friend sends you a photo in return, the two computers swap over roles.

Apart from clients and servers, the Internet is also made up of intermediate computers called **routers**, whose job is really just to make connections between different systems. If you have several computers at home or school, you probably have a single router that connects them all to the Internet. The router is like the mailbox on the end of your street: it's your single point of entry to the worldwide network.

How the Net really works: TCP/IP and DNS

The real Internet doesn't involve moving home with the help of envelopes—and the information that flows back and forth can't be controlled by people like you or me. That's probably just as well given how much data flows over the Net each day—roughly 3 billion emails and a huge amount of traffic downloaded from the world's 250 million websites by its 2 billion users. If everything is sent by packet-sharing, and no-one really controls it, how does that vast mass of data ever reach its destination without getting lost?

The answer is called TCP/IP, which stands for Transmission Control Protocol/Internet Protocol. It's the Internet's fundamental "control system" and it's really two systems in one. In the computer world, a

"protocol" is simply a standard way of doing things—a tried and trusted method that everybody follows to ensure things get done properly. So what do TCP and IP actually do?

Internet Protocol (IP) is simply the Internet's addressing system. All the machines on the Internet—yours, mine, and everyone else's—are identified by an Internet Protocol (IP) address that takes the form of a series of digits separated by dots or colons. If all the machines have numeric addresses, every machine knows exactly how (and where) to contact every other machine. When it comes to websites, we usually refer to them by easy-to-remember names (like www.explainthatstuff.com) rather than their actual IP addresses—and there's a relatively simple system called **DNS (Domain Name System)** that enables a computer to look up the IP address for any given website. In the original version of IP, known as IPv4, addresses consisted of four pairs of digits, such as 12.34.56.78 or 123.255.212.55, but the rapid growth in Internet use meant that all possible addresses were used up by January 2011. That has prompted the introduction of a new IP system with more addresses, which is known as IPv6, where each address is much longer and looks something like this: 123a:b716:7291:0da2:912c:0821:0ffe:1da2.

The other part of the control system, **Transmission Control Protocol (TCP)**, sorts out how packets of data move back and forth between one computer (in other words, one IP address) and another. It's TCP that figures out how to get the data from the source to the destination, arranging for it to be broken into packets, transmitted, resent if they get lost, and reassembled into the correct order at the other end.

A brief history of the Internet

Precursors

- 1844: **Samuel Morse** transmits the first electric telegraph message, eventually making it possible for people to send messages around the world in a matter of minutes.
- 1876: **Alexander Graham Bell** (and various rivals) develop the telephone.

- 1940: **George Stibitz** accesses a computer in New York using a teletype (remote terminal) in New Hampshire, connected over a telephone line.
- 1945: **Vannevar Bush**, a US government scientist, publishes a paper called *As We May Think*, anticipating the development of the World Wide Web by half a century.
- 1958: Modern modems are developed at **Bell Labs**. Within a few years, AT&T and Bell begin selling them commercially for use on the public telephone system.

1960s: Preparing for a global network

- 1964: **Paul Baran**, a researcher at RAND, invents the basic concept of computers communicating by sending "message blocks" (small packets of data); Welsh physicist **Donald Davies** has a very similar idea and coins the name "packet switching," which sticks.
- 1963: **J.C.R. Licklider** envisages a network that can link people and user-friendly computers together.
- 1964: **Larry Roberts**, a US computer scientist, experiments with connecting computers over long distances.
- 1960s: **Ted Nelson** invents hypertext, a way of linking together separate documents that eventually becomes a key part of the World Wide Web.
- 1966: Inspired by the work of Licklider, **Bob Taylor** of the US government's Advanced Research Projects Agency (ARPA) hires Larry Roberts to begin developing a national computer network.
- 1969: The **ARPANET** computer network is launched, initially linking together four scientific institutions in California and Utah.

1970s: The modern Internet appears

- 1971: **Ray Tomlinson** sends the first email, introducing the @ sign as a way of separating a user's name from the name of the computer where their mail is stored.
- 1973: **Bob Metcalfe** invents Ethernet, a convenient way of linking computers and peripherals (things like printers) on a local network.
- 1974: **Vinton Cerf** and **Bob Kahn** write an influential paper describing how computers linked on a network they called an "internet" could send messages via packet switching, using a protocol (set of formal rules) called TCP (Transmission Control Protocol).

- 1978: TCP is improved by adding the concept of computer addresses (Internet Protocol or IP addresses) to which Internet traffic can be routed. This lays the foundation of TCP/IP, the basis of the modern Internet.
- 1978: **Ward Christensen** sets up Computerized Bulletin Board System (a forerunner of topic-based Internet forums, groups, and chat rooms) so computer hobbyists can swap information.

1980s: The Internet gives birth to the Web

- 1983: TCP/IP is officially adopted as the standard way in which Internet computers will communicate.
- 1982–1984: DNS (Domain Name System) is developed, allowing people to refer to unfriendly IP addresses (12.34.56.78) with friendly and memorable names (like google.com).
- 1986: The US National Science Foundation (NSF) creates its own network, NSFnet, allowing universities to piggyback onto the ARPANET's growing infrastructure.
- 1988: Finnish computer scientist **Jarkko Oikarinen** invents IRC (Internet Relay Chat), which allows people to create "rooms" where they can talk about topics in real-time with like-minded online friends.
- 1989: The **Peapod** grocery store pioneers online grocery shopping and e-commerce.
- 1989: **Tim Berners-Lee** invents the World Wide Web at CERN, the European particle physics laboratory in Switzerland. It owes a considerable debt to the earlier work of Ted Nelson and Vannevar Bush.

1990s: The Web takes off

- 1993: **Marc Andreessen** writes Mosaic, the first user-friendly web browser, which later evolves into Netscape and Mozilla.
- 1993: **Oliver McBryan** develops the World Wide Web Worm, one of the first search engines.
- 1994: People soon find they need help navigating the fast-growing World Wide Web. **Brian Pinkerton** writes WebCrawler, a more sophisticated search engine and **Jerry Yang** and **David Filo** launch Yahoo!, a directory of websites organized in an easy-to-use, tree-like hierarchy.
- 1995: E-commerce properly begins when **Jeff Bezos** founds Amazon.com and **Pierre Omidyar** sets up eBay.

- 1996: ICQ becomes the first user-friendly instant messaging (IM) system on the Internet.
- 1997: **Jorn Barger** publishes the first blog (web-log).
- 1998: **Larry Page** and **Sergey Brin** develop a search engine called BackRub that they quickly decide to rename Google.
- 1999: **Kevin Ashton** conceives the idea that everyday objects, and not just computers, could be part of the Internet. This idea is now known as the Internet of Things.

2000s: Internet and Web for all

- 2003: Virtually every country in the world is now connected to the Internet.
- 2004: Harvard student **Mark Zuckerberg** revolutionizes social networking with Facebook, an easy-to-use website that connects people with their friends.
- 2006: **Jack Dorsey** and **Evan Williams** found Twitter, an even simpler "microblogging" site where people share their thoughts and observations in off-the-cuff, 140-character status messages.
- 2017: Russian president **Vladimir Putin** approves a plan to create a private alternative to the Internet to counter the historic dominance of the (traditional) Internet by the United States.

Find out more

On this website

- BitTorrent
- Broadband
- History of communication
- History of computers
- IPTV
- Modems
- Voice Over Internet Protocol (VOIP) (covers Internet telephony and Skype)
- Wireless Internet
- World Wide Web (WWW)

Books

General overviews

- A History of the Internet and the Digital Future by Johnny Ryan. Reaktion Books, 2013. A wide-ranging look at how Internet technology is changing everything from culture and politics to shopping and war.
- The Master Switch: The Rise and Fall of Information Empires by Tim Wu. Atlantic, 2010. How the open Internet we know and love is threatened by monopolization—amd what we can do about it.
- The Future of the Internet—And How to Stop It by Jonathan Zittrain. Yale University Press, 2008. Why an "open" Internet is better than a "closed" one dominated by proprietary technologies.
- The Internet: A Historical Encyclopedia by Christos Moschovitis, Hilary Poole, Laura Lambert, and Chris Woodford. ABC-Clio, 2005. A comprehensive (though now slightly dated) three-volume guide to the

history and impacts of the Internet and the people who made it possible. (I was the author of the second of the three volumes, covering social impacts.)

- Who Controls the Internet? Illusions of a Borderless World by Jack Goldsmith and Tim Wu. Oxford University Press, 2006. Will governments be forced to regulate the Internet as it challenges our traditional conception of a geographically divided world? Quite dated, but still interesting.
- A Brief History of the Future: Origins of the Internet by John Naughton. Phoenix, 2000/2014. Dated, but worth a look for the early history.

Basic technical guides

- The Internet For Dummies by John R. Levine and Margaret Levine Young. Wiley, 2015. The title uses "Internet" in its most general way. This is actually a guide to going online that would most suit older people or those who've barely used a computer before.
- TCP/IP For Dummies by Candace Leiden, Marshall Wilensky. Dummies/Wiley, 2009. One of the simpler introductions to the Internet protocol. However, you might find the light-hearted writing style offputting.

More technical

- TCP/IP Unleashed by Karanjit Siyan, Tim Parker. Sams, 2002. A more serious treatment than the Dummies book.
- TCP/IP Network Administration by Craig Hunt. O'Reilly Media, 2002. A much more detailed guide to TCP/IP for computer networking students and professionals.

Articles

- Think Local About the Digital Divide by Shira Ovide, The New York Times, December 3, 2020. Exploring some practical solutions to Internet inequalities in the United States.
- 'Digital divide' will worsen inequalities, without better global cooperation: UN News, 4 September 2019. The Internet offers unprecedented opportunities, but there's a risk the benefits are moving disproportionately to richer, better-connected nations.

- Net's founding father Dr Larry Roberts dies aged 81: BBC News, 31 December 2018. Looking back on the life and achievements of one of the Internet's inventors.
- Why Russia is Building Its Own Internet by Tracy Staedter. IEEE Spectrum, January 17, 2018. Could Russia really build its own Internet—and why would it want to?
- Bridging a Digital Divide That Leaves Schoolchildren Behind by Cecilia Kang. The New York Times. February 23, 2016. Lack of Internet access is punishing children's education, even in richer nations like the United States.
- Internet access is 'a fundamental right': BBC News, 8 March 2010. Some 80 percent of the world's people think access to the Internet is a fundamental right.
- Superpower: Visualizing the Internet: BBC News, January 2010. What are the world's top websites in search, social networking, retail, and media. Some great interactive graphics.
- Overhaul of net addresses begins: BBC News, 4 February 2008. How the world ran out of IP addresses, prompting the development of IPv6.
- The Tech Lab: Vint Cerf: One of the Internet's founding father's explains how the Internet has developed and where it's going next.

Facts, statistics, and reports

- World Bank: Digital Development: If you're interested in how the world is going online, and how the international community is making efforts to improve Internet access in developing countries, the World Bank is a good place to start your research. You'll find lots of useful reports, facts, charts, and statistics.
- Measuring the Information Society 2018: The latest report from the ITU-T marks an important milestone: more than half the world is now, finally, online.
- Measuring the Information Society 2015: One of the most recent International Telecommunications Union reports, with global and regional analysis of Internet trends (particularly in developing countries), and some discussion of the Internet of Things.
- World Telecommunication/ICT Development Report 2010: Monitoring the WSIS targets: 9th Edition, 2010: A detailed report from the International Telecommunications Union that charts the spread of telephone and Internet technology around the world.

- Internet World Stats: A good collection of tables and charts showing patterns of Internet use around the world.
- Our World in Data: The Internet: Well-digested, well-presented summary of world Internet use.

Follow us

Rate this page

Please rate or give feedback on this page and I will make a donation to WaterAid.

Save or share this page

Press CTRL + D to bookmark this page for later or tell your friends about it with:

Cite this page

Woodford, Chris. (2006/2021) Internet. Retrieved from https://www.explainthatstuff.com/internet.html. [Accessed (Insert date here)]

More to explore on our website...

Communications | Computers | Electricity & electronics | Energy | Engineering | Environment
Gadgets | Home life | Materials | Science | Tools & instruments | Transportation

Home | A-Z index | Send feedback | Random article | Timeline | Teaching guide | About us | Privacy & cookies

↑ Back to top

A beginner's guide to broadband internet, the most popular type of internet in the US

businessinsider.com/what-is-broadband-internet

Dave Johnson Apr 2, 2021, 9:49 AM

- Broadband internet is another name for high-speed internet service, usually defined as 25Mbps or faster.
- There are four major types of broadband internet: cable, DSL, fiber, and satellite.
- The average broadband speed in the US is 124Mbps, but DSL is much slower at about 35Mbps, and fiber is the fastest at 1,000Mbps.
- Visit Insider's Tech Reference library for more stories.

Simply put, broadband is any high-speed internet service. Broadband is the most common kind of internet service available, and that's been true in most populated regions of the US for a couple of decades.

If you're reading this, there's an extremely good chance that you're using broadband internet.

Broadband internet, explained

Prior to the widespread availability of broadband, most internet was delivered to residential homes via dial-up service — the same technology used for telephone calls. This meant that picking up the phone would turn off your internet access, and internet speeds were pathetically slow — about 0.056 megabits per second (Mbps).

These days, nearly every home in the US uses broadband. And in contrast to dial-up, the average broadband speed in the US is about 124Mbps, according to DecisionData.org — that's about 2,200 times faster.

Broadband speeds vary depending upon your location, service provider, and service plan. deepblue4you/Getty Images

While the average broadband speed is 124Mbps, actual broadband speeds vary dramatically depending upon where you live, your service provider, and your actual broadband service plan. Since 2015, the Federal Communications Commission has defined broadband as any service that delivers at least 25Mbps download speed and 3Mbps upload speed, though broadband can also reach "gigabit" speeds — 1,000Mbps.

Broadband isn't the same thing as Wi-Fi. Wi-Fi is the wireless network that broadcasts internet signals around your home or office. "Broadband" describes the type and speed of those signals, which are delivered to your home and then passed through a router. The router can then send the internet to your computer and other devices via Ethernet cable or wirelessly via Wi-Fi.

The four major types of broadband internet

There are four major kinds of broadband service. Not only do they use fundamentally different technologies to get the data to your door, but they vary by speed and price. Here is a brief overview of each:

Cable

Broadband cable internet uses a coaxial cable to transmit internet signals.
unkas_photo/Getty Images

Broadband cable internet uses the same coaxial cable that brings cable TV into your home; it's become a popular form of broadband because it lets consumers use the same company for their television and internet access.

Cable is fairly fast, usually able to reach speeds as high as 500Mbps (depending upon the service plan you choose). Cable's bandwidth is shared among everyone in a service area, though, so you might find it slows down in the evening when everyone is at home and streaming video.

DSL

DSL isn't as fast as other broadband types, but is still better than dial-up.
Jens Domschky/Getty Images

Digital subscriber line (DSL) uses phone lines to send and receive data and is championed by traditional phone service providers to leverage their infrastructure.

It's relatively slow, especially compared to cable, generally limited to about 5Mbps to 35Mbps. But in rural areas, it's often the most available option.

Fiber

A fiber optic technician splices together fiber optic cables for house connections.
Jens Büttner/picture alliance via Getty Images

As the name suggests, fiber uses fiber optic cables to transmit data using light rather than electricity.

It's generally the fastest residential internet you can buy, topping out at 1,000 Mbps (which is referred to as a "gigabit" service). Like cable, fiber shares bandwidth across groups of customers but carries so much data that customers should never notice a slowdown.

Fiber isn't available in many areas but is slowly spreading to new cities.

Satellite

Starlink Internet communication satellites seen in the night sky.
Yuri Smityuk\TASS via Getty Images

Satellite internet isn't common because it's typically the most expensive service per megabit, offering the lowest overall value. It's most often used in rural regions that are poorly serviced by DSL, cable, and fiber.

The economics of broadband satellites might be changing, though, as SpaceX deploys its Starlink constellation of broadband internet satellites. While still being deployed and operating in a limited beta capacity, Starlink costs $99 per month and is expected to eventually offer download speeds of 300Mbps.

However Starlink has also proved controversial, as its satellites are clearly visible from Earth, attracting complaints from scientists and environmentalists about light pollution and space junk.

Dave Johnson

Dave Johnson is a technology journalist who writes about consumer tech and how the industry is transforming the speculative world of science fiction into modern-day real life. Dave grew up in New Jersey before entering the Air Force to operate satellites, teach space operations, and do space launch planning. He then spent eight years as a content lead on the

Windows team at Microsoft. As a photographer, Dave has photographed wolves in their natural environment; he's also a scuba instructor and co-host of several podcasts. Dave is the author of more than two dozen books and has contributed to many sites and publications including CNET, Forbes, PC World, How To Geek, and Insider.

United States Court of Appeals for the Ninth Circuit

Office of the Clerk
95 Seventh Street
San Francisco, CA 94103

Information Regarding Judgment and Post-Judgment Proceedings

Judgment

- This Court has filed and entered the attached judgment in your case. Fed. R. App. P. 36. Please note the filed date on the attached decision because all of the dates described below run from that date, not from the date you receive this notice.

Mandate (Fed. R. App. P. 41; 9th Cir. R. 41-1 & -2)

- The mandate will issue 7 days after the expiration of the time for filing a petition for rehearing or 7 days from the denial of a petition for rehearing, unless the Court directs otherwise. To file a motion to stay the mandate, file it electronically via the appellate ECF system or, if you are a pro se litigant or an attorney with an exemption from using appellate ECF, file one original motion on paper.

Petition for Panel Rehearing (Fed. R. App. P. 40; 9th Cir. R. 40-1)
Petition for Rehearing En Banc (Fed. R. App. P. 35; 9th Cir. R. 35-1 to -3)

(1) A. Purpose (Panel Rehearing):

- A party should seek panel rehearing only if one or more of the following grounds exist:
  - A material point of fact or law was overlooked in the decision;
  - A change in the law occurred after the case was submitted which appears to have been overlooked by the panel; or
  - An apparent conflict with another decision of the Court was not addressed in the opinion.
- Do not file a petition for panel rehearing merely to reargue the case.

B. Purpose (Rehearing En Banc)

- A party should seek en banc rehearing only if one or more of the following grounds exist:

- ► Consideration by the full Court is necessary to secure or maintain uniformity of the Court's decisions; or
- ► The proceeding involves a question of exceptional importance; or
- ► The opinion directly conflicts with an existing opinion by another court of appeals or the Supreme Court and substantially affects a rule of national application in which there is an overriding need for national uniformity.

(2) Deadlines for Filing:

- A petition for rehearing may be filed within 14 days after entry of judgment. Fed. R. App. P. 40(a)(1).
- If the United States or an agency or officer thereof is a party in a civil case, the time for filing a petition for rehearing is 45 days after entry of judgment. Fed. R. App. P. 40(a)(1).
- If the mandate has issued, the petition for rehearing should be accompanied by a motion to recall the mandate.
- *See* Advisory Note to 9th Cir. R. 40-1 (petitions must be received on the due date).
- An order to publish a previously unpublished memorandum disposition extends the time to file a petition for rehearing to 14 days after the date of the order of publication or, in all civil cases in which the United States or an agency or officer thereof is a party, 45 days after the date of the order of publication. 9th Cir. R. 40-2.

(3) Statement of Counsel

- A petition should contain an introduction stating that, in counsel's judgment, one or more of the situations described in the "purpose" section above exist. The points to be raised must be stated clearly.

(4) Form & Number of Copies (9th Cir. R. 40-1; Fed. R. App. P. 32(c)(2))

- The petition shall not exceed 15 pages unless it complies with the alternative length limitations of 4,200 words or 390 lines of text.
- The petition must be accompanied by a copy of the panel's decision being challenged.
- A response, when ordered by the Court, shall comply with the same length limitations as the petition.
- If a pro se litigant elects to file a form brief pursuant to Circuit Rule 28-1, a petition for panel rehearing or for rehearing en banc need not comply with Fed. R. App. P. 32.

- The petition or response must be accompanied by a Certificate of Compliance found at Form 11, available on our website at www.ca9.uscourts.gov under *Forms.*
- You may file a petition electronically via the appellate ECF system. No paper copies are required unless the Court orders otherwise. If you are a pro se litigant or an attorney exempted from using the appellate ECF system, file one original petition on paper. No additional paper copies are required unless the Court orders otherwise.

Bill of Costs (Fed. R. App. P. 39, 9th Cir. R. 39-1)

- The Bill of Costs must be filed within 14 days after entry of judgment.
- See Form 10 for additional information, available on our website at www.ca9.uscourts.gov under *Forms.*

Attorneys Fees

- Ninth Circuit Rule 39-1 describes the content and due dates for attorneys fees applications.
- All relevant forms are available on our website at www.ca9.uscourts.gov under *Forms* or by telephoning (415) 355-7806.

Petition for a Writ of Certiorari

- Please refer to the Rules of the United States Supreme Court at www.supremecourt.gov

Counsel Listing in Published Opinions

- Please check counsel listing on the attached decision.
- If there are any errors in a published opinion, please send an email or letter **in writing within 10 days** to:
  - ► Thomson Reuters; 610 Opperman Drive; PO Box 64526; Eagan, MN 55123 (Attn: Maria Evangelista (maria.evangelista@tr.com));
  - ► and electronically file a copy of the letter via the appellate ECF system by using "File Correspondence to Court," or if you are an attorney exempted from using the appellate ECF system, mail the Court one copy of the letter.

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

Form 10. Bill of Costs

Instructions for this form: http://www.ca9.uscourts.gov/forms/form10instructions.pdf

9th Cir. Case Number(s)

Case Name

The Clerk is requested to award costs to *(party name(s))*:

I swear under penalty of perjury that the copies for which costs are requested were actually and necessarily produced, and that the requested costs were actually expended.

Signature **Date**

*(use "*s/[typed name]*" to sign electronically-filed documents)*

COST TAXABLE	**REQUESTED** *(each column must be completed)*			
DOCUMENTS / FEE PAID	No. of Copies	Pages per Copy	Cost per Page	TOTAL COST
Excerpts of Record*			$	$
Principal Brief(s) *(Opening Brief; Answering Brief; 1st, 2nd , and/or 3rd Brief on Cross-Appeal; Intervenor Brief)*			$	$
Reply Brief / Cross-Appeal Reply Brief			$	$
Supplemental Brief(s)			$	$
Petition for Review Docket Fee / Petition for Writ of Mandamus Docket Fee / Appeal from Bankruptcy Appellate Panel Docket Fee				$
			TOTAL:	$

***Example:** Calculate 4 copies of 3 volumes of excerpts of record that total 500 pages [Vol. 1 (10 pgs.) + Vol. 2 (250 pgs.) + Vol. 3 (240 pgs.)] as:*
No. of Copies: 4; Pages per Copy: 500; Cost per Page: $.10 (or actual cost IF less than $.10);
TOTAL: 4 x 500 x $.10 = $200.

Feedback or questions about this form? Email us at forms@ca9.uscourts.gov