

Internet Regulation

Are stiffer rules needed to protect web content?

Lawmakers are struggling with tough questions about how to regulate digital media and the Internet. With digitized versions of feature films and recorded music playable on personal computers and cell phones, the film, television and music industries have repeatedly complained that global “pirates” use cheap, widely available computer technology and the Internet to steal their intellectual property and profits. A bill to require Internet service providers (ISPs) to shut down websites suspected of posting or distributing copyrighted material stalled in Congress. Meanwhile, ISPs are fighting government attempts to bar them from discriminating against certain websites. Advocates say such “net neutrality” rules are needed to prevent situations in which, for example, a cable TV-owned ISP that also sells video content might slow the flow of video that customers buy from other companies. But ISPs argue that it wouldn’t be in their financial interest to conduct business that way.



The heavy-metal band Metallica raised early concerns about digital copyright protection. In 1999 the group sued Napster, the first website for music sharing, after Metallica’s unreleased music appeared on the now-defunct site. Above, the group performs in Indio, Calif., on April 23, 2011.

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Internet Regulation

BY MARCIA CLEMMITT

THE ISSUES

Wikipedia, the online encyclopedia written by its users, has become a dependable web presence — always there to answer questions on just about every conceivable subject, from aardvarks to Zoroaster. But on Jan. 18 Wikipedia disappeared, abruptly shutting down its U.S. site in a self-proclaimed “day of darkness.”

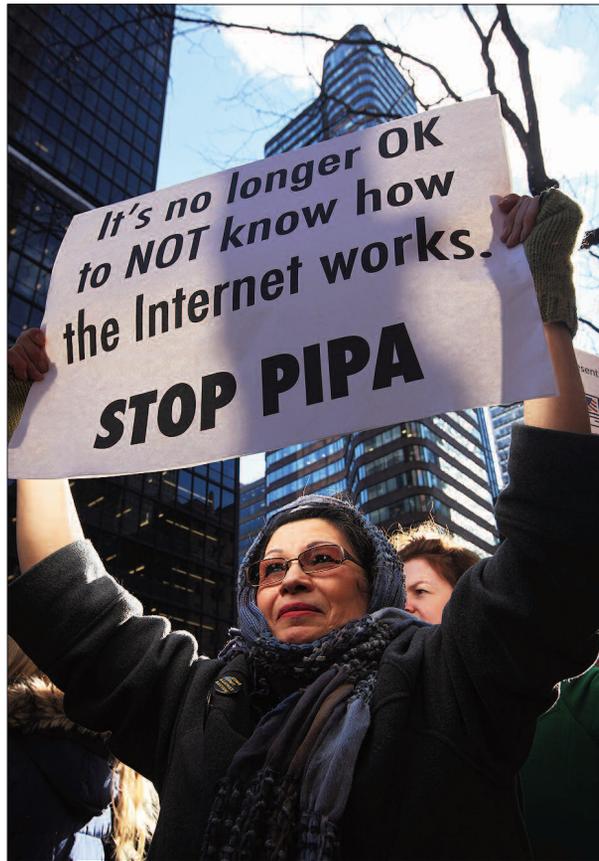
The blackout came in protest of two Hollywood-backed proposals in Congress — the Stop Online Piracy Act (SOPA) and the Protect Intellectual Property Act (PIPA) — aimed at combating the unauthorized use or reproduction of movies, TV shows, recorded music and other copyrighted material.

Such pirating, which typically occurs on foreign-based rogue websites, has mushroomed into a global enterprise costing the entertainment industry and others billions of dollars a year in lost revenues and royalties.

But opponents of the proposed bills — including Wikipedia co-founder Jimmy Wales — argued they were so vague and draconian that they would force any website carrying user-generated content perceived to violate copyright laws to shut down at nearly a moment’s notice.

What’s more, opponents said, the bills would effectively block search engines from connecting to those sites and allow copyright owners to stop advertisers from doing business with them.

“I hope we send a broad global message that the Internet as a whole will not tolerate censorship in response to



Getty Images/Mario Tama

Protesters in New York City demonstrate on Jan. 18, 2012, against the proposed Protect Intellectual Property Act (PIPA) and the Stop Online Piracy Act (SOPA), which would block the unauthorized use of movies, TV shows, recorded music and other copyrighted material. The bills’ opponents — including Wikipedia co-founder Jimmy Wales — argue they are too draconian and will lead to censorship.

mere allegations of copyright infringement,” said Wales.¹ Thousands of other websites also shut down in protest, while Google and Facebook, among others, remained in operation but expressed support for Wikipedia’s stand.

Debates on Internet regulation are heating up as cyber companies gain clout in Washington and the Internet penetrates every area of life. Besides the fight over copyright enforcement, a battle is raging over government attempts to bar Internet-service providers (ISPs) from delivering some websites’ content to customers more slowly than others.

Government advocates argue that such “net neutrality” rules are needed to keep

broadband ISPs — mostly cable TV and phone companies that provide high-speed Internet services but also are interested in supplying content to customers — from hurting small or upstart competitors in the content business. But the ISPs argue that such legislation impinges on their free-speech rights: After all, they argue, they own the transmission lines that carry the data. And besides, they say, slowing the flow of online traffic wouldn’t be in their financial interest because it might make customers go elsewhere.

While the net neutrality debate can descend into the technical and arcane, Internet piracy is a subject that anyone who has knowingly watched a bootleg movie or illegally downloaded a Top 10 hit song can understand. Two days after Wikipedia’s online protest, on Jan. 20, Congress postponed long-expected floor votes on House and Senate bills requiring online-payment companies, search engines and ISPs to cut their ties with websites alleged to be posting copyrighted material.

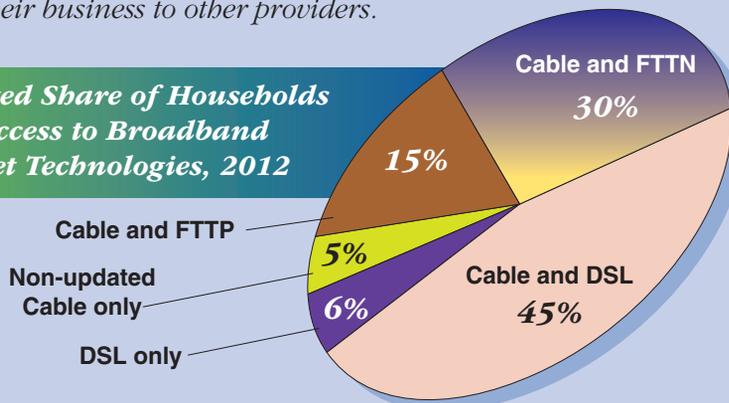
“The growing number of foreign websites that offer counterfeit or stolen goods continues to threaten American technology, products and jobs,” said Rep. Lamar Smith, R-Texas, chief sponsor of the House bill. “Congress cannot stand by and do nothing while some of America’s most profitable and productive industries are under attack.”²

The 1998 Digital Millennium Copyright Act (DMCA) currently governs copyright infringement. Advocates of new legislation say it is outmoded because it doesn’t cover the full range of Internet-piracy issues that have emerged over the past decade.

Top-Speed Internet Options Limited

Only about 15 percent of Americans will have a choice among top-speed broadband Internet service providers (ISPs) in 2012. Advocates of net neutrality, which would prevent ISPs from slowing delivery of some websites' content, say consumers won't be able to pressure ISPs to treat all content equally if they can't threaten to switch their business to other providers.

Projected Share of Households With Access to Broadband Internet Technologies, 2012



* Some telephone companies offer very high-speed broadband, but most service is slower. Fiber-to-the-premises (FTTP) is fastest — roughly as fast as current, upgraded cable. Fiber-to-the-node (FTTN) is somewhat slower, and digital subscriber line (DSL) is about a third as fast as top-speed cable and FTTP.

** Figures do not total 100 because of rounding.

Source: "Broadband Competition and Innovation Policy," Federal Communications Commission, 2010, www.broadband.gov/plan/4-broadband-competition-and-innovation-policy/

But others say the new bills go too far. "I'm not exactly a fan" of the DMCA, but it "has a process that at least gives people a hearing," says Jon Ippolito, an associate professor of new media at the University of Maine, in Orono. In contrast, proposed legislation risks "poisoning the very nature of the Internet" as a participatory medium by authorizing near-immediate shutdowns of websites with user-generated content, he says.

Meanwhile, after years of wrangling, the Federal Communications Commission (FCC), the federal agency that writes and enforces rules for telecommunications, last November required ISPs that deliver high-speed Internet service to observe "net neutrality" in managing their networks. While it's understood that ISPs may sometimes need to slow some data to avoid network congestion, they must pub-

licly disclose the methods they use to manage traffic and may not block lawful websites or "unreasonably" discriminate among sites.

A congressional resolution to stop the regulation passed the House last year, but not the Senate, and lawmakers continue to fight over the issue.

The net neutrality rules are an unwarranted intrusion into an Internet market that functions well, wrote Gerald R. Faulhaber, professor emeritus of business and public policy at the University of Pennsylvania's Wharton School, and David J. Farber, professor of computer science and public policy at Carnegie Mellon University in Pittsburgh. The FCC's "successful policy of no regulation" for the past two decades has led to "the wildly successful Internet we have today" and should not be abandoned, they said.³

But net-neutrality advocates argue that broadband ISPs might have significant business motives for slowing some websites' traffic. The ISPs, too, would like to get into the Internet content game, which has brought big financial rewards to companies such as Facebook and Amazon. But the online services they could offer — video and phone service — also have competitors, such as the video company Netflix and the Internet phone company Skype.

Therefore, regulation advocates say, ISPs might consider it in their financial interest to slow content traffic to those competitors to gain an edge over them. For example, a phone company that offers broadband might be motivated to slow delivery of Internet-telephone services such as VoIP, and, in fact, several ISPs have been accused of such blocking in the past.⁴

"I don't pay Comcast for making Netflix inferior to [Comcast's] pay-per-view," says Robert Frieden, a professor of telecommunications and law at Pennsylvania State University, in University Park. "I don't want the intermediaries tilting things to favor their own content."

Edward W. Felten, a professor of computer science and public affairs at Princeton University and chief technologist at the Federal Trade Commission, says it remains an "open question whether government can police favoritism by Internet network operators." Nevertheless, he says that keeping the Internet neutral by some means would help small Internet providers get off the ground or thrive against their bigger rivals.

"The next generation of innovators, who need neutrality the most, are not at the bargaining table. They're hard at work in their labs or classrooms, dreaming of the next big thing, and hoping that the Internet is as open to them as it was to the founders of Google."⁵

As lawmakers, entrepreneurs and policy analysts consider the future of Internet regulation, here are some of the questions being debated:

Is Internet piracy harming the economy?

For advocates of tougher copyright regulation, the domino effect may be the most compelling argument for toughening anti-piracy laws: Piracy of copyrighted material not only robs creative artists of due compensation but harms the whole economy as lost revenues in one industry decrease sales in others, they argue.

However, many analysts argue that economic- and job-loss estimates cited by copyright-owners' groups such as the Recording Industry Association of America (RIAA) and the Motion Picture Association of America (MPAA) are inflated and based on minimal data.

"The accumulative impact of millions of songs downloaded illegally . . . is devastating" to a whole group of workers, including "songwriters, recording artists, audio engineers, computer technicians, talent scouts and marketing specialists, producers, publishers and countless others," said the RIAA.⁶

"More than 2.2 million hard-working, middle-class people in all 50 states depend on the entertainment industry for their jobs, and many millions more work in other industries that rely on intellectual property," Michael O'Leary, MPAA senior executive vice president, said in lauding the House Judiciary Committee's strong bipartisan support for SOPA.⁷

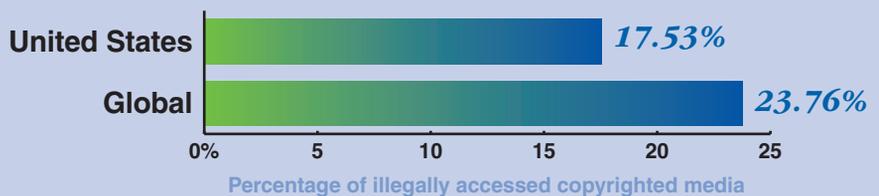
"Rogue websites that steal America's innovative and creative products . . . threaten more than 19 million American jobs," wrote Mark Elliot, executive vice president of the U.S. Chamber of Commerce.⁸

"The independent music community is impacted by . . . illegal downloading, even more so in many cases than major music labels or movie studios because [profit] margins are so thin for independent labels," according to the American Association for Independent Music (A2IM), a trade group that represents smaller, independent record labels. "Because we

One-Fourth of Downloads Are Illegal

Roughly one-fourth of global Internet traffic, and about 18 percent of U.S. traffic, illegally accesses copyrighted media through downloading methods that include file-sharing, video streaming and use of torrents, which are files that reveal the online location of copyrighted items.

Internet Traffic Illegally Accessing Copyrighted Media



* Percentages do not include pornography because its status can be difficult to assess.

Source: "Technical Report: An Estimate of Infringing Use of the Internet," Envisional, January 2011, pp. 2-3, documents.envisional.com/docs/Envisional-Internet_Usage-Jan2011.pdf

are not part of larger corporations which might be able to offset losses during leaner years, making a living becomes that much more difficult."⁹

Recorded-music sales have declined significantly in most years since the advent of Internet downloading. In 2010, for example, worldwide music sales dropped by 8.4 percent — \$1.45 billion. The decrease comes "as the industry continues to struggle with piracy and winning consumers over to legal download models," observes *The Guardian* newspaper in Britain.¹⁰

"The demand for new music seems as insatiable and diverse as ever, and record companies continue to meet it. But they are operating at only a fraction of their potential because of a difficult environment dominated by piracy," said Frances Moore, chief executive of the music-industry trade group International Federation of the Phonographic Industry (IFPI).¹¹

"Piracy remains an enormous barrier to sustainable growth in digital music," according to IFPI. "Globally, one in four internet users (28%) regularly access unlicensed services," said the group.¹²

"I made a film called 'Naked Ambition: An R-rated Look at an X-rated Industry' that Apple, Netflix and Warner Brothers distributed but that was widely pirated anyway, wrote photographer and independent filmmaker Michael Grecco. He received 107 Google alerts about online references to his movie that each named multiple websites where his film was available for free. The sites, which Grecco had not authorized to host his film, "made all the money; I have never seen a dime," he wrote.¹³

Piracy-related monetary and job losses are difficult to estimate, but the conservative, Lewisville, Texas-based think tank, Institute for Policy Innovation (IPI), founded by former House Majority Leader Dick Armey, R-Texas, has published perhaps the most oft-cited statistics. In 2005, industries that sell material whose copyrights they own, such as the film, TV and recording industries, lost at least \$23.5 billion to piracy of music, video games and software, and retailers lost another \$2.5 billion, the IPI calculated. The group also estimated that lost sales from pirating cost the United States the chance to add 373,375 jobs to the

New Technology Spurs Innovation — and Resistance

Critics say “dinosaurs” seek veto power over the future.

Jesse Jordan, a freshman at Rensselaer Polytechnic Institute in Troy, N.Y., got the idea for his new search engine in 2003. It would be a useful and harmless way for his fellow students to search each others' files in the “public file” section of the school's internal computer system.

But after some searches turned up copyrighted music files that students had stowed on the system, the Recording Industry Association of America (RIAA) — the music-industry trade group — sued Jordan for music piracy, demanding millions of dollars in damages. Ultimately, Jordan — who said his program wasn't intended for sharing music — paid \$12,000 to settle the suit, without admitting wrongdoing.¹

Jordan wasn't alone. In the early 2000s, RIAA filed or threatened dozens of lawsuits against college students around the country. The campaign was needed, said RIAA General Counsel Steven Marks, because “the enormous damage compounded with every illegal download is alarming — thousands of regular, working class musicians . . . out of work, stores shuttered, new bands never signed.”²

But there was more to the lawsuit blitz than simply an effort to scare pirating students straight, says Kevin J. Greene, a professor at Thomas Jefferson School of Law, in San Diego. Among the schools where lawsuits were threatened were many that produce highly skilled technology majors, including Rensselaer, the Massachusetts Institute of Technology (MIT) and

Carnegie Mellon University, in Pittsburgh. “That was not by chance,” says Greene. RIAA officials “were trying to send a message to these high-tech kids” to back off from inventing new technology that would make it easier to copy and share music.

Attempts to slow the commercial impact of new communications technology have a long history.

In the 1930s, AT&T banned one of its engineers, Clarence Hickman of the telephone giant's famous research facility, Bell Labs, from continuing to work on an answering machine he'd invented that used magnetic tape to record messages. Worried that having conversations recorded would “lead the public to abandon the telephone,” AT&T shut down Bell research on magnetic tape — the eventual source of audiocassettes, videocassettes and the first computer-storage systems. Eventually, “magnetic tape would come to America via imports of foreign technology, mainly German,” wrote Tim Wu, a professor at Columbia Law School who specializes in technology issues.³

Also in the 1930s, the young broadcast industry — at the time limited to AM radio — stymied the emergence of FM radio. David Sarnoff, president of RCA, a radio manufacturer and broadcast company, assigned noted inventor Edwin Armstrong of Columbia University to devise a way to eliminate the static that plagued AM broadcasts. Armstrong went one better, inventing an entirely new form of transmission that reduced broadcast noise and made high-fidelity music broadcasts possible. It did so by mod-

economy, about 120,000 in media- and software-creating industries and the rest in jobs that would have been supported by the 120,000 new media-industry workers.¹⁴

Skepticism about those estimates abounds, however. The Government Accountability Office (GAO), Congress' non-partisan auditing arm, concluded in 2010 that while economic losses likely are “sizable,” no existing estimates can be trusted. No public agencies collect their own data on piracy, industry groups often don't disclose the methods behind their estimates and numerous uncertainties cloud such questions as how much pirated material actually translates into lost sales, the GAO said. For example, a consumer who pays a low price for a counterfeit DVD wouldn't necessarily have paid the price of a non-counterfeit copy, it noted.¹⁵

Essentially, IPI argued that when a movie studio makes \$10 selling a DVD, then passes on \$7 to the company that manufactured it and \$2 to the trucker who shipped it, the total value of the DVD is \$10 plus \$7 plus \$2, or \$19, wrote Timothy B. Lee, an adjunct scholar at the Cato Institute, a libertarian think tank in Washington. “Yet some simple math shows that this is nonsense,” he wrote. After paying its subcontractors, “the studio is \$1 richer, the trucker . . . \$2, and the manufacturer . . . \$7. . . . That adds up to \$10.”¹⁶

Sales of music CDs dropped steadily in the 2000s, but while the RIAA pins the blame on Internet piracy, the conclusion doesn't hold up because too many other factors likely play into the decrease, argued Lawrence Lessig, a Harvard Law School professor. For

example, in the early 2000s, when RIAA reported a substantial drop in the number of CDs sold, fewer CDs than previously were being released and the per-CD price was rising, both solid reasons to expect fewer sales, Lessig wrote.¹⁷

Free downloading does sometimes replace a music sale, but it's misleading to count every free Internet download as an act of piracy that deprives a copyright owner of dollars, Lessig argued. For example, a large number of “pirated” downloads are of older music that has been taken off the market and is impossible to obtain legally, he wrote.

“This is still technically a violation of copyright, though because the copyright owner is not selling the content anymore, the economic harm is zero — the same harm that occurs when I

ulating radio waves' frequency, rather than their amplitude. It was called FM (frequency modulation) radio.

Because FM radio also operates at a much lower power, Armstrong's invention opened the way for more small broadcasters to get into the game. "You might think that the possibility of more radio stations with less interference would be generally recognized as an unalloyed good," wrote Wu. But, he added, "by this point the radio industry . . . had invested heavily in the status quo of fewer stations," which pleased advertisers by reaching many listeners with one ad buy.

To preserve their business model, industry leaders convinced federal regulators that FM transmission was not ready for prime time, and for six years the government banned its commercial use and limited its experimental use to one narrow band of frequencies. "There was no way for an FM station even to get started without breaking the law," Wu wrote.

In the 21st century, the RIAA successfully fought for new music-licensing rules to hamper expansion of so-called "Internet radio," wrote Harvard Law School Professor Lawrence Lessig. Internet technology allows a virtually unlimited number of "Internet radio stations" to "broadcast," potentially allowing a much wider range of musicians to find a worldwide audience.

But what technology does not limit, laws can, according to Lessig. The RIAA fought to expand copyright law to require In-

ternet stations to pay licensing fees to both composers and the recording artists who perform their songs. Ordinary broadcast-radio stations pay composers only. (In an earlier amendment to the law, Congress had reasoned that radio play acts as advertising for singers and bands, so payment isn't needed.)⁴

The financial burden Internet stations face from the rule "is not slight," Lessig wrote. By one estimate, an Internet station delivering "ad-free popular music to ten thousand listeners, twenty-four hours a day," would owe \$1 million a year in recording-artists' fees, while a traditional station doing the same thing would not, he argued.

It's not surprising that existing businesses fight technological change, Lessig wrote. But, he added, the resistance comes with a cost: "It gives dinosaurs a veto over the future."

— Marcia Clemmitt

¹ For background, see "Music Settlement," transcript, "American Morning," CNN.com, May 6, 2003, <http://transcripts.cnn.com/TRANSCRIPTS/0305/06/1tm.03.html>.

² "RIAA Sends More Law Pre-Lawsuit Letters to Colleges With New School Year," press release, RIAA, www.riaa.com/newsitem.php?id=36CA9067-8061-3114-41BB-491B8B32A357.

³ Tim Wu, *Master Switch: The Rise and Fall of Information Empires* (2010), p. 106.

⁴ Lawrence Lessig, *Free Culture: The Nature and Future of Creativity* (2005), p. 197.

sell my collection of 1960s 45-rpm records to a local collector." ¹⁸

Figures about lost jobs from piracy don't add up, wrote Cato Institute Research Fellow Julian Sanchez. Research suggests that, for as many as 80 percent of free music downloads, the consumer would not actually have bought the music, even if a pirated copy had been unobtainable, he wrote. Those acts of piracy, then, cost the industry nothing, since they didn't replace potential sales, he said.

Meanwhile, in the 20 percent of cases in which piracy does replace a sale, the result is a loss to the music industry, "but not a [net] loss to the economy, since the money just ends up being spent elsewhere," Sanchez argued. That being the case, "there is no good reason to think eliminating piracy by U.S. users would yield any jobs on net." ¹⁹

Should Congress crack down harder on digital piracy?

The entertainment industry argued forcefully over the past year that a much tougher system of copyright enforcement is imperative. However, critics of the stalled SOPA and PIPA bills contend that the legislation gives a few large businesses unwarranted power to shut down websites without due process.

SOPA and PIPA "would provide needed tools to combat foreign rogue websites," said MPAA's CEO, former Sen. Christopher Dodd, D-Conn. ²⁰

PIPA puts "muscle behind closing down foreign sites whose main purpose is to steal" and that cost "working professionals (not just corporations) hundreds of millions of dollars every year," wrote Grecco, the photographer and independent filmmaker. ²¹

"Let's all agree that doing nothing is not an option any intellectual property creators can live with," said the independent-label group AZIM. ²²

Even some SOPA/PIPA critics want Congress to quickly craft tougher laws to combat piracy.

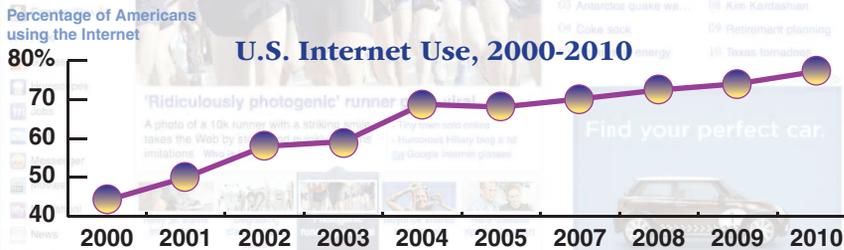
"While I'm relieved that the flawed SOPA and PIPA bills seem unlikely to pass in their current forms . . . rogue websites dedicated to the infringement of U.S. copyrights pose a public policy problem that merits . . . prompt (albeit prudent) legislative action," said Ryan Radia, associate director of policy studies at the Competitive Enterprise Institute, a free-market-oriented think tank. ²³

Others argue for more caution, however.

Trying to simply shut down sources of content is "bound to fail in today's

U.S. Internet Use Soars

More than three-fourths of Americans use the Internet, compared with fewer than half in 2000. About 240 million people are online, up from 124 million at the turn of the century.



Source: "United States of America: Internet Usage and Broadband Usage Report," Internet World Stats, February 2011, www.internetworldstats.com/am/us.htm

increasingly interactive world," where new technologies and channels that facilitate information sharing come along continually, said Cato's Sanchez. "As the success of services like [the ad-supported video-streaming site] Hulu and [movie and TV-program distributor] Netflix suggests, consumers are only too happy to pay for content that's made available in a convenient form, and at a reasonable price," he said. "If the content industries want a genuinely effective way to reduce global piracy, they should spend less time and money lobbying for new regulations and focus on providing innovative services that make piracy unattractive."²⁴

Many SOPA/PIPA critics view the bills as part of a long-running power grab by big media companies.

"I have first-hand knowledge of what the large media companies think of the Internet. They will never like it until they can control it 100 percent; of course ruining it in the process," wrote Joe Escalante, an entertainment lawyer and bassist for the punk band The Vandals. Escalante's band is being sued by the entertainment newspaper *Daily Variety* because websites unconnected to the band have posted images of album-cover art that the band withdrew from the market and scrubbed from their own website after

Variety complained that it constituted trademark infringement.²⁵

"The *Daily Variety* will claim in front of a jury, presumably with a straight face, that mere 'links' to a site that posted artwork from a discontinued CD displaying an 'infringing parody' should result in the four members of the Vandals paying . . . upwards of a million dollars" in damages, Escalante said. "If the fear is that under SOPA, the media companies will take advantage of a legal anomaly that will permit them to shut down entire websites, with the burden of proving innocence placed on the defendant, based on trumped up claims and theories, I can tell you, it's not paranoia. It is a real-world certainty."²⁶

Historically, media and entertainment companies have sought legal protection against every technology that has given the public freer access to copyrighted content, wrote Clay Shirky, a professor at New York University's interactive-telecommunications program, in New York City. "This is an industry that tried to kill Tivo [a device for recording TV shows]. . . . They tried to kill player pianos. They do this whenever a technology increases user freedom over media. Every time. Every single time."²⁷

Should the government require Internet-service providers (ISPs) to treat all websites the same?

The FCC and some technology analysts want the government to enforce rules preventing ISPs, mainly phone and cable companies, from treating different websites differently by slowing data from some websites. The aim of the enforcement, they say, would be to prevent ISPs from slowing the flow of content from companies such as video distributors or Internet phone companies that compete with an ISPs' other lines of business or with its business partners. But others argue that such "net neutrality" rules would violate ISPs' rights to conduct business as they see fit over wires and cables they own.

Advocates of net-neutrality regulation have turned traditional arguments for free-speech protections on their head, said Adam Thierer, a senior research fellow in technology policy at George Mason University's Mercatus Center, which researches free markets. They argue that barring ISPs from treating different websites differently would guarantee free speech to website owners that supply content to users. But this is a "twisted theory" of the Constitution's free-speech guarantee, said Thierer. The Constitution is written to stop government from becoming the enemy of free speech and doesn't envision "private platforms" such as ISPs taking that role, he wrote.²⁸

In fact, new rules would abridge ISPs' freedom of speech, Thierer said. ISPs are in the business of delivering content to consumers, and "the First Amendment . . . was not intended as a tool for government to control the editorial discretion of private . . . institutions."²⁹

"Disappointing one's paying end-user customers is unlikely to be a great business model over time," so "it seems unlikely that broadband ISPs are going to intentionally make a practice of slowing or blocking access to

select websites,” wrote technology analyst Barbara Esbin, a former special counsel at the Federal Communications Commission. Thus net-neutrality rules are unnecessary, she said.³⁰

The so-called “takings clause” in the Fifth Amendment to the Constitution bars the government from taking private property “for public use, without just compensation” to the owner, says Daniel Lyons, an assistant professor at Boston College Law School. Cable- and

phone-company ISPs own the wires and cables that bring Internet data into individual homes and businesses — the so-called “last mile” of Internet-content delivery — and because of that, the takings clause may apply to Internet regulations, Lyons says. “Since the 1920s there’s been a branch of law that says regulations that go too far are like a taking,” and net-neutrality rules may fall into that category, meaning that the government would have to pay ISPs to abide by them, he argues.

(In 1982, the Supreme Court ruled that the public interest required a New York landlord to give a cable-TV company access to his roof to install a cable box, as state law required, but that he was entitled to “just compensation” for doing so. The court deemed “just compensation” in the case to be just one dollar; nevertheless, the court established the principle that regulatory requirements are similar to an actual taking, says Lyons.³¹)

Many net-neutrality advocates argue that ISPs have solid business reasons



The 2005 horror movie “Snakes on a Plane,” starring Samuel L. Jackson, received a major marketing boost from bloggers and Internet movie-fan communities. After advance word of the movie leaked out, online fans distributed parodies, doctored photographs and mock videos, which the producers used to market the film and shape its plot.

www.newline.com

for slowing some data relative to others, but that rules to control the behavior are necessary.

A cable-TV company that offers broadband might be strongly motivated to slow the online delivery of movies from a competing video vendor such as Netflix, for example, says Frieden, of Pennsylvania State.

Furthermore, it’s already been done, Frieden says. ISPs have said, “We’ll never do this. We have no incentive to throttle” traffic. But in 2007, when Comcast was accused of deliberately slowing data transmitted with peer-to-peer file-sharing technology — computer programs that allow individuals to send and receive digital-media files, including music and games — first the company “said it didn’t do it, then it said it did. Players do have incentives to distort the market,” says Frieden.

(Comcast has argued that many users of file-sharing technology were transferring very large files and that slowing them was necessary in order to keep Internet traffic overall flowing. Subsequently, the company has worked to

develop methods of traffic management that would not depend on blocking content from specific websites.³²)

Furthermore, such distortion can be consequence-free for an ISP, Frieden says. “All the consumer knows is that Netflix isn’t working well, and they’ll blame Netflix,” even if the real culprit were an ISP slowing traffic, he says.

ISPs enter contracts with consumers to deliver certain amounts of Internet content at certain rates of speed, and the government could establish some kind of consumer-protection system for those contracts,

says Frieden. For example, Congress could explicitly give the FCC authority to do “light-handed” conflict resolution of specific consumer complaints about ISPs hindering traffic, he says.

Opponents of net-neutrality regulation argue that the consumer marketplace is the proper place to handle such problems, but that may not be feasible, says Jonathan Zittrain, a Harvard Law School professor of Internet law.

“If access to Facebook is important to you, and an ISP provides poor (or no) connectivity to Facebook, you can fire your ISP. That is how markets work.” But there’s a catch, he continues. “There have to be meaningful alternatives” to your nonperforming ISP, and “you have to *know* that you are getting less than you want so you are motivated to switch. Both assumptions may turn out to be wrong.” There is less ISP competition than many had hoped for, and rather than blaming one’s ISP for slow connections, “you might just think the site itself doesn’t have its act together.”³³

BACKGROUND

Communications Wars

Struggles over control of communications and media businesses have been among the most intense in economic history. Owners of older, dominant technologies have repeatedly fought innovations that threatened their businesses.³⁴

In the mid-19th century, for example, Americans communicated long distances using a single technology — the telegraph — controlled by a single company, Western Union. When, around 1880, the fledgling telephone caused telegraphy to lose its role as virtually the only swift, viable distance-communications technology, Western Union faced potential collapse. Thus, “no sooner had the firm realized the potential of the Bell company’s technology to overthrow the telegraph monopoly” than it made an all-out attempt “to kill or devour Bell,” wrote Tim Wu, a professor of Internet, media and communications law at Columbia Law School in New York.³⁵

Western Union’s effort failed, but the pattern would repeat itself many times, frequently slowing development of innovations, sometimes for decades.³⁶ (See sidebar, p. 338.)

At times, the government has stepped in to keep communications companies from snuffing out new competitors.

Beginning in the 1890s, some entrepreneurs strung their own wires through communities — attaching them to supports such as farms’ barbed-wire fences — to provide local phone service. The companies prospered, especially in rural areas and small remote towns not served by the Bell system, and in the early 1900s began banding together into larger systems.

AT&T President Theodore Vail feared for his business and believed the small

companies would provide inferior service. He began offering independent companies membership in the Bell system, on the condition that they adopt its technical standards and pay to use its long-distance lines. Many companies, which knew they were hamstrung without long-distance service, took the deal, even though AT&T did not promise to connect any calls to non-Bell customers.

The federal government, however, viewed the deals as antitrust violations, intended to snuff out AT&T’s competition. To avoid sanctions, Vail agreed to allow independents access to AT&T’s lines without joining the company and, more important, to operate AT&T henceforth as a “common carrier” — a company deemed so important to the public good that it must be required to do business in a nondiscriminatory way.³⁷

Copyright Disputes

Over the years, numerous legal fights have arisen over protecting the rights of copyright owners, such as composers and filmmakers, when emerging technology has provided new ways for others to copy, alter or publish their intellectual property.

In 1909, Congress amended copyright law for music to ensure that composers were paid for “mechanical reproductions” of their works, such as phonograph records and player-piano rolls. Previous law had granted composers the exclusive right to control whether, when and how their music was performed in public. Under the new law, however, once a composer authorized any recording of a composition, subsequent musicians had the right — the “license” — to record and distribute new recordings of the piece, as long as they paid the composer a fee set by law.

Such licensing arrangements still prevail, and over time lawmakers have expanded their use in an attempt to balance the interests of original

intellectual-property owners and those of others who want to use the works. Without such balance, “the monopoly power of rights holders . . . would stifle follow-on creativity,” such as the creativity of musicians arranging old music into a new style, wrote Harvard’s Lessig.³⁸

In recent years, intellectual-property owners have argued for controlling or even banning the use of some technology.

Soon after VCRs — machines that could record TV shows and play tapes of movies for home viewing — hit the market in the 1970s, for example, the movie and television industries sought a ban. “The VCR is to the American film producer and the America public as the Boston strangler is to the woman home alone,” Motion Picture Association of America (MPAA) President Jack Valenti told Congress in 1982.³⁹

Movie studios sued VCR inventor Sony Corp., alleging that the machines were made for the sole purpose of copyright infringement. In 1984, the Supreme Court narrowly decided the case in Sony’s favor, ruling that the recorders were most likely to be used to record TV programs to watch when convenient, a benign purpose that wouldn’t harm original creators.⁴⁰

Media Converging

The birth of digital media intensified past struggles.

When the digital revolution began, communications and media executives, like most people, viewed computers as calculating tools and scientific instruments. They missed the fact that, as computers gained more memory, everyday users not only would be able to access all kinds of media — including sound, graphics and video — through a single computer but also could manipulate those media as they wished.

Continued on p. 336

Chronology

1990s *Introduced in 1969 as a network linking a few research centers, the Internet attracts millions of users.*

1996

Phone companies unsuccessfully seek congressional ban on Internet telephone service. . . . Congress passes the Telecommunications Act, classifying cable-TV broadband Internet providers as lightly regulated “information services” but saying little else about the Internet.

1998

Congress passes Digital Millennium Copyright Act, toughening penalties for online piracy.

1999

Millions of users begin sharing music, much of it copyrighted, on Napster, first peer-to-peer file-sharing website.

2000s *Copyright owners worry as online file-sharing booms. Advocates push for requiring broadband Internet service providers (ISPs) to practice “net neutrality” by not blocking lawful content.*

2000

Judge orders Napster to shut down in wake of lawsuits by musicians and the Recording Industry Association of America (RIAA).

2003

RIAA sues or threatens lawsuits against thousands of students for alleged music piracy; Rensselaer Polytechnic Institute freshman Jesse Jordan is among those sued.

2005

Supreme Court rules that cable broadband providers don't have to open their lines to competitors. . . . FCC announces that phone companies providing broadband Internet service can operate under the same rules as cable broadband ISPs. . . . FCC will monitor all broadband ISPs to ensure that consumers can access the websites and applications they choose.

2006

Congress considers net-neutrality legislation.

2008

FCC orders cable broadband provider Comcast to stop blocking peer-to-peer file-sharing programs; Comcast complies but sues, arguing the FCC had no authority to issue the order. . . . RIAA announces it will end mass lawsuits against college students.

2009

Congress is split on net neutrality. Sen. John McCain, R-Ariz., introduces legislation to prohibit the FCC from regulating the Internet; Rep. Edward Markey, D-Mass., introduces a bill to make net neutrality national policy.

2010s *As Internet speeds rise and video streaming increases, movie and TV studios worry about illegal downloads.*

2010

Federal appeals court overturns FCC ruling in 2008 Comcast case. . . . FCC announces an “Open Internet Order,” requiring ISPs to disclose their methods for managing Inter-

net traffic and to not discriminate among websites; because of their capacity limitations, wireless broadband providers get more leeway to slow traffic.

2011

FCC Open Internet Order takes effect. . . . House passes resolution calling for the order to be rescinded; a similar measure fails in the Senate. . . . Phone company ISP Verizon sues the FCC over the order, arguing that the agency has no authority to issue it. . . . Countries including the United States, Australia, Canada, Japan and South Korea sign the Anti-Counterfeiting Trade Agreement (ACTA), requiring stronger cross-border antipiracy enforcement.

2012

Motion Picture Association of America urges Congress to toughen anti-piracy legislation. . . . Congress puts two anti-piracy bills, the Stop Online Piracy Act (SOPA) and the Protect Intellectual Property Act (PIPA), on a fast track, but House and Senate leaders pull the measures from consideration two days after Wikipedia and other websites close for a day to protest them. . . . After protests, several European countries delay signing the Anti-Counterfeiting Trade Agreement (ACTA). . . . Department of Justice shuts down Hong Kong-based Megaupload file-sharing site for violating the Digital Millennium Copyright Act. . . . Comcast announces that traffic from its Xbox streaming video service won't count against users' monthly data caps, but other video-streaming will; net-neutrality advocates say Comcast's policy endangers the Internet's standing as a neutral medium fostering economic competition.

'Remix' Culture Worries Copyright Owners

Software allows anyone to manipulate works of art.

After young fans of British author J. K. Rowling began posting renditions of her wildly popular *Harry Potter* story on their own Potter-related websites, Warner Brothers — producer of the book's film version — fought back.

Even though Rowling and her publisher, Scholastic, said they supported the young fans' creative impulses, Warner Brothers tried to block some of the websites, many of them run by children or teenagers, arguing that it wanted to prevent audience confusion about which sites were official.¹

Heather Lawver, a young American fan, circulated a petition to stop Warner's crackdown and debated a company executive on television. "There are dark forces afoot, darker even than [Potter's evil nemesis] He-Who-Must-Not-Be-Named, . . . daring to take away something so basic, so human, that it's close to murder," she wrote. "They are taking away our freedom of speech."²

Warner Brothers backed off.

The episode underscored the increasingly uneasy relationship between copyright owners and others with a financial stake in creative works and a so-called "remix" culture that creates new art by copying, building upon and altering older art.

"Remix culture is in fact not an invention of the digital age," noted Edward W. Felten, a professor of computer science and public affairs at Princeton University.³ Shakespeare, after all, famously borrowed virtually every plot twist of his play "Julius Caesar" from the Roman historian Plutarch.

New, however, is the breadth of older works that artists can incorporate, now that all art can be digitized and software allows

virtually anyone to access, remix and manipulate it, altering visual art pixel by pixel, for example.

Furthermore, while the ability to publish was once the province of professionals, today everyone can publish their creations online.

As a result, traditional distinctions between artist and audience are breaking down.

"Once upon a time . . . the edge of the stage was there. The performers are on one side. The audience is on the other side, and never the twain shall meet," said Eric Kleptone, a Brighton, England-based producer of mashups — recordings that blend tracks from other songs into new music. As media-manipulating software such as Pro Tools, for music, and Photoshop, for graphics, allows people to put their own stamp on art they love, the creator-audience dichotomy is changing, he said. Increasingly, the media-buying public expect "that they should be able to personalize [purchased media] or manipulate it in some way. Or at least have the freedom to do so."⁴

By allowing amateurs to share their creations and get feedback, the Internet spurs more amateur remixes — and makes it easier for copyright owners to find — and object to — such uses of their creative output, according to Henry Jenkins, a professor of communications at the University of Southern California. In the past, "nobody minded, really, if you copied a few songs and shared the dub tape with a friend," he wrote. "But, as those transactions came out from behind closed doors, they represented a visible, public threat to the absolute control the culture industries asserted over their intellectual property."⁵

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The secret is "digitization" — the fact that a photograph, audio recording or any other piece of information can be converted into a two-digit "binary code" that computers can store, process and manipulate.

Coded digital information, no matter how complex, is expressed as a sequence containing only zeroes and ones. Digital technology means that "I don't use . . . different kinds of digits for representing music than I use for representing video or . . . documents," said Princeton's Felten. So "where I previously had . . . separate sets of technology" for producing and viewing video and audio, for example, a home computer now becomes

"a universal machine" that can access any media and "cause a great earthquake in the media business."⁴¹

Peer-to-peer file-sharing (P2P) was one of the quake's first tremors.

Via cassette tapes and photocopiers, people have long shared their favorite copyrighted media with friends, but in 1999, the first P2P website for music sharing, Napster, came on the scene. Within months millions were using the site. Some downloaded others' copies of hard-to-obtain music, such as older songs that record companies had taken off the market, and amateur recordings, such as bootleg concert recordings.

But many also downloaded new music without paying for it. Heavy-metal band Metallica sued Napster after leaked

copies of their unreleased music appeared on the site. The trade association Recording Industry Association of America (RIAA) also sued Napster for copyright infringement, and in 2000 a federal court ordered the website to close.⁴²

The universal power of digital computing has led to a boom in the so-called "remix" culture — the creation of new art by copying and manipulating the old. Amateur and professional artists can manipulate photographs and paintings to create their own collages and animated videos, and young movie buffs intercut scenes from digitized commercial films with their own video to create unauthorized sequels to classic movies such as "Star Wars." (See sidebar, above.)

For the most part, copyright owners' response has been to ask Congress to "massively" increase "regulation of creativity in America," wrote Lawrence Lessig, a professor at Harvard Law School. As a result, "To build upon or critique the culture around us one must ask . . . for permission first. Permission is, of course, often granted — but it is not often granted to the critical or the independent."⁶

Crackdowns on amateur expression risk snuffing out a vital source of cultural progress, argued Lessig. In the past, "The ordinary ways in which ordinary individuals shared and transformed their culture — telling stories, reenacting scenes from plays or TV, participating in fan clubs, sharing music, making tapes — were left alone by the law." It was "a tradition that, for at least the first 180 years of our Republic, guaranteed creators the right to build freely upon their past."⁷

As the realization dawns that the Internet is nearly impossible to control, some copyright holders may be casting a friendlier eye on remixers, some analysts say.

Warner Brothers' subsidiary New Line Cinema, for example, actually collaborated with bloggers and Internet movie-fan communities in the making and marketing of the 2005 horror movie "Snakes



Getty Images/Jeff J. Mitchell

Young fans of Harry Potter author J. K. Rowling posted their own Harry Potter spin-offs, raising copyright concerns.

on a Plane," wrote Aram Sinnreich, an assistant professor at Rutgers University's School of Communication and Information.

"After advance word of the film was leaked . . . the one-two punch of its absurd title and a star turn by Samuel L. Jackson (perhaps the most remixed and mashed-up actor in cyberspace) attracted legions" of fans to share online "video mash-ups and remixes, doctored photographs," parodies and more, which the studio used to shape both its marketing campaign and the plot of the film itself, Sinnreich said.⁸

— Marcia Clemmitt

¹ Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (2006), p. 137.

² Quoted in *ibid.*, p. 87.

³ Edward Felten, quoted in Carlos Ovalle, transcript, "Rip, Mix, Bum, Sue: Technology, Politics and the Fight to Control Digital Media," a lecture, Oct. 12, 2004, (transcript by Carlos Ovalle), www.cs.princeton.edu/~felten/rip.

⁴ Quoted in Aram Sinnreich, *Mashed Up: Music, Technology, and the Rise of Configurable Culture* (2010), p. 109.

⁵ Jenkins, *op. cit.*, p. 137.

⁶ Lawrence Lessig, *Free Culture: The Nature and Future of Creativity* (2005), p. 71.

⁷ *Ibid.*, p. 8.

⁸ Sinnreich, *op. cit.*, p. 79.

To blunt computers' power to share and remix media, one bill introduced in Congress — but not enacted — would have required that computers come with software that can determine whether online content is copyrighted and keep copyrighted material from being shared.⁴³

Such attempts are doomed, however, according to Lessig. Any technological fix "will likely be eclipsed" in short order by new technologies that make it even easier for consumers to access and adapt media, he wrote.⁴⁴

Net Neutrality

The Internet was born in the 1960s when engineers at the Rand Corp.,

a think tank that focused on military issues, sought to devise a communications network that could survive a nuclear war.

Traditional networks — like the phone system and U.S. Postal Service — route messages through central switching points and can break down completely if vital nodes are knocked out. Rand's Paul Baran proposed a network with no central switch points but merely many smaller, widely dispersed nodes, each of which could route data to another node until a message finally reached its destination. Each message would be chopped into tiny "packets" of digital code, and each separately addressed packet would travel on its own to the destination, where a computer would reassemble all the packets into a coherent message.

Each digital packet "would be tossed like a hot potato from node to node to node, more or less in the direction of its destination, until it ended up in the proper place," explained technology and science fiction writer Bruce Sterling. "If big pieces of the network had been blown away, that simply wouldn't matter; the packets would still stay airborne, lateralled wildly across the field by whatever nodes happened to survive."⁴⁵

Soon the fledgling network was up and running, with packets traveling over telephone wires. The seven research-university computers that constituted the entire network in 1969 expanded to thousands by the early 1970s and millions by the early 1990s. Users paid to use phone lines to transmit their

Entertainment Industry Seeks New Business Plan

“There is a slow and grudging march toward progress.”

You might say the pirate hunters engaged in a little piracy of their own. At the Sundance Film Festival, in Park City, Utah, this past January, VEVO — a video website owned by music-industry giants Sony Music Entertainment and Universal Music Group — streamed a pirated ESPN football game for guests, according to technology writer Jason Kincaid. Like many who pirate, VEVO likely streamed the game illegally because doing so was convenient and because a legal stream at a reasonable price wasn't available, Kincaid said.¹

Sony and Universal have been at the forefront of protecting profits and fighting music and movie piracy, but as VEVO's display of the game underscores, they could be fighting a losing battle. Eventually, the Internet could make a wide variety of media — movies, TV programs, music CDs and other offerings — more easily and cheaply accessible to everyone, on demand, even if it means streaming content illegally.

Yet, while conventional wisdom says that such a trend would be financially devastating for media companies, the sales effects of piracy — and of laws that crack down on it — aren't as clear-cut as they might seem, some experts argue.

For example, in one study, researchers found that while pirated movies released before a film's debut significantly reduce opening-weekend box-office revenues, the piracy had no impact on the box-office take after that. That might have been because only fervent fans who attend openings want to see

movies pre-release.²

In France, where an ultra-tough three-strikes-and-you're-banned-from-the-Internet law was adopted in 2009, aimed at individual users, piracy rose after enactment, as illegal downloaders switched to websites not explicitly targeted by the law. Furthermore, some of the most active music pirates in the study were also among the most frequent music buyers, so banning them from the Internet could wind up depressing sales, the researchers said.³

Of course, big media companies that rely on above-the-board sales of movies and music would rather see piracy disappear. But Internet sales of creative works may not be as gloomy as some may think, thanks in large part to an expanding online marketplace.

“It's true that CD sales are down precipitously,” but the size of the music sector overall “actually grew last year,” says Aram Sinnreich, an assistant professor at Rutgers University's School of Communication and Information. While some growth came from a rebounding economy, he said, the rest was likely due to the growing universe of online venues for accessing music conveniently and economically.

At Apple's iTunes site, listeners can buy the exact songs they like for a wallet-friendly \$1.29 per tune. At the London-based ad- and subscription-supported website Spotify, users can stream and share songs the company has licensed from record labels, without buying, if they choose, says Sinnreich.

data, but, otherwise, phone companies showed no interest in the medium.

As a result, the Internet initially developed without the strife that attended the early spread of such technologies as the telephone.

“There were no . . . Internet service providers . . . no commercial anything. So nobody . . . saw the original Internet initiative as a threat to their business,” said Robert Kahn, an early Internet developer.⁴⁶

In 1972, AT&T actually turned down an offer from the federal government to run the Internet.⁴⁷

As late as 1996, when Congress undertook its first major overhaul of telecommunications law since 1934, lawmakers, too, ignored the Internet, mentioning it only a handful of times. Instead, the Telecommunications Act of 1996 focused on provisions lawmakers

hoped would create more competition within each of the different forms of data transport, such as cable-TV or local landline phone service. The law also set up different regulatory structures for the various modes of information transfer, with cable companies operating under a completely different set of rules than telephone companies.⁴⁸

Lawmakers failed to grapple with the rapidly materializing prospect that the Internet would soon become a competitor to cable-TV and phone companies, transmitting video and audio data. They also did not foresee that Internet data would soon be carried by numerous modes, including TV cables, phone wires, high-speed wires, fiber-optic cables and wireless transmitters, some of which their new law had put under separate, very different, systems of regulation.

The main Internet-related provision

in the 1996 law, which continues to have significant consequences, stems from these different levels of regulation. Specifically, the law states that cable-TV companies' broadband — or “high-speed” — Internet service will operate as a loosely regulated “information service” rather than a tightly regulated “telecommunications carrier,” such as a phone company.

“Telecommunications carriers” — like the “common carriers” of old — must offer access to their lines to anyone who seeks it, including competing businesses. For this reason, slow, dial-up Internet service — which travels over regular phone lines — has been offered by many independent ISPs to whom phone companies are required to open their lines.

By contrast, in dubbing cable broadband Internet an “information service,”

In addition, “music publishers are having a field day,” as downloads provide an unprecedented opportunity to sell the reams of older music to which they own rights, Sinnreich says. “Back catalogs used to be a hassle. You wouldn’t distribute [CDs by 1970s singer-songwriter] Dan Fogelberg to Walmart” because too few would buy them, he says. But the CDs can be sold as downloads because no manufacturer or store shelf space is needed. And with computer tools that break recorded music into individual tracks and put it back together in new ways, “you can have [digital music producer] Danger Mouse do a remix of Dan Fogelberg” that may sell to a new generation.

What’s needed, say many Internet experts, are new business and copyright models that reasonably compensate artists while helping consumers take advantage of online streaming, sharing and buying.

Such models might involve “licensing” — with websites buying the right to distribute songs, films or TV shows by selling ads or subscriptions and forwarding payment to industry groups such as the Recording Industry Association of America (RIAA) to distribute among the artists in proportion to how much their creative works were used.

Historically, that’s been the solution to disputes between copyright holders and new technology, says David Touve, an assistant professor of business administration at Washington and Lee University, in Lexington, Va. “Radio is a massive infringer

of copyright — except that they have a license,” he quips. The challenge is “figuring out at what license value both copyright owners and others will be willing to participate,” then devising an appropriate licensing scheme, he says.

Online technologies could help more artists get paid for their work, says Sinnreich. According to the RIAA, under “today’s copyright-intensive system, only one in 10 albums make back their money” and, “if they don’t, artists don’t get paid. Can we develop a model that compensates a greater number of musicians?”

Websites such as TuneCore, which helps musicians place music on retail download sites such as Amazon, and CD Baby — a sales site for independent artists — show that payment can be distributed more widely and fairly among individual copyright holders, Sinnreich says. “There is a slow and grudging march toward progress on the economic front.”

— Marcia Clemmitt

¹ Jason Kincaid, “Music Labels’ Joint Venture, VEVO, Shows Pirated NFL Game at Sundance,” *TechCrunch*, Feb. 9, 2012, <http://techcrunch.com/2012/02/09/music-labels-joint-venture-vevo-shows-pirated-espn-game-at-sundance>.

² “Selected Research Findings,” “Digital Media,” Heinz College iLab website, www.heinz.cmu.edu/ilab/research/digital-media/index.aspx.

³ For background, see David Murphy, “French Anti-Piracy Law Actually Increasing Piracy,” *PC Magazine*, March 28, 2010, www.pcmag.com/article2/0,2817,2361925,00.asp.

Congress lumped it with “luxuries, non-essentials that don’t need the same level of protection,” says Pennsylvania State’s Frieden. That decision — plus fast-moving technological change — set up the so-called “net neutrality” debate that has raged ever since.

For one thing, soon after passage of the 1996 law, phone companies joined cable TV companies as providers of high-speed Internet, laying down their own technologically advanced networks — DSL, or digital subscriber lines, and, later, wireless networks and fiber-optic cable.

Furthermore, in the late 1990s and accelerating in the 2000s, the Internet’s importance to public life and business soared as it became a one-stop shop for media and communications, as well as business functions such as shopping and banking. For many observers, this raised the question of whether the public’s grow-

ing political and economic dependence on online access required all ISPs to operate as a kind of common carrier.

Further complicating matters, so-called packet-sniffing technology was developed that gave ISPs the ability to find out what kind of data a website was transmitting and, to some degree at least, slow or speed up that data.

In the early 2000s, calls began for the government to require all ISPs — including the lightly regulated cable companies — to abide by a principle of “net neutrality,” treating data from all websites the same. In 2005, however, the Supreme Court and the FCC moved the other way. In a key ruling based on Congress’ classification of cable broadband as an “information service,” the Supreme Court ruled 6-3 that a cable company had no obligation to open its lines to a competing, independent ISP.⁴⁹

The ruling opened the door for telephone companies to argue that if cable broadband was not obliged to follow common-carrier-type rules, their broadband services shouldn’t be required to do so either.

In 2005, the FCC agreed. Beginning in August 2006, phone companies would no longer be required to offer competing ISPs, such as AOL, free access to their DSL connections. Dial-up Internet would still travel free over regular phone lines, however.⁵⁰

The FCC was not entirely comfortable with leaving ISPs with so much discretion to block competitors, however. It announced that it would monitor ISPs to protect consumers’ right to access and run any lawful websites, applications or services and link to the Internet any devices that would not harm the ISP network.

In 2008, the U.S. Court of Appeals for the District of Columbia ruled that cable giant Comcast had violated those policies when it selectively blocked some users' peer-to-peer file-sharing, which Comcast said it did to prevent Internet bottlenecks. In 2010, however, the same court decreed that, under the 1966 law, the FCC had no authority to impose common-carrier-type rules on cable broadband.⁵¹

Lawmakers are sharply divided. In 2009, Sen. John McCain, R-Ariz., introduced a bill that, with a few exceptions, would have banned the FCC from issuing any rules governing the Internet. That same year Rep. Edward Markey, D-Mass., introduced legislation to establish net neutrality as national policy.

Technical complexity hampers the progress, says Princeton's Felten. "There's a general consensus" that requiring ISPs to be evenhanded has value, "but how do you draw the line between reasonable network management and discrimination? That's hard to talk about" in legislative language, he says.

In December 2010, the FCC adopted an "Open Internet Order," proposing to maintain net neutrality through three rules. Network operators must:

- publicly disclose methods for managing network traffic;
- not block legal applications or websites, except as required for network management;
- not practice "unreasonable discrimination" among websites.

Only the "no blocking" and public-disclosure rules will apply to wireless broadband. Unlike wired transmission,



German Web entrepreneur Kim Dotcom, founder of Megaupload.com, a file-sharing website, leaves an Auckland, New Zealand, court on Feb. 22, 2012, after being released on bail. He was arrested at the request of the U.S. Justice Department, which is seeking to extradite him on online piracy charges.

AFP/Getty Images/Michael Bradley

wireless leaks a large amount of its signal into the air, experiences significant signal interference and can't easily add more capacity, as wired networks can. Therefore, as Internet traffic increases, wireless networks might become hopelessly congested without aggressive traffic management, the agency noted.⁵²

The order took effect on Nov. 20, 2011. ■

CURRENT SITUATION

Going Dark

After seeming to be on the fast track toward enacting strict new online copyright enforcement, Congress has backed away amid protests by individuals and some major Internet players, including Google and Wikipedia. Meanwhile, some lawmakers are vowing to stop the FCC's net-neutrality order.

In January, Congress postponed long-expected floor votes for SOPA (H.R. 3261), introduced last year in the House by Smith, the Texas Republican — and PIPA — the Protect Intellectual Property Act (S. 968), introduced last year by Sen. Patrick Leahy, D-Vt.⁵³

The bills were intended to help copyright owners fight media piracy that websites such as the Swedish site The Pirate Bay facilitate. The Pirate Bay and other sites host so-called bit-torrent files and other software that allow users to share massive audio and video files, many of which are

copyrighted. Entertainment industries want enhanced enforcement to stop it.

Posting copyrighted files online without paying is already illegal under the 1998 Digital Millennium Copyright Act (DMCA).⁵⁴ The entertainment industry argues, however, that, because the law is tougher on individual copyright infringers than on websites where the material is posted, it goes after small-time pirates while passing up the chance to shut off piracy at its source by forcing entire piracy-facilitating websites offline.

SOPA would give the government a quick path to order advertising networks and online-payment companies such as PayPal to cut off service to websites where copyright infringement is alleged to occur. It would bar search engines from linking to those sites and require ISPs to block access to them. Copyright owners themselves could order advertising and payment companies to stop doing business with websites that post copyrighted material and sue if companies don't comply.

PIPA takes a similar approach but differs in some particulars. For example, it would not require search engines

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At Issue:

Should lawmakers support the FCC's net-neutrality rules?



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FROM TESTIMONY BEFORE THE HOUSE JUDICIARY
SUBCOMMITTEE ON INTELLECTUAL PROPERTY,
COMPETITION AND THE INTERNET, FEB. 15, 2011

an open Internet is vitally important to political discourse, societal interactions, commercial transactions, innovation, entrepreneurship and job creation in the United States. However, past actions by incumbent broadband Internet access providers have threatened the preservation of an open internet resulting in the need for clear, enforceable baseline network-neutrality rules.

Network-neutrality rules are necessary to protect consumers against the monopoly and duopoly behavior of broadband Internet access providers in our country. Contrary to assertions by industry incumbents that consumers enjoy competition when it comes to broadband access choice and can simply switch, the Federal Communications Commission's (FCC's) National Broadband Plan reported that 13 percent of Americans have only one broadband access provider, and 78 percent of Americans have only two broadband Internet access providers.

Cable and telephone incumbents have asserted that network-neutrality rules are unnecessary and that the market has never demonstrated the need for rules. However, there is a documented history of harmful actions taken by broadband Internet access providers. The commission observed that it had acted on two high-profile incidents of blocking but recounted evidence of numerous other incidents. . . .

AT&T blocked certain applications, such as SlingBox video streaming, Skype and Google voice, from its mobile network while permitting its own streaming and voice products to use the same network. Cox and RCN both admitted to slowing or degrading Internet traffic at times. Both providers deny wrongdoing and claim that these practices are designed to handle congestion, but in neither case did providers disclose their traffic-management practices to subscribers. It is ironic that providers which publicly proclaim they have no intention of ever actually blocking or degrading content routinely include statements in their terms of service that would allow them to engage in precisely these practices — and without prior notice to consumers.

I want to mention Public Knowledge's concern with recent discussions in Congress to invoke the Congressional Review Act (CRA) to repeal the FCC network-neutrality rules. Enactment of a CRA repeal of the FCC's network-neutrality rules would virtually eliminate the agency's authority to protect an open Internet.

I urge members of the committee to recognize that the economic benefits of the Internet are entirely based on ensuring that it remains an open and free marketplace and that the federal government has an integral role to play in that regard.



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proponents of net-neutrality regulation argue that the Internet's defining feature — and the key to its unarguable success — is the content-neutral routing and transport of individual packets throughout the network by Internet service providers, Internet backbones and other individual networks that make up the Internet.

As evidenced in all of my writings on the digital revolution, I share the enthusiasm for the open internet. I just don't believe there is any evidence of a need for regulatory intervention to "save" this robust ecosystem, or that the Federal Communications Commission (FCC) had the authority to do so.

As with any lawmaking involving disruptive technologies, moreover, the risk of unintended consequences is high.

There was no need for new regulation. Despite thousands of pages of comments from parties on all sides of the issue, in the end the [FCC] majority could only identify four incidents in the last 10 years of what it believed to be non-neutral behavior. All four were quickly resolved outside the agency's adjudication processes. Yet these four incidents provide the sole evidence of a need to regulate. With no hint of market failure, the majority instead has issued what it calls a "prophylactic rule" it hopes will deter any actual problems in the future.

But maybe these four incidents are not what's really driving the push for FCC regulation of Internet access. Maybe the real problem is, as many regulatory advocates argue vaguely, the lack of "competition" for broadband. According to the National Broadband Plan, 5 percent of the U.S. population still doesn't have access to any wireless broadband provider. In many parts of the country only two providers are available, and in others the offered speeds of alternatives vary greatly, leaving users without high-speed alternatives.

If lack of competition is the problem, though, why not solve the problem? Multiple technologies have been used to deliver broadband access to consumers, including DSL, coaxial cable, cellular, wireless and broadband over power lines (BPL). But rather than promote multiple technologies, the FCC has done just the opposite. For example, the agency has sided with some state governments who argued successfully that they can prevent municipalities from offering telecommunications service. And the commission has dragged its feet on approving trials for BPL.

Why does anyone believe the FCC can "prophylactically" solve a problem dealing with an emerging, rapidly evolving new technology that has thrived in the last decade in part because it was unregulated?

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to remove infringing sites from their indexes and would set up a different legal process for seeking court orders.

PIPA is “a strong and balanced approach to protecting intellectual property through a . . . system that leverages the most relevant players in the Internet ecosystem,” Leahy said in early January.⁵⁵

Only a few days later, though, thousands of website owners staged a dramatic protest against what many called copyright owners’ overreach. On Jan. 18, sites including Wikipedia, the social-media site Reddit, and Boing Boing shut down for the day, redirecting visitors to explanations of their objections to the bills. Other sites, including Google, expressed support for the protests, and millions signed online petitions against the legislation.⁵⁶

“It’s not hard to imagine . . . that a service provider, acting with abundance of caution and out of its own self-interest, will simply cut off services to entire sites that have been accused of infringement, even if the court order only applies to a portion of the site,” wrote Christine Montgomery, president of the Online News Association, a digital journalists’ organization.⁵⁷

The ferocity of the fight is driven by the movie industry, says Kevin J. Greene, a professor of intellectual-property and entertainment law at Thomas Jefferson School of Law, in San Diego. The MPAA spent around \$1 million a month fighting for the legislation during the last four to six months before Congress dropped the bills, he says. “Their fears

are legitimate,” though, especially when it comes to how piracy affects global sales, he says. “In the online world, it’s said that if you have a video game to sell in China, you’ll sell one copy” because the rest will be pirated.

Nevertheless, the MPAA “said that the problem they were going after was foreign websites, but the language in the bill was so broad” that it casts doubt on that claim, says Greene. “It looks more like they just wanted more

the end, the dispute was “monopoly against monopoly, a clash of very big players,” with Google and Facebook pitted openly against entertainment-industry giants such as Sony for the first time, says Robert W. Gehl, an assistant professor of communication at the University of Utah, in Salt Lake.

Progress toward an anti-piracy treaty once thought to be on the fast track to adoption also slowed this year.

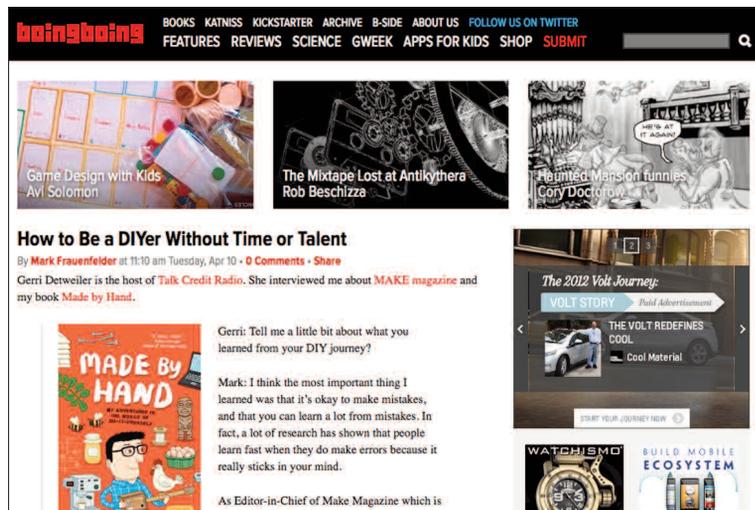
In October 2011, countries including Australia, Canada, Japan, Morocco, New Zealand, Singapore, South Korea and the United States signed the Anti-Counterfeiting Trade Agreement (ACTA), which would set tough international standards for pursuing copyright enforcement and other anticounterfeiting actions.⁵⁹ This year, however, protests in countries such as the U.K., Germany, Poland and the Netherlands have led several European countries to postpone signing the measure.⁶⁰

The White House Office of the U.S. Trade Representative promises that the compact will “support American jobs in innovative and creative industries.”⁶¹

But opponents argue that while the treaty targets “commercial-scale piracy,” its language is so vague that it might criminalize small-scale noncommercial file-sharing that involves no financial gain and is handled in civil courts today.⁶²

Net Neutrality in Court

The FCC’s plan to monitor ISPs for possible discrimination against particular websites remains under fire. In 2011, a joint congressional resolution dis-



Boing Boing and thousands of other websites, including Wikipedia and Reddit, shut down on Jan. 18, 2012, to protest proposed legislation to block pirating of online copyrighted material. The sites oppose the Stop Online Piracy Act and the Protect Intellectual Property Act, which they claim would amount to censorship. Posting copyrighted files online without paying is already illegal, but supporters of the legislation, principally the entertainment industry, argue tougher laws are needed to stop piracy at its source.

weapons in their arsenal” against copyright infringement in general, even though “that arsenal has been getting bigger and bigger for years.” (The MPAA did not respond to *CQ Researcher*’s request for comment.)

On Jan. 20, congressional leaders withdrew the bills from consideration.⁵⁸

The protests themselves were a kind of watershed in Internet history — “the first time the Internet rose to defend itself,” says Ippolito, of the University of Maine.

Others doubt that grassroots activism played much of a role, however. In

CQ Press/Screenshot

approving the rule — and ordering the agency to refrain from regulating the Internet altogether until Congress issues directions for how to do so — passed the House but failed in the Senate.⁶³

Lawsuits questioning the order are proceeding.

On Sept. 30, 2011, New York City-based Verizon Communications filed suit, arguing that the order is unnecessary and that the FCC had no legal authority to promulgate it. “We are deeply concerned by the FCC’s assertion of broad authority to impose potentially sweeping and unneeded regulations on broadband networks and services and on the Internet itself,” said Senior Vice President Michael E. Glover.⁶⁴

Yet, the Massachusetts-based media-reform advocacy group Free Press also has filed suit, arguing that the rule doesn’t go far enough. “The final rules . . . fail to protect wireless users from discrimination,” an “arbitrary distinction” between regulations for wireless and wired Internet that is “unjustified,” said Policy Director Matt Wood.⁶⁵

Some analysts say Congress must act to clarify the situation for consumers, the FCC and the courts.

ISP subscribers “don’t expect anybody to mess with” their data delivery, says Frieden, of Pennsylvania State. For that reason, “Congress needs to clarify the law,” stipulating exactly what power the FCC has to settle disputes between consumers and ISPs, he says. “You can revile government and hate the courts but you need some kind of referee here.” ■

OUTLOOK

Continuing Battles

It’s anybody’s guess how the ongoing battles over control of digital intellectual property and management of

the Internet’s traffic flows will turn out.

This year’s heated debate over SOPA and PIPA, however, did reveal something new, says Greene, of Thomas Jefferson Law School. For the first time in a fight over copyrights, “the motion picture industry was up against somebody as well financed as they are” — Internet giants such as Google and Facebook — and that fact is what slowed the bills down, he says.

If SOPA or PIPA were enacted, it would break a “deal cut in 1998” when Congress, the entertainment industry and Internet businesses negotiated the Digital Millennium Copyright Act, Greene says. At that time, everyone agreed that “there’s a lot of piracy online but also that we don’t want ISPs to actually have to police it,” he says.

Recently, however, MPAA came back with new proposals, asking Congress to require ISPs to do just that. In the past, they’ve gotten what they wanted through backroom channels, Greene says. This time, though, the Internet industry “has more power and money than the entertainment industry.”

Many analysts worry that the concerns of the public and of small business won’t be heard in the debates.

“Nobody, except for some poorly funded organizations” such as the San Francisco-based Electronic Frontier Foundation — which advocates on civil-liberties issues related to computers — “are standing up for the consumer and citizen,” says Aram Sinnreich, an assistant professor at Rutgers University’s School of Communication and Information. And those groups have trouble enlisting support “since it’s difficult to make these arguments in terms that make sense to non-policy wonks,” he says.

Ironically, while the goal of net-neutrality advocates is ensuring that new, small organizations with good ideas get a chance to grow online, such organizations are left out of legislative discussions, says Felten, of Princeton. “When it comes to small companies in the start-up culture, and small business as an

engine of growth, there’s less understanding than there could be” of what’s needed. “People in government look to large, established companies” for guidance on shaping the laws, he says.

Most alarming to some is the likelihood that powerful industries’ desire to control online behavior — such as by detecting downloads of copyrighted media — “will overlap with a political interest in overseeing citizens’ online behavior,” says Sinnreich.

“As committed as we are to freedom, our government and every other government in the world has a prevailing interest in surveillance and control, which is truly scary if it aligns with corporate interest in the same thing.” ■

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Esbin, Barbara S., "Net Neutrality: A Further Take on the Debate," *Progress on Point, The Progress and Freedom Foundation*, December 2009, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1529090.

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Gilroy, Angele A., "Access to Broadband Networks: The Net Neutrality Debate," *Congressional Research Service*, April 15, 2011, <http://opencrs.com/document/R40616>.

An analyst for Congress' nonpartisan research office describes the history and legislative, regulatory, judicial and commercial issues involved in the debate over net neutrality.

Thierer, Adam, "Net Neutrality Regulation & the First Amendment," *The Technology Liberation Front*, Dec. 9, 2009, <http://techliberation.com/2009/12/09/net-neutrality-regulation-the-first-amendment>.

A libertarian telecommunications analyst argues that net-neutrality advocates turn the Constitution's First Amendment on its head when they argue that in order to preserve freedom of speech Internet service providers (ISPs) must treat all content the same. In fact, he writes, net-neutrality rules would assault ISPs' free-speech rights by substituting government rules for ISPs' own editorial judgment.

The Next Step:

Additional Articles from Current Periodicals

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Lynch, Brendan, "Backlash Over Piracy Bills," *Boston Herald*, Jan. 15, 2012, p. 8, bostonherald.com/business/technology/general/view/20220115backlash_over_piracy_bills_websites_spar_over_rules_for_internet.

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A Belgian choreographer accused pop star Beyoncé of copying dance moves in a recent music video without permission.

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Nashville's country-music industry has spent at least \$4 million to lobby Congress to pass the Stop Online Piracy Act.

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