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Blocking Access to Foreign Pirate Sites: A Long-Overdue Task for Congress

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More than a decade after the overheated SOPA/PIPA debate, experience from around the world shows that blocking access to piracy websites is an effective way to protect copyright holders and increase legal content consumption without harming legal commerce or free expression.

KEY TAKEAWAYS

- Digital piracy undermines creators, athletes, innovators, and rightsholders. Yet nearly one-third of Americans consume pirated content—and America leads all developed countries in its sheer number of visits to pirate sites.
- Digital piracy constitutes a multi-billion-dollar industry of stolen content that defrauds consumers and exposes them to a wide array of cyber-vulnerabilities.
- Although the United States has tools to combat digital piracy domestically, its regulatory framework remains insufficient because it lacks jurisdiction over foreign sites.
- The United States should join the more than 50 countries that permit website blocking and the 39 countries that actively block pirate sites.
- Website blocking effectively reduces visits to pirate sites and encourages users to shift to legal content. Best practice would entail allowing courts to rule on the orders, implementing a multifaceted approach to blocking.
- As Congress revisits the debate over website blocking, certain interest groups will attempt to generate fear by rehashing false and misleading arguments made over a decade ago—arguments that experience has proven to be unfounded.

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INTRODUCTION

The United States leads in visits to pirate sites among developed countries, and the share of these visits globally increased 22 percent from 2018 to 2021.[1] America ranks first partly because it is one of the few countries in the world that does not authorize blocking injunctions of pirate sites, and its weaker enforcement mechanisms against foreign digital piracy contribute significantly to the massive consumption of what is, in practice, stolen content. U.S. legal framework enables law enforcement to prosecute domestic piracy websites, but it is powerless to stop foreign pirates who are only a "click away" from American internet users.

This illegal business is on the rise. Nearly one-third of Americans have reported consuming online pirated content.[2] Ten percent of users of copyright-infringing products in the United States pay to access stolen content, funding this criminal activity and simultaneously making them more likely to be targeted for fraud, scams, and other nefarious online activities.

America's share of global visits to pirate sites rose from 9 percent in 2018 to 11 percent by 2021.

Advocacy groups that turn a blind eye to this crime will likely argue that the "information should be free" and the Internet should not and cannot be regulated. Policymakers should reject this argumentative line, as Internet service providers (ISPs) already rightly block a variety of content on the Internet, such as child pornography and malware. Blocking content piracy is no different.

As Congress considers initiatives to codify the blocking of foreign pirate websites into law, it is time to revisit the effectiveness of website blocking and its implementation worldwide. An evidence-based discussion can help Congress not succumb to arguments touted a decade ago. The reality is that well-designed website blocking measures reduce online piracy, increase demand for legitimate content, and do not lead to the blocking of legal content. In fact, at least 50 countries have legal frameworks enabling website blocking injunctions, and at least 39 actively block pirate sites. Countries such as Canada and the United Kingdom have demonstrated that good governance leads to technically sound and effective blocking of foreign pirate sites.

UNDERSTANDING THE DIGITAL PIRACY INDUSTRY

Digital Piracy: A Profit-Driven Criminal Activity

Digital piracy is a widespread and lucrative illegal industry. Several attempts to quantify the scale of this criminal enterprise estimate that it reaches into the billions. For instance, illicit Internet Protocol Television (IPTV) subscriptions generated approximately $1 billion annually in 2020, and pirate services offering supposedly "free" movies and TV shows generated about $1.3 billion in revenue in 2021.[3]

The economic loss posed by the digital pirate market is significantly larger than the revenues these criminals receive. Regarding subscriptions, digital pirate services charge less than legal platforms do to attract customers. Pirate sites, by nature, do not pay taxes, copyright fees, or licensing fees. The U.S. Chamber of Commerce's Global Innovation Policy Center estimates annual losses from digital piracy at between $29 billion and $71 billion, and that is only in movies and TV shows.[4] Park Associates, a market research firm, projects losses exceeding $113 billion by 2027, estimating that the value of fraudulent advertising to consumers will reach $700 million that year.[5]

Digital piracy represents a criminal activity that harms both creators and consumers. Some theoretical estimates assign a shadow value to household consumption of pirated digital content, giving an intangible value to consumers based on their enjoyment of these products.[6] In reality, digital piracy represents a transfer of wealth from artists and content creators to criminals, often operating outside the United States. Moreover, consumers of pirated content are also vulnerable to fraud, scams, and other cybercrimes.

The Business Model of Digital Pirates

Digital pirates are not providing an illegal service because they believe in freedom of speech; they are trying to make money, often at the expense of those receiving the pirated service. Since 2009, the Information Technology and Innovation Foundation (ITIF) has reported that the revenue sources of pirate websites primarily come from advertising and selling illegal content disguised as legitimate activities.[7] As the digital economy expands, so does the revenue stream for digital criminals. For example, illegal websites have benefited from the rise of intermediaries that aggregate ad space, or ad exchanges, making it more difficult to track where products and brands are advertised.[8]

Advertising Revenues

Advertising remains the most traditional income source for digital pirates. In 2021, pirate websites featuring stolen movies, TV shows, games, and live events generated an estimated $1.3 billion in ad revenues.[9] Although the supply of online copyright-infringing content is diverse, the top 10 highest ad-driven pirate sites account for 17 percent of the total annual revenues from advertising in this illegal industry.[10]

Pirate websites motivated by ad revenues also defraud advertisers. Companies often pay without knowing that their brand is associated with an illegal site masquerading as a licit one, exposing them to potential reputational damage. The Trustworthy Accountability Group launched Project Brand Integrity in 2019, an initiative to prevent companies from associating their brand with pirate sites.[11] Still, advertisers spend between $120,000 and $1.2 million on illegally distributing content on streaming sites, according to DeepSee, a market analytics and intelligence firm.[12] Despite all these efforts, pirate sites represent between 0.2 and 3 percent of advertisement requests (i.e., bidstreams), with a historical average of 1 percent.[13]

The crackdown on Kickass Torrents (KAT) illustrates the advertising revenue generated by digital piracy. In 2016, U.S. authorities charged the owner of this site, a file-sharing website primarily featuring copyright-infringing content, for illegally reproducing and distributing pirated content valued at over $1 billion.[14] KAT's estimated annual advertising revenue at the time fluctuated between $12.5 million and $22.3 million. By 2016, courts in Belgium, Denmark, Ireland, Italy, Malaysia, and the United Kingdom had already ordered blocking injunctions to ISPs to remove KAT.

Revenues from advertisements are common on lawful websites and platforms, and incidental copyright infringement may inadvertently occur among legitimate sites. In such scenarios, courts should determine that the primary purpose of an incidentally IP-infringing site is not the large-scale distribution of pirated material, and they should not order a blocking injunction. Canada's legislation, for example, refers to incidental inclusions of cinematographic works, sound recordings, and communication signals to copyright-owned content exhibited unintentionally and without commercial value in their own right.[15]

Subscription Revenues

Some pirate sites charge for providing a subscription to access stolen content. There are about 130 commonly used subscription-based pirate sites in the United States, some with up to 90 percent profit margins.[16] Some copyright-infringing websites disguise themselves as legitimate sites to expand their reach via search engines and promote themselves on social media, persuading potential customers to purchase their services. However, other websites do not try to persuade customers that they are legal—they are evidently pirate sites, and still, they find a demand willing to pay for it.

Subscription to pirate sites typically offers on-demand services, but unauthorized real-time access to live broadcasts is rising. In November 2024, authorities in Italy dismantled an international criminal network with more than 22 million subscribers and revenues of more than €3 billion annually.[17] Considering the affected broadcast companies, the combined damage surpassed €10 billion. This network used a system to "capture and resell" live and on-demand content, promoting the subscription to the illegal service using social media platforms, including Telegram. This system used servers based in Hong Kong and Romania to capture satellite television and retransmit the content illegally to European customers. In addition, devices such as high-quality IPTV services are also used to sell monthly or annual subscriptions. In Europe and the United Kingdom, more than 17 million people use pirate IPTV services, with an average subscription of €5 per month. This produces illicit revenues of more than €1 billion annually.[18]

Users of pirate websites are three times more likely to report malware, and those who subscribe to pirate sites using a credit card are four times more prone to malware attacks.

Malware and Cybercrime

Consumers of pirate websites are more exposed to cyberattacks, and cyberpirates profit from that. As these illegal sites use shady tactics to circumvent the law, they target their users by tricking them into downloading malware.[19] Malware is software installed on devices without the user's knowledge, and it is primarily used to steal personal information, potentially leading to identity theft, demanding payment, scrambling data, or further compromising a device to install more malware.[20] An analysis of over 700 pirated software samples in Southeast Asia concludes that antivirus programs detected that all of them are contaminated, with 35 percent containing Trojans and 34 percent containing adware (a form of malware).[21]

The use of malware as a revenue stream is on the rise among pirates. Users of pirate websites are three times more likely to report malware, and those who subscribe to pirate sites using a credit card are four times more prone to malware attacks.[22] Ironically, some online criminals create copycats of pirate websites to install malware and steal users' information.[23]

Digital pirates combine their revenue streams to reinforce one another. For example, 80 percent of pirate sites promote "malvertising," a technique to insert malware in advertisements.[24] According to Digital Citizens Alliance, malvertising represents 12 percent of the total ads on pirate sites, at an estimated revenue of at least $121 million, of which more than half come from the United States alone.[25]

UNDERSTANDING WEBSITE BLOCKING

Key Concepts

Measures against online copyright infringement can target the demand side (i.e., Internet users consuming stolen content) or the supply side (i.e., digital pirates and their sites). The measures targeting the demand side often include awareness and education campaigns, such as informing people about the dangers of accessing illegal products, in order to induce a change in consumer behavior. Other approaches targeting the demand side include attempts to punish consumers, such as France's failed effort to implement a "three-strikes" policy to fine or ban Internet access in order to punish consumers engaging in piracy.[26] Supply-side initiatives combating digital piracy focus more on preventing the facilitation of copyright-infringing content. These measures include prosecuting digital pirates, disrupting their financial channels, de-ranking pirate sites, implementing domain seizures, and deploying website blocking.[27]

Website Blocking

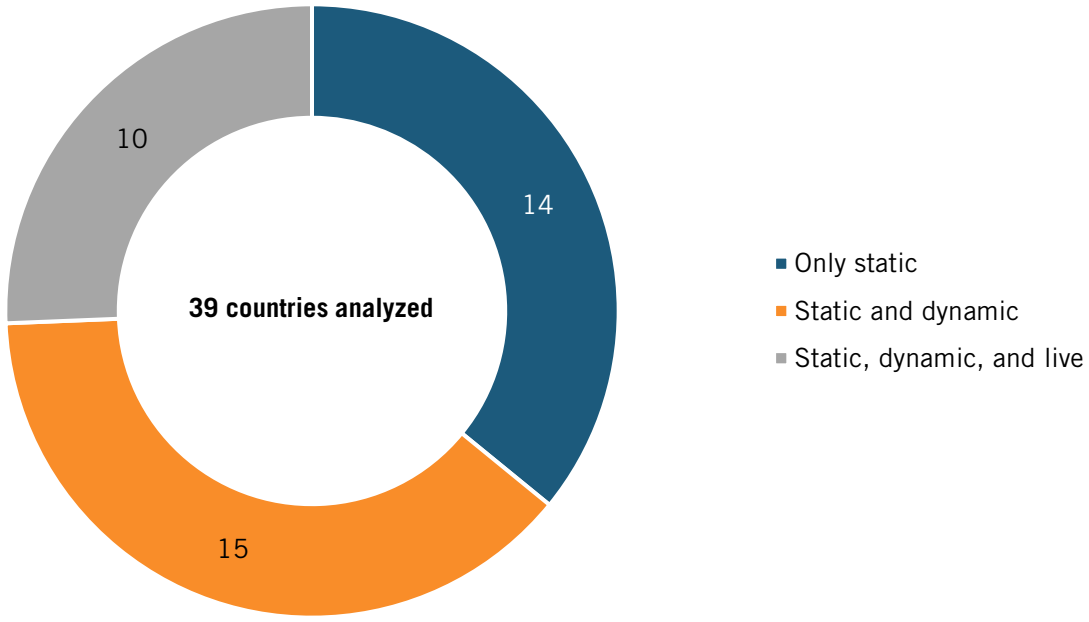
Website blocking legally restricts users' access to websites hosting pirated content by disabling access to specific Domain Name System (DNS) addresses, Internet Protocol (IP) addresses, Uniform Resource Locators (URLs), or a combination of these. To block a website, rightsholders petition an authority (typically a court) to issue a blocking injunction to ISPs. ISPs, acting as "highway controllers" of the Internet, can efficiently restrict access to illegal sites, often with relatively low technical cost.[28] As appendix A shows, at least 50 countries can legally issue some form of website blocking, and at least 39 of them actively do so. Blocking orders are primarily enforced through court orders, though government agencies also occasionally issue them.

Types of Website Blocking

The extent of the blocking orders depends on whether the authority considers that pirates can change the websites' addresses and domains after being blocked. Thus, a *static* blocking injunction is one in which ISPs can only block a fixed list of DNS addresses, IP addresses, or URLs, and any new updates or additions to this list would require a new blocking order. In contrast, a *dynamic* blocking order allows rightsholders to update the block list of addresses and domains as new proxy sites emerge, without needing a new blocking order. Finally, *live* blocking orders require ISPs to block pirate sites' streaming in real time, often temporarily, to protect live content, such as sporting events.[29]

Most countries allow both static and dynamic blocking orders. Figure 1 summarizes the blocking orders permitted in the countries listed in appendix A, indicating that in at least 25 countries, static and dynamic orders are allowed, with live blocking permitted in 10 of those countries. Out of the analyzed countries, 14 only authorize static blocking orders.

Figure 1. Types of blocking (number of countries)



Different Levels of Blocking

The three methods used to block pirate websites—DNS address, IP address, and URL—have different features, advantages, and risks. (See table 1.)[30]

- **DNS**. Virtually every piece of software and hardware, from web browsers to game consoles, uses DNS services. DNS translates domain names into IP addresses so that a device can find a server on the Internet.[31]

  ISPs can block pirate sites at the DNS level by making configuration changes to their DNS servers such that they will not return the IP address for the domain of a blocked website. DNS blocking is the equivalent of removing an entry from the phonebook—the phone number still works, but users will have a harder time finding the right number. Users can circumvent DNS blocking by using alternative DNS servers that are not subject to the blocking order. ISPs can easily adopt this method with modest incremental investment.

- **IP**. An IP address functions similarly to a street address or phone number, acting as a unique identifier for every packet of data sent or received over the Internet. IP addresses accurately identify where the data comes from and where it should be delivered.

  ISPs can block IP addresses at a relatively low cost. They can adjust their network equipment to prevent users from sending or receiving data to the IP addresses of blocked sites. Both operators and users can circumvent IP blocking; however, both methods can be quite costly in terms of time and technical skills. Operators can bypass IP blocking by reconfiguring domain names to point to a new IP address, and users can evade IP

blocking by using a virtual private network (VPN) to connect to the Internet via a different ISP not affected by the blocking order.

IP blocking is the only one of the three methods that has no attachment to a website's name, making it comparable to an ISP "blocking the delivery of all mail to a physical address" for all its users.[32] However, one IP address can represent thousands of servers, potentially hosting millions of websites, much like there may be multiple businesses located within a single office building. This is why blocking injunctions at the IP address level in countries such as Austria and Italy have inadvertently caused temporary blocks of non-copyright-infringing sites (see appendix A). Furthermore, a website can be available on multiple IP addresses simultaneously, which requires blocking multiple IP addresses.

- **URL**. URLs are similar to a postal address, in that they can provide the specific location of a website and its subdomains, guiding the user to a specific resource on the Internet, including domain names, paths, and protocol identifiers.[33] URLs follow a common structure. For example, for https://www.itif.org/publications/reports-briefings/, it is possible to identify the protocol (https://), subdomain (www.), domain name (itif.org), and the path (/publications/reports-briefings/).

  A blocking order at the URL level requires ISPs to examine the headers and payloads of IP packets (i.e., the source and destination IP addresses) transmitted across their networks. This inspection can occur at two levels: shallow packet inspection, which reviews basic technical details such as IP addresses, ports, and protocols; and deep packet inspection (DPI), which analyzes packet content for specific data patterns or keywords. When DPI detects a packet matching restricted criteria, such as a banned URL or keyword, the ISP terminates the connection. ISPs typically conduct these inspections using specialized routers or proxy servers similar to the ones those organizations deploy for content filtering and security.

Table 1. Different levels of website blocking[34]

Policy Notes	DNS Level	IP Address Level	URL Level*
How they are represented	Numbers (IPv4 and IPv6)	Domain names	Protocol, subdomain, domain, and path
Granularity of blocking	Targets specific domains and subdomain	Targets specific IPs dedicated to piracy sites, with potential unintended effects	Allows specific sites or files under the same domain or IP to be blocked while leaving other content accessible
Efficacy	Effectively reduces traffic to pirate sites, especially with dynamic orders targeting many popular sites and new domains	Highly efficient for illegal platforms using multiple servers. Dynamic orders allow quick updates for new IP blockings	Less effective for sites with extensive infringing content, as each piece requires a separate block. Pirate operators can easily change URLs to bypass blocks

Policy Notes	DNS Level	IP Address Level	URL Level*
Feasibility	Cost-effective, quick to implement, and requires minimal resources	IP address blocking is straightforward for ISPs to implement	Resource intensive; thousands of illegal URLs must be managed
Countries implementing this level of blocking	▪ Argentina ▪ Australia ▪ Belgium ▪ Brazil ▪ Denmark ▪ Ecuador ▪ Finland ▪ Germany ▪ Greece ▪ Indonesia ▪ Malaysia ▪ Netherlands ▪ Peru ▪ Philippines ▪ Portugal ▪ Romania ▪ South Korea ▪ Spain ▪ Sweden ▪ United Kingdom	▪ Australia ▪ Austria ▪ Belgium ▪ Brazil ▪ Canada ▪ Colombia ▪ Ecuador ▪ Finland ▪ France ▪ Greece ▪ Ireland ▪ Italy ▪ Netherlands ▪ Peru ▪ Philippines ▪ Portugal ▪ Singapore ▪ South Korea ▪ Spain ▪ Sweden ▪ Thailand ▪ United Kingdom	▪ Argentina ▪ Australia ▪ Colombia ▪ European Union ▪ India ▪ Indonesia ▪ Netherlands ▪ Philippines ▪ Portugal ▪ Singapore ▪ South Korea ▪ Spain ▪ Sweden ▪ Thailand ▪ United Kingdom

** The blocking method used in some of the blocking injunctions. Countries could use different methods for blocking orders that are not covered in this study.*

Website Blocking Is an Effective Tool

Whether website blocking works depends on the specific objective that the measure aims to achieve. Traditionally, there are two ways to evaluate whether website blocking is effective: 1) Does website blocking reduce the consumption of online copyright-infringing content? and 2) Can website blocking persuade users to pay for legal content effectively? The following summarizes the research and studies over the last few years.

Website Blocking Reduces the Consumption of Pirated Content

Website blocking can effectively decrease visits to copyright-infringing websites. More than 57 percent of pirate sites receive little to no visits after a blocking order, according to MUSO, a data analytics company.[35] MUSO analyzed a list of more than 3,000 domains blocked by the World Intellectual Property Organization (WIPO) between November 2014 and January 2023, measuring visits from 90 days before the blocking date to 90 days after. Reis et al., in a 2024 study, analyzed DNS-based blocking, also utilizing traffic data, and concluded that the daily download traffic of BitTorrent users decreased by at least 16 percent, while upload traffic decreased by at least 24 percent.[36]

Another recent study in Southeast Asia indicates that website blocking significantly deters the consumption of pirated content, even though users attempt to bypass the restrictions. Analyzing data from the 10,000 most-visited websites in Indonesia, Malaysia, Singapore, and Vietnam between April 2020 and April 2022, the researchers found that traffic to blocked sites decreased by 72 percent, 60 percent, 38 percent, and 55 percent, respectively.[37] Besides visits to the blocked sites, this research also shows that piracy levels decline after a blocking order, measured at the aggregated level across all infringing sites. The decline in piracy levels, or overall consumption of pirated content, amounted to 59 percent in Indonesia, 54 percent in Malaysia, 10 percent in Singapore, and nearly 50 percent in Vietnam.

A 2023 survey commissioned by the Coalition Against Piracy (CAP) analyzes changes in consumer patterns after blocking access to pirate sites.[38] The results determined that 62 percent of users in Indonesia and 64 percent of users in Malaysia effectively changed their viewing habits. Moreover, the survey concludes that website blocking can effectively "crowd out" users from consuming pirated content; 20 percent of the respondents declared that they'd started paying for legal content after the blocking, over 40 percent stated they'd started consuming legal free content, and half of the sample still used pirate sites after the blocking declared that they would start paying for legal content if no pirate sites were available.

There are various methods for measuring the effectiveness of website blocking; all of them conclude that it is an effective tool against digital piracy.

Website Blocking Creates Incentives for Consuming Legal Content

Disabling access to pirate websites through blocking injunctions can effectively change user behavior, ultimately increasing the legal consumption of online content. The most recent study, from Danaher et al. in 2024, uses three datasets, including more than 2,000 users in India (December 2019 and September 2020) and more than 3,000 users in Brazil (July 2021).[39] These three samples reflected different blocking events. The frequency of legal consumption increased by 8.1 percent and 3.1 percent for the cases in India, respectively, and the sample in Brazil experienced an increase of 5.2 percent.

A similar conclusion is drawn from a 2020 study analyzing the blocking orders of The Pirate Bay in the United Kingdom, which occurred in 2012, followed by 19 blockings in 2013 and 53 video piracy sites in 2014.[40] The authors found that blocking injunctions in 2013 and 2014 increased visits to legal sites by 8 percent, and between 7 and 12 percent for the 2014 blocks. In contrast, the single blocking of The Pirate Bay did not have a deterrent effect and did not decrease visits

to pirate sites. These mixed results suggest that comprehensive strategies for blocking multiple sites are more effective than isolated ones.

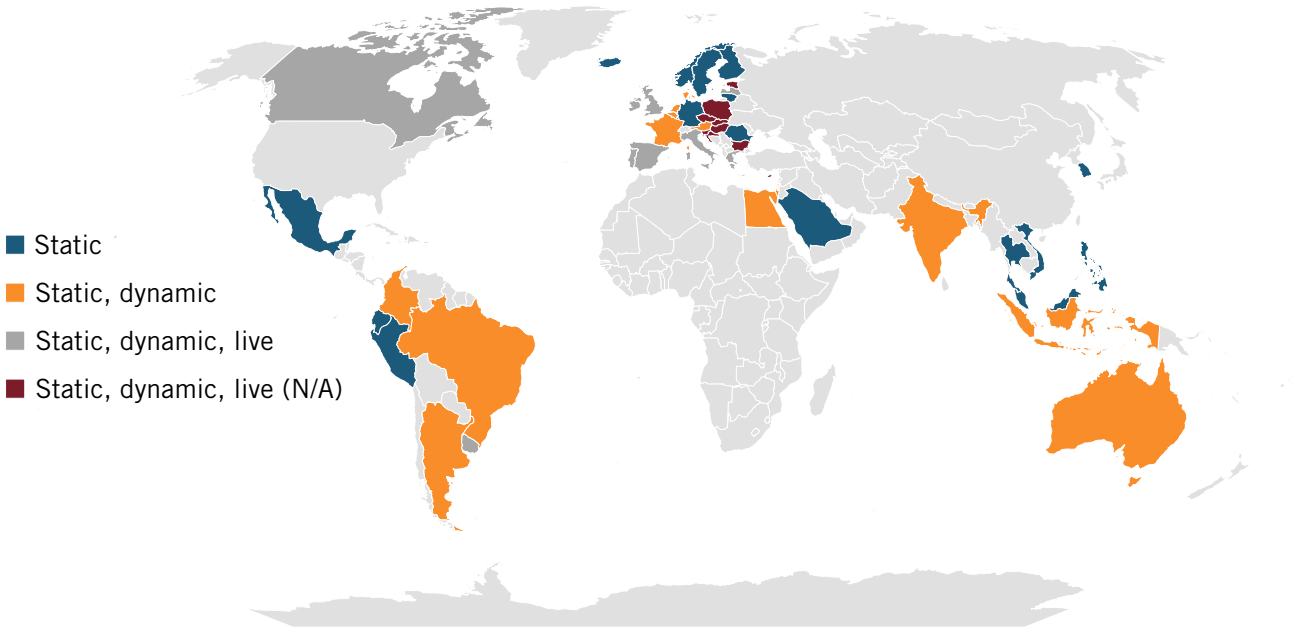
Website Blocking Can Be Designed to Target Only Massive Pirate Sites Operations and Not Other Sites with Incidental Copyright Infringement

Incidental copyright infringement (e.g., nonmassive and without a profit motive) should not be blocked. The three blocking levels (DNS, IP address, and URL) allow targeting specific websites or subsites within a website. In addition, as appendix A shows, courts often issue blocking injunctions, which allow for a deliberation about the nature and core business of a website accused of piracy. Furthermore, legislation and courts frequently include nonliability clauses for ISPs in the blocking orders. All these features enable effective website blocking measures to specifically target large foreign piracy operations and successfully avoid unintended consequences.

Website Blocking Is a Widespread Measure Used by Many Countries

Currently, at least 50 countries have a legal and regulatory framework that enables them to block pirate websites. In other words, at least 42 percent of the world's population, or 3.4 billion people, live in a country that allows website blocking.[41] Among these countries, at least 39 have utilized this regulation to block a site at the request of rightsholders (the 11 remaining are European Union countries that do not report cases of website blocking for IP-infringing sites). Figure 2 shows the global map, categorizing countries that permit website blocking based on the types of blocking orders they have enacted.

Figure 2. Countries allowing website blocking, by type of blocking injunction (N/A denotes not actively using)



Fourteen countries allow only static blocking injunctions, 15 countries allow both static and dynamic injunctions, and 10 countries permit static, dynamic, and live blocking injunctions (Canada, the United Kingdom, and Uruguay are the only non-European countries in this group). Finally, 11 EU member countries have not enacted blocking orders, despite being permitted to do so under the EU framework.

At least 50 countries have a legal and regulatory framework that enables them to block pirate websites. Among these, at least 39 have utilized this regulation to block a site at the request of rightsholders.

Website blocking orders to ISPs are typically issued by courts. Figure 3 and figure 4 summarize the 39 countries analyzed in appendix A, indicating that in 25 of them, courts are the authorities issuing blocking orders. A government agency is responsible for issuing blocking orders in eight different countries, including the Mexican Industrial Property Institute and the Intellectual Property Office of the Philippines. In three cases—France, Italy, and Spain—rightsholders can request a blocking order through either courts or a government agency. In Germany, the orders are issued by the Clearing Body for Copyright on the Internet, an organization created under a voluntary agreement among rightsholders and ISPs. Saudi Arabia and Vietnam, two of the few nondemocratic countries analyzed, issue blocking orders on an ad hoc basis.

Figure 3. Type of authorities issuing blocking orders (number of countries)

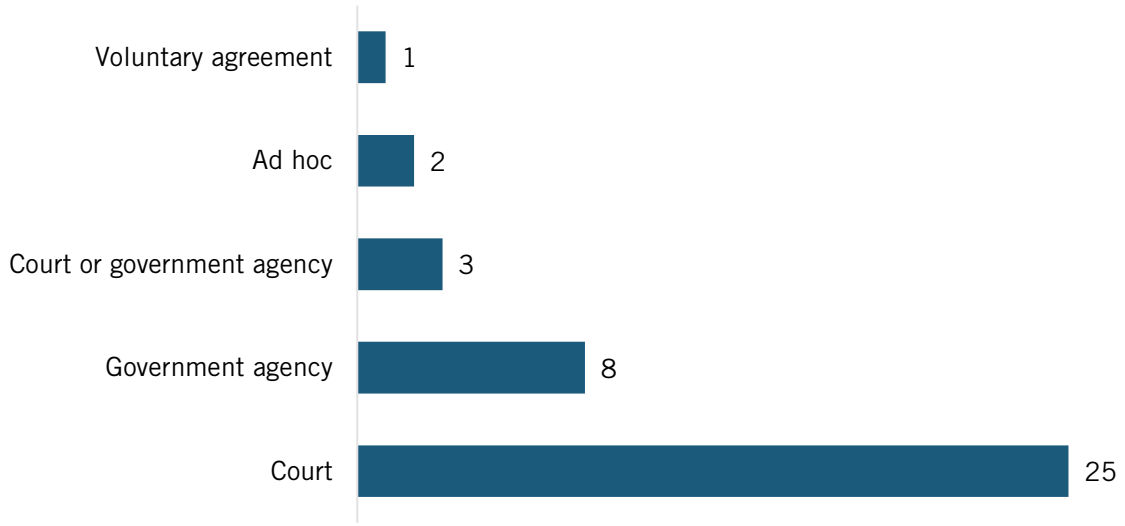
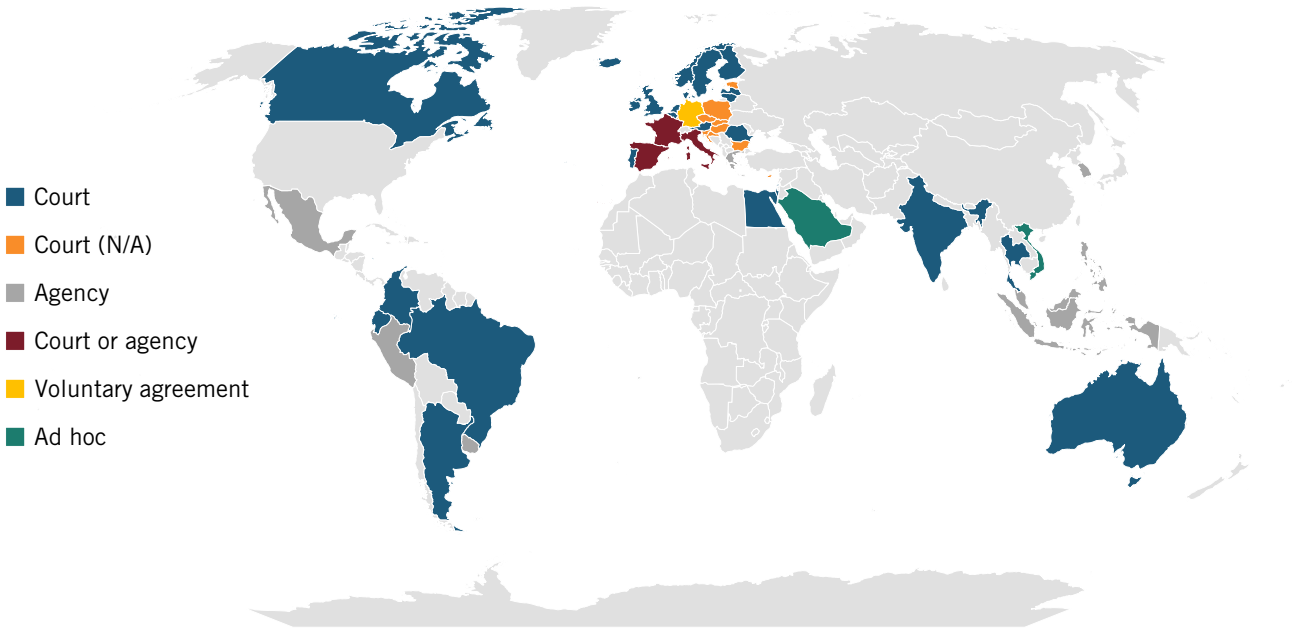


Figure 4. Countries allowing website blocking, by type of authority (N/A denotes not actively using)



Appendix A contains the complete list of 39 countries that have presented cases of website blocking injunctions, along with a description of the blocking governance, the types of blocking, and the level of blocking orders they have issued. This list of countries is largely based on updates after 2022, when ITIF last made a summary of countries' website blocking activities worldwide. Two significant types of events have occurred since then. First, countries such as Canada and the United Kingdom have adopted a multistakeholder and gradual approach to safely increase the types of blocking injunctions. Second, countries such as Italy and Spain have demonstrated that poorly designed governance structures and technical specifications for blocking orders can undermine website blocking efforts. This does not mean that website blocking is not a valid, useful, and successful tool; it just means that website blocking regimes should be implemented thoughtfully and effectively.

Good Governance: The Cases of Canada and the United Kingdom

Canada and the United Kingdom have proven in recent years that a gradual, consensus-based, and engaged approach to website blocking can effectively counter digital piracy and prevent unintended consequences.[42] In both cases, website blocking evolved from targeted and static measures to dynamic and live injunctions by developing jurisprudence and coherence among evolving court orders. Some of the key common lessons can be summarized as follows:

- Courts have played a primary role in shaping the scope of website blocking, the technical features and feasibility of blocking injunctions, the limited liability of ISPs, and minimizing the risk of potential unintended effects.
- Courts have assessed the proportionality and freedom of expression implications of blocking injunctions. Canada's Federal Court of Appeal determined in 2021 that a prior

ruling in 2019 ordering the blocking of GoldTV, a pirate site, does not violate freedom of expression. In the United Kingdom, the 2015 ruling of *Twentieth Century Fox Film Corporation & Ors v. Sky UK Ltd. & Ors* established that blocking streaming pirate sites is proportional and does not impose an unreasonable burden on ISPs.

- The technical complexities and potential unintended "over-blocking" issues are carefully assessed by Canadian and British courts. In both countries, courts have stated that blocking injunctions should be implemented using multiple technical methods. As of April 2025, these countries have no known cases of unintentionally blocking lawful sites. Moreover, ISPs can be reasonably compensated for the costs incurred in implementing the blocking injunctions.

A Poorly Designed Governance: The Cases of Austria, Italy, and Spain

The primary objective of website blocking of foreign pirate sites should be to target large-scale piracy operators, not websites with incidental or minor amounts of pirated material—or, in any case, blocking fully lawful sites. The cases of Austria, Italy, and Spain all seem to have ignored the principles of good governance or the technicalities required for a safe blocking of sites. Several IP addresses hosting lawful websites have been blocked in recent years in these three cases.[43]

First, in the cases of Italy and Spain, there are nonjudicial pathways through which rightsholders can request to block pirate sites, specifically via a government agency. This creates potentially unnecessary issues for the system, such as nonuniformity in the blocking orders and their technicalities, granting discretionary authority to government officials to block sites, a weakened nonliability security for ISPs, and fewer checks in the blocking procedures. For instance, in the case of Italy, the government agency did not have a verification mechanism before ordering ISPs to block a site. A framework for blocking orders based on court decisions, on the other hand, ensures a balanced, nuanced, and orderly approach.

Second, the cases of Austria, Italy, and Spain have targeted blocking IP addresses without a multilayered approach, ignoring that one IP address can potentially represent several servers and host many websites. This situation resembles closing an entire shopping mall because one of its stores sold pirated bootleg vinyl records. None of these countries seems to include a stakeholder consultation mechanism to define appropriate technical features of the blocking orders.

COMBATING DIGITAL PIRACY IN THE UNITED STATES

The United States has the highest number of visits to pirate sites among developed economies, and this illegal industry is growing worldwide.[44] One-third of Americans consumed pirated content in 2023, and nearly half of Americans have consumed pirated content at some point in their lives. Digital piracy consumption is particularly pervasive among young Americans, with over 75 percent of U.S. citizens under 25 years old admitting to having used pirated content.[45]

Website blocking of intellectual property-infringing sites is not codified under U.S. law; however, there are some instances where rightsholders or authorities can request a court order to seize domain names by effectively transferring the domain to government control. These alternatives to digital piracy are insufficient and limited, as they only address a website's domain or specific infringing content and primarily target U.S. platforms, even though most digital piracy originates from foreign sites.

Section 512 of the Digital Millennium Copyright Act

One alternative for rightsholders in the United States to protect their intellectual property is through Section 512 of the Digital Millennium Copyright Act (DMCA), codified at 17 U.S.C. §512.[46] Section 512 provides a safe harbor for online service providers (OSPs), limiting their liabilities if they store copyrighted material, do not perceive financial benefit from it, and credibly lack awareness of facts or circumstances relating to infringing activity. OSPs seeking the Section 512 safe harbor must follow a "notice-and-takedown" process if a copyright owner or their authorized agent claims that content on the platform infringes their rights.

Thus, under Section 512 of the DMCA, rightsholders can notify an OSP to remove or disable infringing content, stop repeat infringers, and implement standard technical measures to identify or protect copyrighted works.[47] Under this legislation, online intermediaries are not liable for pirated activities within their reach if they follow the measures mentioned herein. Section 512 avoids rightsholders and service providers resolving IP issues in court. On the other hand, users can request that a service provider repost content if they believe it does not violate copyright laws, and the party who sent the notice-and-takedown action could be held liable for compensation.

Seizing Domains

Under civil and criminal forfeiture laws as well as trademark laws, the United States federal government can seize pirate domains. This is the basis for Operation In Our Sites, a program led by the National Intellectual Property Rights Coordination Center (IPR Center) and managed by ICE's Homeland Security Investigations (HSI).[48] When there is credible information of online IP theft, Operation In Our Sites works with the Department of Justice to prosecute, convict, and punish pirates and seize website domains, their profits, and other assets originating from IP theft. This program has compelled the forfeiture of thousands of sites since its launch in 2010, including those of online scammers and other cybercriminal activities.[49]

There have been several examples of the United States using this faculty to seize domains. For example, in December 2022, in the context of the men's FIFA World Cup, an international soccer competition, the United States attorney for the District of Maryland confirmed the seizure of 55 sites illegally streaming the competition's games.[50] Once the sites were seized, users could only see a banner stating;

> This domain name has been seized by Homeland Security Investigations (HSI) pursuant to a warrant issued by the United States District Court for the District of Maryland under the authority of inter alia, Title 18, United States Code, section 2323. It is unlawful to reproduce or distribute copyrighted material including movies, music, software, or games without authorization. Individuals who do so risk criminal prosecution. First time offenders convicted of a criminal copyright violation face up to five years in prison, fines, restitution, and forfeiture.[51]

Operation In Our Sites is not a website blocking initiative, as it does not require ISPs to block users' access to a particular website. In addition, it seeks to seize a website at the domain level, not taking the servers hosting the site off the Internet. Hence, it is easier for the pirate site's owners to make the website reappear under a new domain.

Section 512 of the DMCA and the Operation In Our Sites initiative are clearly insufficient to stop the rise of intellectual property theft of American work. Most importantly, however, these two alternatives for rightsholders do not have jurisdiction to seize foreign domains (such as those ending in ".ru").

Attempts to Codify Website Blocking: SOPA/PIPA

In 2011, lawmakers introduced two legislative proposals to authorize the attorney general to request website blocking injunctions from the courts. In the House of Representatives, members introduced the Stop Online Piracy Act (SOPA), while in the Senate, legislators proposed a similar measure: the Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011 (known as PIPA or the Protect IP Act).[52]

Both proposals were closely aligned in their objectives: they sought to provide the Department of Justice (with SOPA also including a private right of action) with legislative tools to request court orders requiring ISPs, search engines, payment processors, and ad networks to block access to foreign copyright-infringing sites, suspend financial transactions, and remove sites from search results to weaken pirates' revenues.[53] SOPA and PIPA proposed blocking at the DNS level as a technical enforcement tool, and only SOPA included potential sanctions to rightsholders that misrepresented a site's activity. While these proposals did not define the approach, they aligned more closely with what would now be static blocking injunctions.

Congress did not pass SOPA or PIPA, mostly due to an opposition campaign accusing these bills of "reducing freedom of expression"; interest groups successfully blocked the bills. The reasons for this failure are varied. First, by 2011, few democracies in the world had approved laws for blocking foreign pirate sites, so the reality that website blocking does not contradict the principle of freedom of expression became less tangible. Second, tech companies such as eBay, Facebook, Google, LinkedIn, Twitter, and Yahoo expressed concerns about "uncertain liabilities, private rights of action, and technology mandates that would require monitoring of web site[s]."[54] Some websites, such as Wikipedia and Reddit, went fully black for a day in protest of SOPA/PIPA, triggering more than 10 million signatures against the bill, and members of Congress received more than 3 million emails.[55] The worldwide narrative in 2011 about the value of digital activism, and the closeness to the 2012 presidential election, arguably also animated against approving SOPA/PIPA initiatives.

Criticisms of Website Blocking in the United States

The United States missed an opportunity to acquire a new tool to combat foreign digital crime by not approving SOPA/PIPA, and today it lags behind the rest of the world in tackling digital piracy. The truth is that critics at the time failed to substantiate their arguments, and the communication campaigns outweighed the evidence. Three types of opponents to SOPA/PIPA appeared: 1) groups simply against protecting copyrights and intellectual property rights, 2) groups that believed that the existing regulatory framework didn't need changes (i.e., DMCA was comprehensive enough), and 3) claims that the measures enabled by the legislation would "break the Internet" (i.e., the DNS level of blocking would harm lawful sites).[56] Even under a naïve belief that the latter two opposition groups were truly concerned about appropriate and evidence-based legislation, the evidence after more than a decade has proven them wrong.

Several organizations and interest groups opposed SOPA/PIPA. The Electronic Frontier Foundation (EFF) argued that SOPA/PIPA "provisions would allow for removal of enormous amounts of non-infringing content including political and other speech from the Web."[57] Yet, after over a decade of international experience with blocking injunctions against pirate sites, there are no examples of full democracies using this tool to remove political speech. EFF also argued that "had these bills been passed five or ten years ago, even YouTube might not exist today."[58] Evidently, YouTube does in fact work in all 50 countries listed in appendix A.

After over a decade of international experience with blocking injunctions against pirate sites, there are no examples of full democracies using this tool to remove political speech.

The American Civil Liberties Union (ACLU), an advocacy organization, expressed concerns about the potential overreach of the executive branch through the attorney general's authorities, potentially given under SOPA.[59] ACLU also argued that SOPA and PIPA fell "short of adequately protecting non-infringing content from removal."[60] The argument of protecting noninfringing content from removal is valid, and website blocking has proven to be safe under a good governance design. However, ACLU also argued to protect "even those sites that facilitate online piracy [and] provide access to lots of perfectly lawful content. And the original SOPA bill would do nothing to prevent the lawful content from disappearing along with the infringing content."[61] Mass pirate operation is, at its core, a criminal activity focused on distributing stolen content. It is unorthodox to argue that sites profiting from the massive distribution of pirated content should not be blocked because they have *incidental* lawful content. A good design works in the opposite direction: it protects lawful websites, even with incidental copyright infringements.

ACLU argued that not codifying website blocking is "setting an example to the world."[62] But as appendix A shows, the world is providing an example to the United States of how website blocking can be implemented safely while protecting free speech.

The activism at the time was united under the slogan that SOPA/PIPA would break the Internet, without much clarity about what that concept meant. In any case, the Internet, digital connectivity, and the digital economy in general have flourished worldwide over the last decade. Countries that allow website blocking do not show any pattern that contradicts this growth.

Opposition groups to SOPA/PIPA offered vague alternatives to fight digital piracy. For example, some groups argued that the United States did not need new legislation since the DMCA notice-and-takedown process would suffice.[63] As discussed, this legislation does not have jurisdiction over foreign pirate sites, the main source of digital piracy.

Considering new legislative proposals, some piracy-accepting opposition groups will likely rehash certain arguments against SOPA/PIPA in 2025:[64]

- **Freedom of expression/censorship**. Arguments that blocking access to pirate sites amounts to censorship or undermines freedom of expression are superficially appealing but fundamentally flawed. Two distinct beliefs typically underlie this view. First, some advocates argue that all content should be freely shared, regardless of copyright protections or compensation for creators. This is not a defense of freedom of expression; it is a rejection of the principle of intellectual property rights. If this is their position,

critics should state clearly that they oppose the entire intellectual property regime—despite the fact that IP is one of the core foundations of America's economic strength.

A second, more nuanced concern is that blocking foreign pirate sites could give governments discretion to shut down websites. This is an understandable concern, but the executive branch of government does not necessarily have to have a role in blocking orders. As shown in appendix A, in many countries, rightsholders request blocking orders directly through the courts, without involvement from government agencies. In such systems, the courts' role is limited to interpreting the law in private disputes—typically between a known rightsholder and an anonymous defendant, often referred to as "John Doe."

- **Website blocking has failed in other countries.** This statement is minimally accurate, but fundamentally incomplete. A proper assessment recognizes that website blocking produces flawed outcomes only when poorly designed. Certain interest groups argue that the experience of Austria, Italy, and Spain proves that website blocking is ineffective. That is not how serious policy analysis should proceed. It is important to assess why the efforts failed and what can be done differently.

Website blocking produces flawed outcomes only when poorly designed.

The experiences of Austria, Italy, and Spain offer two important lessons. First, only one institution—preferably a court—should have the authority to issue blocking orders, independent of executive agencies. Second, blocking orders must be technically sound, including attachment to a website's domain name (not solely at the IP address level), multilayered, and developed through continuous consultation with ISPs, software engineers, and other relevant stakeholders to reflect technological changes.

- **Website blocking does not address the root causes, and piracy will continue.** This argument is both valid and unconventional, as not all punitive measures should aim to eliminate the issue at hand. This reasoning could be applied to nearly any policy initiative. In a more extreme example, prohibiting the sale of alcohol and tobacco to teenagers does not guarantee that some teenagers won't consume these substances; however, it is widely agreed that attempting to curb this behavior is a socially desirable action.

CONCLUSION

The United States needs to update its legal framework to protect its creative industries, sports industry, athletes, innovators, and copyright holders. Codifying the ability to block foreign pirate sites would also protect consumers, who are often more vulnerable to cybercrime when accessing pirated content. Despite the overreactions during the SOPA/PIPA debate more than a decade ago, an evidence-based discussion can now guide the adoption of this critical tool against digital piracy.

International experience demonstrates that website blocking is effective and safe. More than 50 countries have legal frameworks authorizing the blocking of pirate sites, and at least 39 actively enforce them. After more than a decade of the SOPA/PIPA debate, there is also substantial evidence showing that website blocking can effectively reduce the consumption of pirated

content while simultaneously increasing the consumption of paid legal content. The experiences of countries such as Canada and the United Kingdom demonstrate that it is possible to safely block pirate sites without causing unintended consequences. Conversely, cases in Austria, Italy, and Spain highlight the importance of the role of courts and a technically sound design of the blocking orders.

The United States should draw on these lessons and codify the blocking of foreign pirate sites into law. Based on international experience, good legislation to allow the blocking of pirate sites should include the following:

Governance

- Courts should retain exclusive authority to issue blocking orders.
- ISPs should receive reasonable immunity from liability for complying with blocking orders.
- The law should ensure that blocking injunctions are enforceable across all ISPs.
- ISPs should be fairly compensated for the costs incurred in implementing blocking measures.

Technical Feasibility

- Blocking orders should include multilayered technical specifications.
- A technical consultation process should include, at a minimum, rightsholders, ISPs, and content delivery network providers to determine appropriate blocking methods.

Structure

- Blocking orders should be static, dynamic, and live.
- The legislation should specifically target foreign large-scale piracy operators.
- Users attempting to access a blocked site should receive a clear notice stating that access has been restricted due to copyright infringement and providing instructions for filing a complaint if they have evidence to the contrary.

In January 2025, Representative Zoe Lofgren introduced the Foreign Anti-Digital Piracy Act (FADPA), which aims to codify the blocking of foreign websites.[65] FADPA is well aligned with these proposed recommendations. For example, FADPA advocates for courts to issue static, dynamic, and live injunctions, offers liability protections for ISPs, provides cost reimbursement for ISPs, and ensures general protections for targeting solely foreign sites that engage in massive copyright infringement.

APPENDIX A: WEBSITE BLOCKING USAGE WORLDWIDE

At least 50 countries allow the blocking of copyright-infringing websites. Of these, 39 allow rightsholders to request a blocking injunction against ISPs through courts, a determined government agency, or another institution. In addition, the 27 European Union members have a legal framework that allows rightsholders to request static, dynamic, or live blocking injunctions through courts.

Courts are often the primary entities responsible for issuing orders. However, countries such as France, Italy, and Spain allow rightsholders to request blocking orders through courts or governmental agencies. Only a government agency can issue blocking orders in other countries, including Greece, Indonesia, Malaysia, Mexico, Peru, the Philippines, South Korea, and Uruguay.

There is no single rule regarding how countries determine the details of the blocking orders that ISPs should follow to block pirate websites. However, they often use a combination of DNS, IP address, and URL-level blocking.

Table 2 summarizes the countries that have issued blocking orders and the European Union's legal framework up to March 2025. The second through fourth columns indicate whether the country has issued static, dynamic, or live blocking injunctions. The fifth column specifies which entity, either courts or another body, is responsible for issuing these blocking injunctions. Finally, the last column shows the reported technical blocking level being utilized, indicating the minimum level (meaning the country could be using other blocking levels in addition to the ones noted).

Table 2. Countries that allow blocking injunctions, their governance, and the technicalities of blocking orders

Country	Static	Dynamic	Live	Authority	Blocking Method***
Argentina	✓	✓		Court	DNS and URL
Australia	✓	✓		Court	DNS, IP address, and URL
Austria	✓	✓		Court	IP address
Belgium	✓	✓		Court	DNS and IP address
Brazil	✓	✓		Court	DNS and IP address
Canada	✓	✓	✓	Court	IP address
Colombia	✓	✓		Court	IP address and URL
Denmark	✓	✓		Court	DNS
Ecuador	✓			Court	DNS and IP address
Egypt	✓	✓		Court	-
European Union	✓	✓	✓	Court	At least URL
Finland	✓			Court	DNS and IP address

Country	Static	Dynamic	Live	Authority	Blocking Method***
France	✓	✓	✓	Court or government agency	At least IP address
Germany	✓			Voluntary agreement	DNS
Greece	✓	✓	✓	Government agency	DNS and IP address
Iceland	✓			Court	-
India	✓	✓		Court	URL
Indonesia	✓	✓		Government agency	DNS and URL
Ireland	✓	✓	✓	Court	At least IP address
Israel	✓	✓		Court	Up to the ISPs
Italy	✓	✓	✓	Court or government agency	IP address or DNS
Latvia	✓	✓*	✓*	Court*	-
Lithuania	✓			Court	-
Malaysia	✓			Government agency	DNS
Mexico	✓			Government agency	-
Netherlands	✓	✓		Court	DNS, IP address, and URL
Norway	✓			Court	-
Peru	✓			Government agency	DNS or IP address
Philippines	✓			Government agency	DNS, IP address, and URL
Portugal	✓	✓	✓	Court**	DNS, IP address, and URL
Romania	✓			Court	DNS
Saudi Arabia	✓			Ad hoc	-
Singapore	✓	✓		Court	IP address and URL
South Korea	✓			Government agency	DNS, IP address, and URL
Spain	✓	✓	✓	Court or government agency	DNS, IP address, and URL
Sweden	✓	✓		Court	DNS, IP address, and URL
Thailand	✓	✓		Court	IP address and URL
United Kingdom	✓	✓	✓	Court	DNS, IP address, and URL

Country	Static	Dynamic	Live	Authority	Blocking Method***
Uruguay	✓	✓	✓	Government agency	Up to the ISPs
Vietnam	✓			Ad hoc	-

** Stated by the law, but not in practice.*

*** Complemented by voluntary agreements.*

**** The blocking method used in some of the blocking injunctions. Countries could use different methods for blocking orders that are not covered in this study.*

Argentina

Argentina became the first Latin American country to block The Pirate Bay, a well-known digital piracy platform, in 2014. Argentina's regulations permit both static and dynamic injunctions, with courts issuing orders to block websites that host pirated content. One of the most notable recent cases is the March 2023 court order to block 30 pirate streaming sites at both the DNS and URL levels, primarily targeting websites that stream soccer.[66] In September 2024, Argentinian courts ordered Google to disable and prevent the use and installation of Magis TV, an Android streaming app known for providing pirated content.[67] The blocking of Magis TV began as part of a Brazilian investigation that was part of Operation 404, Brazil's main anti-digital piracy initiative led by the Ministry of Justice and Public Security.[68] As these efforts mostly target soccer streaming pirate services, the local film industry is pushing for expanding the measures to target pirated audiovisual content.[69]

Australia

Australia has permitted website blocking since 2016, and the 2018 amendments to the Copyright Act established a stronger legal basis for developing jurisprudence around static and dynamic blocking injunctions.[70] Courts issue blocking orders, and recent rulings include technical specifications for ISPs to block pirate sites—for example, the May 2024 resolution ordered the blocking of 34 copyright-infringing sites through DNS tampering, IP address blocking, re-routing, and URL blocking.[71]

Austria

Austria uses standard cease-and-desist procedures for blocking injunctions, and the legislation permits dynamic blocking injunctions. The courts mandate these injunctions.[72]

In August 2022, an Austrian court ordered the blocking of 14 IP addresses that hosted websites involved in promoting digital piracy. Authorities inadvertently blocked other legitimate sites because the order targeted only IP addresses without complementing them with measures such as DNS blocking.[73] Notably, 11 of the 14 sites were managed by Cloudflare, affecting several, including the local e-commerce site Preis Zone and the corporate site of Yesss!, a subsidiary of a major Austrian telecommunications firm.[74]

Belgium

Belgian law permits rightsholders to obtain two types of injunctions—permanent and interim—each offering various options for securing prompt court orders (although fast-tracked cases do not entitle rightsholders to compensation). The courts issue orders to block pirate websites by their

DNS and IP addresses.[75] Although the law allows courts to issue dynamic injunctions, Belgian courts are seen as "reluctant" to impose them.[76]

Brazil

Brazil's main anti-digital piracy initiative is Operation 404, first implemented in 2019. Operation 404 is a law enforcement initiative led by the Ministry of Justice and Public Security that involves investigations at both the national and international levels, arrests, shutdowns, website blocking, and de-indexing. Authorities execute Operation 404 in investigative phases—for example, phase 3 involved coordination with American and British law enforcement authorities to block or seize the domains of 334 websites (DNS filtering), 94 apps, and 20 IP addresses.[77] The most recent operation, phase 7, involved coordination with law enforcement authorities from the United States, the United Kingdom, and the European Union, as well as audiovisual and software developer associations. This effort resulted in the blocking of 675 websites and 14 illegal streaming sites apps.[78] In addition, in August 2024, Brazil launched Operation Redirect, an initiative targeting illegal online music services that are also associated with malware distribution.[79]

Canada

After the 2021 appeals court order to uphold Canada's first website-blocking framework, the country successfully expanded the court's authority to issue dynamic and live blocking injunctions.[80] The precedent for Canada's efforts to use website blocking to combat digital piracy evolved from the 2018 application by Asian Television Network International Limited, on behalf of the FairPlay Coalition, to the Canadian Radio-television and Telecommunications Commission (CRTC)—Canada's regulatory authority in this matter—seeking blocking orders for ISPs based on its belief that Canadian laws permitted the CRTC to do so. However, CRTC denied FairPlay Coalition's request at that time.[81]

After this attempt, several rightsholders pursued legal action against online copyright infringement sites, initially by requesting static injunctions. Later, when rightsholders deemed that approach insufficient, they pursued dynamic injunctions. Canadian courts first issued a static injunction in 2019 when broadcasting companies initiated legal action against GoldTV, a website providing unlicensed content. Due to the anonymity of GoldTV's owners and at the request of the broadcasting companies, the court determined that the CRTC had the authority to order ISPs to block GoldTV sites.[82] In 2021, the Federal Court of Appeal made decisions following an appeal from Teksavvy Solutions Inc., one of Canada's ISPs, regarding the implications for freedom of expression stemming from the 2019 ruling. It determined that website blocking does not infringe upon freedom of expression rights, as the websites involved are unlawful, and the order pertains to a private matter dispute.[83] A dynamic blocking injunction in December 2022 reinforced the legal action against GoldTV.[84]

The first precedent for a dynamic and live blocking injunction in Canada dates back to May 2022, requested by the three broadcasting companies airing National Hockey League (NHL) games.[85] By the end of the same year, the court had issued a similar ruling authorizing dynamic blocking injunctions for the unauthorized streaming of the 2022 FIFA World Cup games.[86] The rulings also considered two key issues. First, there was the risk of over-blocking, as the blocking orders are based on the IP addresses of pirate sites; however, most Canadian ISPs already used that method to prevent access to the content of other illegal websites. Second, the court

determined that ISPs are entitled to reasonable compensation for their efforts in implementing the live blocking injunctions, as the order permits them to update the IP address list multiple times during a game.

The blocking orders in Canada have evolved to keep pace with changes in digital piracy. In July 2024, the Federal Court issued a permanent injunction for a specified period, benefiting the rightsholders of the NHL, the National Basketball Association, and the Premier League.[87] This decision allows rightsholders to protect their content across multiple sports and seasons, providing a mechanism to extend their protection without requiring new applications. Another relevant precedent is the September 2024 blocking order for the website Indigo Kills Kids, which protects the trademark of Indigo Books & Music Inc.[88]

Colombia

Colombian courts started to issue dynamic blocking injunctions in May 2024, targeting a website and a streaming app distributing copyright-infringing content prior to a request by Colombia's National Copyright Directorate (Direccion Nacional de Derecho de Autor, or DNDA).[89] This court ruling set a precedent for later blocking four other sites streaming unlicensed sporting events, in two separate sentences.[90] The dynamic blocking injunctions targeted IP addresses and the website's URL.

Denmark

Demark has nearly two decades of experience combating digital piracy using website blocking injunctions, after blocking the Russian MP3 site AllofMP3 in 2006. In 2014, ISPs in Denmark signed a Code of Conduct ensuring that all ISPs will voluntarily follow a blocking injunction, even if the courts order only one ISP to block a determined website. The court orders, which are DNS based, also target domain switches and proxy sites.[91] In December 2024, Denmark became the first European country to rule that sporting events are protected under copyright law—and hence, protected through the blocking system—when the court declared that the production and recording of sporting events meet the law's requirements.[92]

Ecuador

Ecuador's court has the authority to order static blocking injunctions according to pirate websites' DNS and IP addresses. For example, in March 2024, a court ordered the blocking of 8 websites and 24 IP addresses associated with the unlicensed streaming of the local soccer league, and in August 2024, a court ruled for the blocking of 180 IP addresses linked with Magis TV, an app that allows pirated streaming of sporting events.[93] Soccer leagues' transmission rightsholders are currently advocating for the authorities to have the technical capabilities to implement dynamic injunctions.[94]

Egypt

Egyptian copyright law allows courts to issue both static and dynamic blocking injunctions. Although this law dates back to 2002, it is understood that its language is explicit enough to apply to digital piracy.[95] Blocking injunction examples in Egypt include the May 2019 order against EgyBest, the largest piracy site in the country, along with eight other copyright-infringing sites, and the September 2024 initiative between the Alliance for Creativity and Entertainment (ACE) and Egyptian authorities to shut down a sports piracy network used worldwide, along with 25 associated proxy sites.[96]

European Union

The Court of Justice of the European Union first ordered ISPs to block a copyright-infringing website in 2014.[97] In recent years, the European Commission has updated its regulations to expand the court's authority to issue dynamic and live injunctions. For instance, Regulation EU 2022/2065 for Digital Services establishes harmonized rules on "notice and action" that require ISPs to implement blocking orders based on URL addresses (and additional information) documented by rightsholders, and it designates certain entities as "trusted flaggers" to prioritize blocking.[98] Additionally, Recommendation EU 2023/1018 provides guidelines to safeguard rightsholders against the unauthorized retransmission of live events.[99] The 2023/1018 recommendations are not legally binding, and authorities are expected to evaluate their implementation and effectiveness by November 2025.

Finland

Finland implements website blocking injunctions by court ruling, which orders ISPs to block unauthorized content based on websites' DNS and IP addresses. The country is one of the first to block The Pirate Bay based on a 2011 sentence.[100] Another relevant order is the 2018 injunctions targeting torrent sites.[101]

France

French regulations allow courts or the Regulatory Authority for Audiovisual and Digital Communications (Arcom) to order ISPs to block pirate websites. Between 2022 and 2024, France blocked more than 7,000 domains, with 1,442 ordered by courts and 5,571 by Arcom.[102] Blocking types are scalable, and ISPs can flexibly integrate them with internal procedures, often involving IP addresses.[103] France's law allows rightsholders and broadcasters to immediately block illegal sites when a judge intervenes. Blocking injunctions last for a year and cover proxy sites.[104]

Germany

The Clearing Body for Copyright on the Internet (CUII), an organization composed of retired judges with expertise on the country's copyright law, orders blocking of IP-infringing websites in Germany. Rightsholders and ISPs established CUII as a voluntary agreement in 2021.[105] In December 2023, a German court ruled on a 2020 case (prior to CUII's creation), stating that the ISP Cloudflare should block the piracy service DDL-Music; however, it was not permitted to block proxy sites using DNS addresses.[106] There are several cases wherein CUII ordered blocking access to pirate sites, such as the April 2024 order to block Sci-Hub, a website for skipping the paywall of academic journals, and the September 2024 order to block the sport streaming site TotalSportek.[107] These blocking orders were at the DNS level.[108]

Greece

A special commission at the Greek Ministry of Culture and Sports (EDPPI) issues blocking orders without direct court oversight. In 2024, EDDPI ordered the takedown of 810 IP addresses and 49 domains. In addition, live blocking injunctions aimed at protecting the rights of sporting event holders are effective since 2021 due to copyright amendment law.[109]

Iceland

Iceland established website blocking as a legal practice with the 2014 court order blocking The Pirate Bay, which the country's Supreme Court ratified in 2018.[110] However, website blocking is a relatively limited practice. Additionally, due to Iceland's stringent privacy laws, the country is

an attractive location for proxy services, including fraud, piracy, and other criminal-activity sites.[111]

India

A court issued India's first blocking order of pirate sites to ISPs in May 2012.[112] Observers describe the evolution of India's framework for blocking pirate sites as "a patchwork process" that sometimes requires correcting previous decisions that have led to overblocking. For example, one correction involved ordering the blocking of specific URL addresses that host pirated content, incentivizing pirate sites to simply change their URLs or domain names.[113] Thus, dynamic injunctions came into effect in April 2019, establishing a new process that allows for the extension of an injunction order already granted against a specific website to also apply to a proxy site containing the same content as the original website.[114] Overall, authorities blocked over 12,000 URLs due to copyright infringement between 2015 and 2023.[115]

Indonesia

Indonesia's website blocking procedure involves two different government agencies. Rightsholders must submit a complaint to the Ministry of Law's Directorate General of Intellectual Property (DGIP). Once the copyright infringement is validated, the DGIP requests that the Ministry of Communications (KOMINFO) issue a blocking order to ISPs or directly to a website.[116] Therefore, this is a centralized system without court intervention, and only one agency is responsible for making the decision to block a site. Three years after Indonesia's first website blocking order in 2019, the authorities documented blocking over 3,500 pirate sites.[117] Despite having a framework for static and dynamic injunctions, rightsholders often complain that the blocking process is slow, allowing proxy sites to emerge overseas in a short timeframe.[118]

Although there is no publicly available information regarding the technical specifications of the blocking orders, Indonesia has a long record of Internet censorship and data privacy restrictions.[119] KOMINFO has even blocked companies such as PayPal, Yahoo, and the gaming site Stream due to a licensing system to avoid "disturbing the public order."[120] KOMINFO enacts the blocking orders through a combination of DNS blocking and targeting URLs.[121]

Ireland

Website blocking of pirate sites in Ireland has been permitted since the European Union updated its copyright regulations in 2012. This reform has facilitated the subsequent and increasing expansion of jurisprudence, allowing courts to rule for dynamic and live blocking injunctions.[122] The Irish Court of Appeal is the leading authority to order blocking injunctions after proving that the injunction is necessary, the costs and complexities of the blocking are adequate, the cost-sharing proposals by the plaintiff are fair and reasonable, the order respects the fundamental rights of the parties affected, and the duration of the proposed injunction and the provisions for review are reasonable.[123] In 2020, the High Court of Ireland granted UEFA (the governing body of soccer in Europe) a live and dynamic blocking injunction for the duration of the competition season.[124] In this case, the court ordered ISPs to block access to the IP addresses of servers either used or expected to be used to provide unauthorized free streams of UEFA matches to the public.[125]

Israel

The 2019 reform of Israel's Copyright Law allowed courts to issue orders to ISPs to block and restrict access to pirate websites.[126] This legislation stipulates that blocking orders should be

directed solely at sites whose "principal material" infringes on intellectual property, and can only be applied to sites hosted outside Israel.[127] Additionally, the Copyright Law reform allows for dynamic blocking injunctions, stating that "indirect infringement" is subject to court blocking orders and specifying that ISPs must take "reasonable measures" to implement the blocking orders.

Italy

Website blocking in Italy is implemented under Article 8.3 of the EU Copyright Directive, criminal law, and a special administrative procedure that took effect at the end of March 2014. This regulation grants Italy's communications regulatory authority (Autorità per le Garanzie nelle Comunicazioni, AGCOM) the power to instruct ISPs to block sites upon a rightsholder's request, facilitating a fast-track procedure for cases of widespread copyright infringement.[128] Thus, Italy's regulation allows AGCOM to order the block of suspected websites without a court order. Since 2020, the rightsholders of Italy's main soccer leagues (Serie A and Serie B) have been granted dynamic blocking injunctions by courts.[129]

In early 2024, AGCOM launched Piracy Shield, a machine-to-machine platform designed to block websites involved in digital piracy, mainly targeting live sporting events. This automated system enables rightsholders to obtain orders directed at ISPs for blocking websites in less than 30 minutes after submitting a claim. Thus, Piracy Shield aims to automate website blocking with a dynamic, real-time approach.[130]

The Piracy Shield system allows the blocking of content based on a pirate website's IP address and DNS-level blocking. However, an IP address is not necessarily unique to each website; one IP address can host multiple unrelated websites. In other words, the system blocks pirate sites based on their IP address without considering that other websites might share the same IP address.[131] Articles drew an analogy to closing an entire shopping mall because one store is liable for selling bootleg vinyl records containing pirated music.[132]

In February 2024, just a few weeks after implementing Piracy Shield, reports emerged about overblocking and restricting access to legitimate websites. Notably, 12 IP addresses associated with the U.S.-based companies Zenlayer and Cloudflare, potentially hosting millions of sites, were involved. In October 2024, Piracy Shield mistakenly blocked access to Google Drive across Italy for three hours.[133] Freedom House highlighted significant concerns among analysts regarding the proportionality and transparency of the restrictions imposed by Piracy Shield.[134] Furthermore, concerns arose regarding implementing Piracy Shield's complaint procedure, making it difficult for legitimate websites to appeal against wrongful blocking of sites.[135]

Italy's case has specific characteristics that set it apart from other countries that effectively implement dynamic and live blocking injunctions to combat digital piracy while preserving a free and open Internet. First, the regulatory agency AGCOM can instruct ISPs to block suspicious websites without needing a court order. Second, the blocking orders do not encompass an infringing website's URL, which could raise the risk of overblocking or restricting access to legitimate websites. As noted by the Computer & Communications Industry Association, this could be "a potentially extremely blunt instrument to address online copyright infringement."[136] Third, it appears there is no verification from the authorities before ordering ISPs to block websites. Finally, the Piracy Shield system is deployed without consulting stakeholders, leaving

experts without an opportunity to caution against the unintended consequences of its implementation.[137]

Latvia

Under Latvian law, the National Electronic Media Council (NESMI) is responsible for issuing an ISP website-blocking order. NESMI does not require a court order to do this. In theory, according to the Copyright Law or the Civil Procedure Law, rightsholders are entitled to submit notice-and-takedown requests to courts for dynamic and live content injunctions.[138] However, there has not been any instance where a rightsholder has made that type of injunction request.

Lithuania

Lithuanian courts order removal and blocking injunctions for pirate websites, which have up to three business days to decide on the blocking injunction. However, it usually takes longer due to requests for additional information or bureaucracy. If the proxy sites are not explicitly specified in the blocking requests by the rightsholder, the blocking orders do not allow for dynamic injunctions.[139]

Malaysia

Malaysia started enacting website blocking in 2020, and after a year of the first blocking, it reported a 64 percent decrease in online consumers accessing pirate streaming.[140] In 2022, the country amended its copyright law to strengthen protections in the digital space and explicitly recognize streaming technology as a tool for copyright infringement. The Ministry of Domestic Trade and Costs of Living (MDT) is responsible for receiving removal requests and issuing orders to ISPs requiring DNS redirection, which they must comply with within 48 hours.[141] Additionally, MDT launched the Cyber Copyright Enforcement (CyCORE) initiative in 2021, providing a platform for local rightsholders to manually register their content. Once CyCORE issues a blocking order, it lasts for only 14 days.[142] All in all, Malaysia reported blocking over 5,100 illegal websites since the start of its blocking order.[143]

Mexico

The Mexican Industrial Property Institute (IMPI) is a key stakeholder in Mexico's copyright enforcement against online infringements. In 2017, the Supreme Court ruled on IMPI's authority to issue blocking injunctions, later codified in the 2020 Federal Law for the Protection of Industrial Property. Thus, IMPI has the ability to order precautionary measures and block websites that violate intellectual or industrial property rights or copyrights.[144] In August 2023, the Supreme Court ruled that blocking orders mandated by IMPI do not infringe upon freedom of expression, following a request from an ISP for a provisional suspension of the order.[145]

Netherlands

In 2020, the Amsterdam Court of Appeal ordered two ISPs to block access to proxy sites of The Pirate Bay. Dutch jurisprudence evolved in 2021 when rightsholders and ISPs voluntarily agreed that if a court issues a blocking injunction to one ISP, other ISPs will also block the site.[146] In addition, court orders must remain "technology neutral," meaning they do not specify DNS, IP address, or URL-level blocking.[147] Blocking orders issued by Dutch courts adhere to the principle of the "subsidiarity requirement," which ensures that antipiracy groups and rightsholders exhaust all feasible alternatives before requesting a blocking order.[148]

Norway

The Internet Anti-Piracy Law came into effect in July 2013, creating a legal framework for courts to issue blocking injunctions to ISPs to prevent access to pirate websites.[149] In 2015, courts issued the first blocking order, requiring ISPs to block the top-level domains of several torrent file-sharing sites notorious for piracy—specifically, The Pirate Bay.[150] Despite Norway being one of the first countries to provide a legal framework for courts to issue blocking injunctions, there have not been any notable cases or an evolution of the regulations for combating digital piracy since then.

Peru

In Peru, the National Institute for the Defense of Competition and the Protection of Intellectual Property (INDECOPI), a government agency, issues blocking orders as precautionary measures.[151] The resolutions grant INDECOPI extensive authority to instruct ISPs to implement blocking at the DNS level, IP-address level, or a combination of both levels.[152] Under this framework, INDECOPI has restricted access to several websites, including 128 pirate sites broadcasting soccer matches without authorization, 70 pirate sites in March 2023, 328 sites in December 2023, and 400 illegal streaming sites in September 2024.[153] In addition, Peruvian authorities have actively collaborated with Brazil's Operation 404, a multicountry initiative to curb digital piracy in Brazil.[154]

Philippines

Website blocking to protect IP rights is a recent development in the Philippines. In September 2023, the Intellectual Property Office of the Philippines (IPOPHL) issued Memorandum Circular No. 2023-025, or the Rules on Voluntary Administrative Site Blocking.[155] Under this framework, rightsholders file complaints with IPOPHL, which verifies infringement and requests that ISPs block the site.[156] IPOPHL's memorandum states that the agency may request ISPs to block sites using DNS blocking, IP address blocking or re-routing, URL blocking, or a combination of these methods.[157] In October 2024, authorities issued the first two blocking recommendations, covering six piracy sites.[158]

Portugal

The Portuguese Copyright and Related Rights Code allows the court to issue blocking injunctions against copyright-infringing sites at the request of rightsholders. The court is responsible for determining what blocking level (DNS, IP address, or URL) is appropriate, balanced, or proportional.[159] Additionally, Portugal has maintained a voluntary agreement since 2015 among rightsholders, ISPs, the Ministry of Culture, and the Association of Telecommunications Operators, which allows for the blocking of pirate sites. An update to the memorandum of understanding in 2018 enabled live blocking injunctions.[160]

In February 2025, after nearly five years of litigation and appeals by Google Portugal, Portuguese courts reiterated the legality of the blocking order to the EZTV domain (a pirate streaming site) and 500+ subdomains. The Association for the Collective Management of Copyright and Film and Audiovisual Producers brought this lawsuit in 2020, alleging that Google and other companies with DNS Resolve circumvent blocking orders, thereby failing to comply with the court's decision.[161]

Romania

Under Romanian Copyright Law, courts can issue blocking injunctions to ISPs; however, this mechanism has not been frequently utilized in the country.[162] In 2018, a Romanian court authorized a DNS-level blocking injunction to restrict access to numerous copyright-infringing sites.[163]

Saudi Arabia

In 2020, a World Trade Organization (WTO) panel decided that Saudi Arabia had acted inconsistently with commitments under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Qatar issued this dispute settlement in 2018 due to a discrepancy related to pirated content as the rightsholder of beIN, a global sports and entertainment company headquartered in Qatar.[164] Following this resolution, Saudi Arabia announced the blocking of 231 pirate sites that featured encrypted sports channels, movie streaming, and downloadable books and music.[165] Finally, in 2022, both Qatar and Saudi Arabia announced that they had halted efforts under the WTO for this case, mutually suspending the remaining requests.[166]

Singapore

Since 2018, Singapore has had a framework that allows for static and dynamic blocking injunctions, mediated by a court, which uses orders to block a combination of IP addresses and URLs associated with copyright-infringing websites.[167] Singapore's High Court consistently applies dynamic injunctions; for instance, it ordered the blocking of 26 streaming sites and over 100 associated domains in April 2024.[168]

South Korea

Under South Korean regulation, the government's media watchdog the Korea Communications Standards Commission is responsible for receiving complaints and issuing blocking orders to pirate websites if approved by the commission's vote. In addition, in October 2023, Korean authorities launched the Speed & Strict strategy to detect, examine, and block pirate websites. This strategy aims to automate blocking decisions, although it requires changes in the law.[169] South Korea's authorities plan to block illegal websites, including pirate sites, by considering DNS, IP address, and URL levels, as stated in the 2019 blocking order that identified more than 800 sites, including IP violators.[170]

Spain

The Spanish legal and regulatory framework offers rightsholders two pathways—a judicial and an administrative—to request blocking orders for pirate sites. In the judicial pathway, Commercial Courts have the ability to issue static, dynamic, and live blocking injunctions of DNS and IP addresses of pirate sites. An example of the judicial pathway is the September 2023 ruling of a dynamic blocking injunction of the illegal site Powvideo and its subdomains.[171]

Regarding the administrative pathway, the 2011 amendments to Spain's Copyright Law established the creation of the Second Section of the Intellectual Property Commission (S2CPI), an administrative body responsible for receiving and issuing blocking orders to ISPs to prevent the dissemination of pirated content sites.[172] S2CPI reported that by December 2024, it had received 630 requests leading to investigation procedures, of which 539 resulted in blocking or removal orders.[173] These blocking orders are dynamic and take into account DNS, IP addresses, and URL-level blocking.

Rightsholders can update the blocking orders to repeat offenders without a new procedure for both judicial and administrative pathways.[174] This procedure, aimed at facilitating dynamic and live blocking injunctions, resulted in a litigation dispute between the rightsholders of LaLiga (the main local soccer league) and Cloudflare. In 2022, the Spanish court permitted LaLiga's rightsholders to request ISPs to block websites within three hours.[175] In February 2025, after several reports of random disruptions affecting nonpirate websites, Cloudflare stated that LaLiga had requested blocking access to pirate sites at the IP address level and initiated litigation between the two parties.[176]

Sweden

The Swedish Copyright Act allows rightsholders to request courts to block injunctions to ISPs against pirate sites.[177] A notable case is the dynamic blocking injunction against The Pirate Bay in 2020, allowing rightsholders to expand the blocklist at the URL level whenever a new proxy site appears.[178] In May 2022, several entertainment industry groups—film, music, gaming, and publishing—along with ISPs signed a voluntary agreement to extend blocking orders to all ISPs. If a blocking order is directed at a particular ISP, the other ISPs will voluntarily remove the pirate website.[179] This voluntary agreement is at the DNS and IP address levels of blocking.[180]

Thailand

Thai regulations require ISPs to block identified piracy websites within 15 days of receiving a court order. These court orders are dynamic injunctions since they mandate ISPs to block proxy sites.[181] In February 2025, the National Broadcasting and Telecommunications Commission (NBTC) sent a letter to all ISPs clarifying the technical mechanisms for enacting website blocking of IP-infringing websites, which involves IP addresses and the sites' URLs. To facilitate law enforcement regarding the criminal financial path, the NBTC also stated that commercial banks are required to provide both the IP addresses used in criminal bank transactions and the IP addresses used by criminals for transferring money.[182]

United Kingdom

The United Kingdom has created jurisprudence to update the fight against digital piracy cumulatively over time. The first landmark ruling dates back to 2011, in the case of *Twentieth Century Fox Film Corp. & Ors v. British Telecomm. Plc*, which ordered to block Newzbin2, a site to download pirated content, which according to the ruling, had "as their sole or predominant purpose" to provide copyright-infringing material.[183] Building on this precedent, in 2012, the High Court ordered blocking of The Pirate Bay, recognizing that the site's primary function facilitated unlawful file sharing following a record label's request for a blocking injunction in *Dramatico Entertainment Ltd. & Ors v. British Sky Broadcasting Ltd. & Ors*.[184]

The 2015 ruling of *Twentieth Century Fox Film Corporation & Ors v. Sky UK Ltd. & Ors* set a precedent for blocking injunctions against streaming pirate websites.[185] This ruling established that blocking orders for streaming pirate sites are proportional and do not unreasonably burden ISPs.

The first instance of dynamic blocking injunctions in the United Kingdom arose from the 2013 ruling in *The Football Association Premier League Ltd. v. British Sky Broadcasting Ltd. & Ors*. In this case, the High Court found that FirstRow Sports, a pirate website streaming live soccer matches, infringed upon the broadcasting rights and copyrights of the games' footage. The court

highlighted the growing sophistication of digital piracy, underscoring the necessity for dynamic blocking.[186]

Later, in 2018, the High Court granted the first live blocking injunction in the case of *Matchroom Boxing Ltd. & Anor v. British Telecommunications Plc & Ors*. In this ruling, the court leveraged the time-sensitive nature of sporting events broadcasting and considered the damage caused by real-time infringement.[187]

The fight against digital piracy in the United Kingdom expanded its legal scope to include the gaming industry and circumvention technologies in 2019, following the case of *Nintendo Co. Ltd. v. Sky UK Ltd. & Ors*. In this ruling, the High Court prohibited access to sites offering circumvention tools and unlicensed games.[188]

In 2021, British courts granted blocking injunctions allowing ISPs to block stream-ripping websites, which enable users to extract audio from streaming platforms and bypass licensed services. The ruling followed the case of *Young Turks Recordings Ltd. & Ors v. British Telecommunications Plc & Ors*, with a group of independent music rightsholders as plaintiffs. The consolidation of judicial consensus to block stream-ripping sites occurred that same year, following the High Court's reaffirmation of the copyright-infringing nature of these sites in the case *Capitol Records & Ors v. British Telecommunications Plc & Ors*.[189]

These blocking orders typically specify the blocking level, which includes a combination of DNS, IP address, or URL blocking methods. Additionally, they indicate that the mandated blocking level is "at least" the type of blocking that ISPs should implement.

Uruguay

The Uruguayan legal framework for blocking orders comes from the 2022 Budget Law, which states in one of its budgetary notes that the Communication Services Regulatory Unit (URSEC), a government agency, may instruct ISPs to block websites that infringe upon copyright. URSEC can issue dynamic and live blocking injunctions, and the law requires them to coordinate with ISPs on the technical mechanisms and level of blocking.[190] In August 2023, URSEC ordered the blocking of Rojadirecta and Futbol Libre, two of the largest pirate streaming sites in the country.[191] Then, authorities issued the first live blocking order in November 2024.[192]

Vietnam

Vietnam lacks a legal framework to enforce website blocking for copyright infringements.[193] However, several legal documents, including the 2006 Information Technology Law, the 2018 Cybersecurity Law, and various circulars regarding the obligations of intermediary service providers in copyright protection and the cross-border provision of public information, imply or suggest that pirated sites may be subject to blocking orders.[194] Thus, in theory, rightsholders can request that courts or the Authority of Broadcasting and Electronic Information (ABEI) block pirate sites, although no court orders have been issued.[195] In practice, ABEI remains the sole institution responsible for ordering website blocking. For example, between August 2022 and August 2023, it instructed ISPs to block nearly 1,000 sites.[196]

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