



December 15, 2020

The Honorable Thom Tillis
Chairman
Senate Judiciary Subcommittee on Intellectual
Property
226 Dirksen Senate Office Building
Washington, DC 20002

The Honorable Chris Coons
Ranking Member
Senate Judiciary Subcommittee on
Intellectual Property
226 Dirksen Senate Office Building
Washington, DC 20002

Dear Chairman Tillis and Ranking Member Coons,

Thank you in advance for the opportunity to submit the following remarks. My name is Noah Becker. I am a songwriter, music producer, and composer. I also am the President and co-founder of Adrev, a digital rights management and media technology company.

Since the dawn of the internet, there has been a significant problem with digital piracy – a problem that gets worse every year. My company helps copyright owners police the global internet for infringements of their work. Many of those infringements occur on the world’s most popular social media and user-generated-content video streaming platforms, based here in this country. Tracking and policing infringements is an impossible job for individual creators, and only slightly easier for a company like mine with 40+ employees.

Consider these social media statistics:

- 3.8 billion people use social media around the world
- 223 million Americans use social media – projected to grow to 243 million by 2025 (Statista, 2020)

The numbers for YouTube alone are staggering in their scale:

- YouTube has 2 billion monthly active users (Statista, 2019)
- More than *500 hours* of video are uploaded to YouTube *every minute* and more than 720,000 hours of video are uploaded *every 24 hours* (Tubefilter, 2019)
- 1 billion hours of video are consumed on YouTube every day (YouTube, 2019)
- 79% of internet users say they have a YouTube account
- 73% of American adults use YouTube, while 90% in the 18-24 demographic use YouTube (Pew Research, 2019)

Buried in this avalanche of video uploads are millions of hours of infringing uses of music, movies, and television shows. No one person could possibly police this ecosystem. But today, the law places that burden squarely on the individual copyright owner. This is both because of the way the Digital Millennium Copyright Act was written 22 years ago and how it has been interpreted by the courts.

Each copyright holder is forced to figure out how to find online infringements of their work and then send a notice to *each* platform for *each* infringement. This is what we commonly refer to as “notice and takedown.” It is practically analogous to searching for needles in haystacks. And the size, scale, and global reach of the haystacks grows every day, ad infinitum.

When the law was written 22 years ago, it was assumed that infringements would be infrequent and that the notice system would be manageable both for copyright owners and websites. But the growth of the internet – and piracy – has vastly exceeded anyone’s imagination. Sending individual notices at the scale required to reduce piracy on today’s internet is not humanly possible.

For most musicians, there are thousands if not hundreds of thousands of infringements on YouTube alone – to say nothing of Facebook, Instagram, TikTok, or any number of legitimate platforms. These platforms allow their users to upload any content without asking a single question about whether they own the work or have licensed it. Most uploaders probably have no idea they have done anything wrong, and even consider copyright infringement notices as an intrusion on their rights. This lopsided understanding of copyright amongst users can be directly correlated to the lack of education surrounding copyright itself. Users do not understand copyright, because they do not have to. They need only to understand the rules of any given platform.

In addition to the major platforms, there are tens of thousands of illegal offshore websites and apps that are dedicated to piracy and beyond the reach of U.S. law enforcement. In these cases, people are basically helpless to enforce their rights.

This helplessness, during a global pandemic, has become even worse. While many industries have weathered the virus or – in the case of internet platforms – grown larger, the creative industries have suffered enormously. With the closure of live event venues, movie theatres, performance halls, and Broadway, hundreds of thousands of creative people are either out of work or left with few ways to pay the bills. In this environment, being able to enforce your copyrights and be compensated fairly are more important than ever.

My company, Adev, attempts to aggregate copyright holders and use our size to manage the scale of this undertaking. We exist precisely because the ecosystem is otherwise unmanageable. Adev oversees the protection and enforcement of over 15 million copyrighted works owned by our clients – many of whom are independent artists or creators who have been disproportionately affected by the pandemic.

Adev has spent millions of dollars developing technology and bespoke tools to manage copyright enforcement at a global scale on behalf of our broad client base. It is this large base that allows us to support the expense of technology and talent necessary for Adev to effectively monitor this ecosystem. It takes a village. We work with DIY creators, bedroom producers, and bands who rely on every penny they can find to keep their careers moving forward and make sure their bills are paid. We also work with massive enterprise rights owners who prefer to use our services and technology rather than incur the cost themselves.

I am proud to say that we have independent creators who gross over \$200,000 USD per year by monetizing the infringements we find. If they did not have a way to access technology to monitor infringement, they would be looking for work at any local store with a “We’re hiring” sign. Independent creators cannot afford to build technology or tools to manage copyright protection at the scale I have described. Instead, they must rely on companies like Adrev to help protect and monetize their rights.

Our team has three PhD researchers in audio signal analysis, 15 computer engineers, and 30+ music experts working in a service level or operational capacity. We have over 200 combined years of experience in copyright management, royalty accounting, music technology, and copyright search and identification. Most of us are also musicians, composers, recording artists, thespians, vloggers, or screenwriters. We live and work in California, Colorado, Maryland, New York, Pennsylvania, Tennessee, Texas, and abroad.

Policing piracy and copyright abuse is the fundamental issue keeping our clients and creators around the world up at night. They lie awake wondering if they are going to be able to continue thriving professionally from their artistic expression. These are people who simply want to create, maintain, and make a decent living from their art. If they cannot reduce infringement of their works, how can they expect to be compensated fairly?

The law that regulates copyright on today’s internet was written 22 years ago, well before today’s social media and streaming platforms even existed. Today’s internet looks completely different than it did then, as does piracy. It is time to look at the DMCA and how it has been interpreted by the courts – you need not have a PhD or be a computer engineer to plainly see how DMCA has failed, and continues to fail, creators.

We need to consider the fact that in a world where platforms have become our nation’s largest companies, it makes no sense to place the burden of notice-sending on individual creatives, while absolving those platforms of any responsibility to police infringement themselves.

It is time we recognize the skill, expertise, and resources of these powerful companies and place the onus on them to police the criminals on their platforms. We must require these platforms to expand access to these content protection tools to all creative people.

One such technology used by many platforms to identify content is called digital fingerprinting. YouTube’s Content ID is today’s standard – for identifying infringement and allowing both YouTube users and copyright owners to manage verified infringements or verify fair use or properly licensed use of third party copyrighted content. Adrev uses Content ID to identify infringement of our clients’ work on the platform, and I can personally attest to its success. Unfortunately, access to YouTube’s tools is difficult to attain, and mostly reserved for large media companies or aggregators like Adrev. Facebook has recently rolled out a similar fingerprinting tool called Rights Manager, but is also restricting access to the tool.

These companies decide who does and does not receive their content protection tools on the basis of when and how it benefits *them*. Copyright owners are left searching for a needle in a haystack, and the number of haystacks grows daily, ad infinitum.

Virtually all of the legal and technical expertise to curb infringement resides either with the platforms or with their existing or potential vendors. These vendors – companies like mine – work with the platforms to manage infringement using either the platforms’ existing tools, and or audio and audio-visual fingerprinting capabilities of their own. Some of these vendors, like Adrev, are American companies that

grow American jobs. We are advocating for all copyright holders to have access to some version of these tools.

FROM NAPSTER TO TIKTOK

As both a copyright creator and technologist, I find it incredibly satisfying to help artists be fairly compensated for their artistic expression and their contributions to American society.

My first effort at helping artists and writers to be properly paid for their work was while working at a prominent record label. I was tasked with finding new address and payee information for songwriters with whom we had lost contact and for whom we were holding backlogged royalties that we wanted to pay them. I had a good deal of success, and frequently made calls that resulted in meaningful windfalls for the artists. We helped artists pay off student loan debt or debt from critical medical procedures, helped send their kids to college, or provided a down payment for their first home. It was an incredible experience.

At that same time, in the mid 2000s, I was moonlighting, working on my own record label with my then production and DJ partner. I was quickly learning about the scale and volume of copyright infringement on the internet and throughout the world at large. Culture and society were changing rapidly and profoundly, becoming more and more digital at a breakneck pace. New websites, platforms, and mediums were being created every day.

Piracy fanaticism and consumer misunderstanding about copyright were growing exponentially as well. Because of all of this, the DMCA was beginning to take a more prominent role in my personal life and my work.

Every few weeks, I would release a new recording from my record label to online retail stores like iTunes and Beatport. At night, I would perform searches on piracy networks and torrent sites, trying to locate copies of my work on the ever-expanding internet. I had about 20 album releases in total, with 50 or so singles from those albums.

In my biggest sales months, I made enough to pay for rent and some food. Coupled with my DJ gigs, and remixes I had done for other labels, I was surviving. Sometimes, I was almost thriving. Manually scouring the internet for my work was daunting, but, at that point in time, it was still manageable. What was most difficult was the emotional toll. It was incredibly frustrating that people who were so clearly breaking the law had a fundamental advantage over me.

Each year since the passage of the DMCA, we have seen internet speeds increase rapidly. Over time, user-uploaded videos, whether on YouTube or today on TikTok, went from a niche concept on small websites in the early 2000s to the primary means of consuming content globally today. Where it once took 10 minutes to upload an mp3, today it only takes seconds.

Back in the mid-2000s, when I was manually searching for piracy of my work, the piracy was obvious and identifiable through text searches. For example, if my music was available on a bit torrent website, I could find that torrent by searching for the titles of my music. But when social media and short form video came into wide adoption, this became impossible.

Uses of copyrighted music within videos on social media are, by and large, not attributed either explicitly or in any of the metadata for the video, and therefore not searchable by an individual using a simple text search. Even if a text search was effective in identification, the volume and scope of work involved in manually issuing notice and takedowns would be many lifetimes' worth of work. A single individual could dedicate the majority of their professional life to finding infringements and still only identify a small fraction of the unlicensed uses of their works online.

This is why advanced fingerprinting technology, such as YouTube's Content ID, is a crucial tool for every creative person whose work might be shared online by others. These platforms should not be able to pick winners and losers when deciding who has access to technology to find infringement on their platform; they should make it available to all. Since Adrev does not have access to Facebook's Rights Manager, I will speak today specifically about YouTube's Content ID.

YOUTUBE'S CONTENT ID

The YouTube Content ID system uses fingerprinting technology to automate the identification of infringing content on its platform. Content ID is capable of audio, video, and audio-visual fingerprinting. Just as fingerprints are stored in databases that can be searched to identify a suspect or victim of a crime, so too can music and videos be converted into fingerprints and stored in a database for automated matching. The Content ID database allows YouTube to match audio and video fingerprints against the videos being uploaded to their platform – in real time.

YouTube can check for music within a user's wedding video, for instance, or match against a user trying to upload last night's episode of *The Voice*. However, in order to catch infringing uses of copyrighted work, YouTube must have a fingerprint of that copyrighted work. Just as a detective cannot catch a criminal with a fingerprint that is not in the database, the ability to catch an infringement is only as good as the database of fingerprints. Once YouTube has the fingerprint, they have the capacity to rapidly compare every second of content uploaded to YouTube against that fingerprint database – a stunning technological achievement when you think about it.

Companies like Adrev work with YouTube to deliver digital files of recordings or videos that are then fingerprinted, indexed, and stored in YouTube's Content ID database. Then, all newly uploaded YouTube videos are compared against that database for infringing matches. When we begin work with a new client, we also ask YouTube to begin a retroactive scan on previously uploaded videos.

Here is what we have found at Adrev using Content ID:

- Since our inception, YouTube's Content ID and Adrev's proprietary technologies have identified over 200 million videos containing unlicensed uses of our clients' copyrighted works.
- The typical rights owner whom we represent has an average of 12,455 (and counting) unlicensed uses on YouTube alone.
- The top 50 performing rights owners that we represent have an average of 371,981 unlicensed uses on YouTube.
- The top 500 recordings or compositions that we represent have been identified as appearing in over 13 million YouTube videos – that is an average of 26,870 unlicensed uses (and counting) **per copyright.**

Clearly, without YouTube's Content ID or similar fingerprint and filtering technology along with an entire suite of supplemental proprietary technologies, few of those infringements would have been discovered. This is the benefit of fingerprinting with built-in dispute resolution technology, and an excellent illustration of why it is so critical that more independent creators have access to similar tools. Tools like Content ID are the only way they can protect their content online.

Here is what happens when we identify an infringement:

First, YouTube alerts the uploader that their video contains potentially infringing audio or video with a fairly gentle and simple message. In essence, the alert says, "Hey, we found some stuff in your video, we're not sure if you have rights to use it. If you don't have the rights, don't worry. The copyright owner might choose to have the video removed, or they might choose to allow your video to remain available but share the advertising revenue with YouTube."

Then, the uploader is given three options for disputing the flagged material as an infringement if they believe the flag was in error:

- They can claim that the content was indeed properly licensed and/or used with authorization from the copyright owner.
- They can claim that it is a fair use – an exception allowed for under copyright law.
- They can claim that the material is in the public domain and, therefore, not copyrighted.

The uploader is also given a fourth option: to remove or mute the matched content, whether it is just a piece of the video or the entire video. In all of the above dispute options, the uploader can enter notes in the dispute form describing their rationale in greater detail.

At Adev, because we have been given access to Content ID, we review thousands of disputes from uploaders every week. I cannot put too fine a point on what I am about to say – the vast majority of the disputes that my team reviews at Adev are based on false claims from the users.

Approximately 30% of disputed content identification matches are legitimate disputes. The other 70% are simply false claims of fair use, false claims of having procured a license, or false claims that the content is in the public domain. Most of these illegitimate disputes contain perjurious information from the user.

For the 30% that were incorrectly flagged, their work remains on YouTube as it was originally uploaded. Most of the other 70% will as well. We are diligent, fair, and care about all parties' rights. If we confirm a license is in place, we release the claim. If a user makes a claim of fair use, we review it. If it is indeed fair use, we release that claim. The point is: a system like YouTube's Content ID may not be perfect, but it is leap years beyond the standard solution afforded by the DMCA for most copyright owners and users – sending individual notices and settling fair use disputes in federal court.

I believe this is proof that filtering systems work. They allow bona fide fair uses to thrive on the platform. YouTube's amazing success attests to the fact that the system, works. Content ID can match millions of fingerprints against billions of hours of video while providing copyright owners and users a set of tools to easily communicate with each other about rights claims and related issues. The system is one of staggering scale and technological prowess. To their credit, YouTube has built a system that successfully identifies infringement while also allowing fair uses and parody to thrive.

I was recently invited to participate in a Copyright Office panel convened to discuss possible “standard technical measures” that could help address some of the serious problems with Section 512 of the DMCA. I pointed to Content ID as just the sort of technical solution that works.

I said then what I repeated to you today: that a large percentage of uploaders who claim fair use or use other reasons for dispute are simply wrong. These uploaders are miseducated about what is and is not fair use, what is and is not copyright, and what one can and cannot do with others’ intellectual property.

And why would we expect them to understand and value these topics? We do not teach them in school, nor do they receive any guidance from the platforms. YouTube, Facebook and others, the world’s largest video sharing platforms, allow users to upload anything they want – to be shared immediately with the planet, with relative impunity.

My Copyright Office panel included technologists looking for solutions for infringement. But it also included a representative from the Electronic Frontier Foundation, an organization claiming to represent internet users. I commend the Copyright Office for including different perspectives. However, what I witnessed were technologists making a good-faith effort to solve problems on the one side, while the EFF representative relied on years-old, specious arguments in bad faith, insisting that the DMCA was actually harming internet users.

Unfortunately, all three panels that the Office held contained similar “experts” claiming to represent the interests of internet users. They argued persistently that standardizing and scaling the identification of copyright infringement will somehow inhibit free speech or fair uses. They declared that technology cannot identify fair uses and should not be used.

They are wrong. Content ID is a technology that allows for the identification of fair uses and does not inhibit free speech. There are good filtering and audio-video segment matching techniques that help filter likely fair uses. This filtering, augmented by some human expertise, *can* scale effectively. And, remember, the vast majority of disputes are clear copyright infringements and do not raise legitimate fair use questions.

It should be possible to resolve a valid claim that is, in fact, a fair use in less than a minute. If that fair use claim is reviewed by a diligent and competent administrator of YouTube’s system, the infringement flag can be cleared with virtually no delay. The uploader’s channel and its standing with the platform are not harmed, nor is their ability to potentially monetize that fair use.

But, even after we explained all of these prudent, built-in safeguards that benefit both rightsholders and uploaders, the panelists purporting to represent internet users insisted that systems like Content ID can violate free speech by removing fair uses that are indeed valid.

These panelists are largely employed by a constellation of groups based in Washington, D.C. that claim to represent users. In reality, most of them get funding, sometimes almost all their funding, from the largest internet platforms in America.

There is a better way for these internet companies to use their money. Instead of funding organizations to spread misinformation, they could do more to actually educate uploaders, and take steps to allow more copyright holders access to their advanced technologies.

I stand firm on this point: when it comes to the big internet platforms, the best way to effectively maintain the value of creative expression online is by adopting standard technical measures that reverse the enormous power imbalance and place the onus on the platforms to put an end to infringement.

With Content ID, YouTube has shown us a functional and world-class example of how technology can be used to serve both rightsholders and users, at massive scale, with democratic efficiency. I believe this sort of technological solution is exactly why lawmakers included the standard technical measure provision in the original DMCA. The idea was to enshrine in the law the notion that technology would evolve, and that Silicon Valley and copyright holders should work together to implement measures that could be standardized to prevent online infringement.

There is just one problem: it never happened.

We need standard technical measures today more than ever. The technology, human capital, and willingness to cooperate by rightsowners and music technologists like me is abundant. Now we just need the platforms, and user groups with a legitimate interest in fixing the problem, to come to the table. And, if they will not, I believe there are Senators at this hearing who plan to legislate a solution.

CONCLUSION

While I have pointed to Content ID as today's best in class matching and filtering technology, it does have one glaring shortcoming. YouTube does not offer Content ID to small independent creators, precisely the community of people who need these scalable tools the most. Like Facebook, they decide who receives access, and most of the time, it is not the independent creators who need it so desperately.

YouTube's Content ID and Facebook's Rights Manager are currently available to the largest copyright holders, including movie studios and record labels, and to companies like mine who aggregate users who own or administer copyright portfolios. We make our money by working with copyright owners who opt to monetize infringements of their work on YouTube, splitting advertising revenue with us and the platform, and in a similar fashion with Rights Manager.

However, common business sense dictates we must charge clients a fee who do not choose to monetize but simply want to have their work removed from platforms, as we incur costs for the labor we perform. If we cannot share revenue through monetization, we must charge a fee. We understand why many potential clients cannot afford to pay us for this work, but that does not mean they should be left in the wind to enforce their rights one takedown notice at a time.

For this reason, YouTube, Facebook, and others need to make fingerprinting tools available to those copyright holders – the ones who do not want their work on the platform at all. Without access, they have two bad choices: manually police the platform, which is impossible, or come to Adrev or other 3rd party providers and pay for service they cannot afford.

Without these tools, musicians and filmmakers are left without any real capacity to monitor the internet for use of their works. Imagine if a detective had to manually review each set of fingerprints from a crime scene by visually comparing them against millions of unique fingerprints – using only their eyes. The task is unthinkable and impossible.

Today, I have tried to illustrate the David and Goliath battle that individual copyright holders are waging against piracy on the internet. They are fighting against a magnitude of infringement in the trillions, happening on platforms numbering in the hundreds of thousands around the globe. And, in an effort to protect their rights, they are waging a battle against some of the most powerful and wealthy American companies that have ever existed.

All the while, outdated provisions of the DMCA, written 22 years ago and weakened by court decisions ever since, are effectively tying one hand behind every creator's back. Many businesses in the creative communities have shuttered and many people have been forced to change professions because of it. Meanwhile, a small handful of technology companies have thrived. And those same companies are funding the groups who claim to be fighting for internet users, while deploying lobbying campaigns against copyright with claims that fingerprinting and filtering somehow inhibit free speech. This needs to stop.

We must refocus the discussion away from rhetoric and back to facts. We need to focus on common-sense solutions to these problems, seeing through the disingenuous and inaccurate arguments against our efforts. We need to embrace this simple truth: there are existing, profitable, and sustainable technologies and companies that these internet platforms could use to maintain and even enhance the value of copyright on their platforms.

Rightsowners and my fellow technologists fully understand the complexities on both sides of the issues surrounding copyright. I strongly believe that we have the will to work with all groups and platforms for a more sustainable American creative economy. Collaboration and compromise lives at the very nucleus of creation. It is in our nature to want to collaborate with others to create great artistic or technological achievements.

But, every time we convene on these matters and extend this olive branch, the platforms and their advocates are not willing to compromise or collaborate. They claim that innovation will be harmed or free speech will be chilled. Or, they claim – erroneously – that the real problem with Section 512 is abuse by copyright holders. They claim to be fighting for internet users and free speech, but they are actually arguing to silence the rights and economic prosperity of the very artists who rely upon free speech to make their living – the people whose work made the platforms rich in the first place.

I ask you today for your help fixing this broken system. We need a digital world that properly values creative rights and properly educates its users about why copyrights have value and why that value is important to our country. I ask you to convene the copyright community and the groups who represent Silicon Valley, along with the Copyright Office, to finally create meaningful standard technical measures.

I ask you to encourage these groups to find meaningful ways for the platforms to educate internet users about copyright and fair use. Finally, I ask that you give us a deadline for accomplishing these goals. Hold us accountable for results. The future of creativity depends upon it.

Thank you for your time and the opportunity to share my perspective.