

Piracy is a problem that has existed for over a century, and is more relevant in today's culture than ever before. According to research by a professor at University of Michigan Law School the first documented case in the US occurred in 1812. This is the 200th anniversary of piracy in the US, and the war has just begun. Over the past several months protests broke out across the US, boycotts have been set up, petitions signed, and the list goes on. It may seem that piracy prevention is a great thing to target, but the methods currently being deployed are far from optimal. With technological follies, economic destruction, a massive invasion of privacy, and loopholes that could lead to an abuse of power in addition to pirates still slipping through an alternate solution must be drafted.

Nearly every group opposing the bills believe that the freedom of speech, which the people of America are guaranteed, will be impeded greatly. With bills such as SOPA, PIPA, ACTA, and now CISPA, it is no longer a guarantee. In the earlier drafts of the piracy bills the power to prosecute was put in the hands of the private organizations and companies. (Friedman) In addition to allowing the companies to prosecute sooner, they will now have the ability to take down entire websites they *believe* are infringing on the law. In both SOPA and PIPA the definition of piracy is so vague that it would be possible, with the right wording, to misinterpret a negative comment against a company or individual as a form of infringement. (Brookings) In addition to this, any website can be taken offline without probable cause or prior notice; even if a website has no content whatsoever that is breaking the law, just by having an enemy in a company with these privileges your site could be taken offline.

With the later bills such as ACTA and CISPA all of the power still resides in the government. The cases of piracy would be handled by new and existing organizations and all reports would be handled by them. This would seem like a better idea than letting private organizations handle the dirty work, but in reality it is just as bad. In both private party piracy protection and government handling of piracy protection there are still flaws that can allow serious abuse of powers. For example, a common item

thrown into the bills is the ability for the government to retrieve your personal files and information under the bill by stating that they have reason to believe that a person is a danger to the country.

National security clauses are extremely dangerous in that they are worded with absolute vagueness and cover a really broad spectrum of content that could easily be misconstrued to look like a matter of national security.

In the latest bill, CISPA, it was cleverly disguised as a National Defense bill with the name Cyber Intelligence Sharing And Protection Act. Because of the naming convention, the bill went fairly unnoticed until the very last minute, and there wasn't a push for re drafting before it was passed through the house. Right up until the passing the bill had a minimal amount of opposition, but the voting was pushed forward an additional day, and potentially dangerous amendments were tacked on and rushed through. The most devious example would be the additional times when the bill could be used in court to gather information. According to the latest revision of the bill, in the cases of piracy, alleged piracy, national security concern, and now, the fear a child or another citizen may be in danger, the government will have free access to any digital content they wish relating to you. (Representatives) The wording is so vague, there needs not be a probable cause before collecting said information because it can be claimed under one of the latter two categories without question. Once the information has been compiled, there is no clause giving an expiration to the content, and it potentially could be kept forever. (Representatives). As far as websites and businesses that have been stripped from existence, whether wrongly or otherwise, more trouble comes about. The only way to get it back would be to hire a lawyer and fight it in court. Even if you win the case, you as a business owner have lost due to the massive amounts of money spent in court.

It may not be immediately obvious who is pushing for these bills, as there are many downfalls without even looking to the monetary side. Even though the group is a small percentage of people, take

a look at who the advocates are; they are the record and film industries themselves, people who have stocks in these massive businesses, and individuals who either rarely use the web to its fullest extent, who are misinformed due to the lack of unbiased news and haven't read the legislation themselves. Many people fight that the record companies could bring in massive amounts of revenue and help grow and become more profitable as a result of capping piracy, though this may not necessarily be the true. Even if it was, the entertainment industry is only a small part of the economy as a whole. If the sales did all end up being restored, how much would it help the US as a whole? Probably not enough to justify stripping the country's citizens of their freedoms. The group who is in favor of the bills has argued that there are no other alternatives, that the battle has gone on too long that it needs to finally come to an end. The problem has been active for so many years, it may seem fruitless to try any other measure, but there are definitely alternatives. As a short example, many people would buy many more movies if they were sold with more options when purchased. You can currently only rent movies in their digital forms. If I could purchase one for download, and keep it to put on as many devices as I wish, as long as they were mine, I would be significantly more open to frequently purchasing this content. To buy it and only be able to watch or listen to it on one device a set number of times is ridiculous. In the past, when you bought a record or CD you could use it in any device and use it as many times as you liked. This kind of freedom would open the industry to much less theft and even introduce more needed flexibility and innovation that is currently being hindered.

There are many people for leaving the legislation as-is. There are tools available now that let these companies take down the heavy hitters of the piracy industry, but the root of the problem comes from technology advancing and this industry refusing to put money into innovation and moving forward. As technology improves, their customers' needs change. To keep this industry as successful as possible they need to learn to improve and adapt to the customers' needs. The current state of the industry is grim, even though it flourishes. Plenty of new content is constantly being generated, but it isn't reaching

the audience many people would like to see. With their severe limitations on distribution all content is easily produced on a physical medium, but it is sometimes difficult to play. Some of the later content released by MGM uses a new form of encryption that was said to "effectively stop piracy in its tracks" (Samuels and Atherton) but is now failing, only a short time after being released. The legitimate users of this content have a difficult time playing it because you need a compatible set-top box and television and can't have any type of recording equipment hooked up in between if you wish to play it. This would include an old VCR, as they don't support the schema. These paying users are having to fight just to use the content they rightfully own, while the pirates have cracked the encryption, removed it, and are now pirating the movies like they have for decades. By restricting content usage they are not combating piracy, they are in fact pushing more people to it as the content is easier to use and more reliable.

The entertainment industry is a massive multibillion dollar industry, but by economic definition, is a monopoly. It may seem as though there are many competing production and distribution companies, but in reality, there are very few, as they for the most part own one another, or are branch companies from a giant father company. There are several characteristics that describe a monopolistic market, but one of the most important is the number of entry barriers. The market is currently leaning more toward a monopoly in the entertainment industry. There is a lot of product differentiation, it is very cost prohibitive, as many of the movies produced are well over \$50 million in production costs according to the IMDB website (IMDB). These restrictions alone keep many new companies from entering into the film industry, but when you place an additional barrier into the playing field, a whole new level of difficulty has been reached.

Even though the past bills have been shot down, CISPA, the latest was passed in the US House of Representatives, though it contains much the same material, but they also threw in some additional wording that makes this double as a national security bill. This is dangerous because it is hiding the same bad legislation that was shot down several times before. The drafting of said works costs the US a lot of

money that could be put into fixing other broken sections of the government, such as education. Instead of reallocating these funds the legislators and congressmen keep pushing for these bills, and padding their paychecks. This may spark a question; Why would they want this so badly? The answer lies with the lobbyists. How is this related to the censorship and anti-piracy bills? Simple, the multi-billion dollar record industry hired lobbyists to give members of the house an incentive to vote the bills through and add their own interpretations of the law. Many legislators make their money by passing bills to receive their incentive pay, that can make them millions per year. This kind of corruption leaves us with a broken government. The government operates on a system of checks and balances, but when an outside force comes into play and persuades the people who are a part of this self-balancing system, bad legislation can slide through "unnoticed" and can cause real damage in the long run.

In the short term these bills may not have a huge negative impact; piracy will decrease out of fear of prosecution, illegal content will be stripped from the web, and profits may rise for the record industry. What happens when we look far into the future though? The picture is much more grim; people will have been prosecuted and thrown in prison with little or no trial at all, barriers will be so great that even with an original idea no new companies will be entering into the industry, and the ones who do will be bought by the media giants. Artists will have a more difficult time producing completely original content, as even the reuse of a theme or common phrase can lead to infringement. And worst of all, the record companies will likely not be making a significant amount of additional profit. The people who were previously stealing movies will find ways around these blocks and will return to other thrifty ways of acquiring content while everyone has to fight firmer content restrictions. The situation is grim at best, and the only benefit is that the record industry will have the power to prosecute on their own.

Going against what the media and record companies want you to believe, piracy operates on its own cycle and isn't as troublesome as you think. How could I say this when they claim to be losing,

millions, possibly billions of dollars? As a computer scientist looking into the economics of piracy, some new doors open. Are the pirated contents really an exact copy? How long does it usually take before said content comes out? These are all valid points that need addressed, and could possibly help provide insight into a solution to the problem.

You may have heard the term "lossless" being thrown around the internet on a video, audio, or photo site. This term describes a file that, regardless of how far down the chain of copied copies it is, will still be computationally identical to the original. Let's keep semantics aside and talk about photos because they are far less complex. A photo that is "lossless" is called a RAW image. With a raw file there is no compression or encryption or additional information attached to the file. These are nothing but the straight uncompressed image, and the files are very large. Most every image you will ever encounter will be a JPEG or compressed Bitmap. This means that by saving the same file over and over, or even copying the file, and copying that copy and repeating that over and over, you will significantly degrade the image to the point where you will no longer want to use this. In a quick trial I did on a computer I found that an image taken on a 12 megapixel digital camera in a lossy format only took about 100 copies before it started to show immediately noticeable signs of degradation. You may wonder why this matters, and the simple answer is with every copy, that file loses value to the user. RAW images are not an extinct type, music is very rare to find in a lossless format, and movies, well, we can call them extinct. The only way to get your hands on a lossless film is to go straight to the camera that took it, or the super computer that was needed to bring it to a format that your average person could use. This is very important when it comes to piracy.

When it comes to pirating people always have risk looming over their heads. Not everyone turns to it because of this threat, but the people who do need incentive. If they can get a near identical theatre quality movie for free they will, if not they may hesitate. As movies are uploaded and

downloaded, converted between formats, and copied, they will lose quality at an exponential pace. This means that after a short amount of time, people will find that pirated copy undesirable and just buy the real thing as the quality is so low that it is not worth the risk of getting caught and fined. Pirated content is constantly being removed and replaced in an endless cycle, which sets this point in stone. As time goes on, piracy will essentially kill itself off due to nothing more than poor compression algorithms that cause quality reduction.

Looking at availability of pirated content shows some interesting trends. In the book *Pirates of the Digital Millennium*, the author unknowingly points out in almost every example that the content being pirated comes from the disks that are being sold in stores. This means that when a feature film comes out in theaters, it won't be available for download immediately as the content hasn't technically been made public yet. Here lies a potential answer as to why the problem isn't as big as one would expect. When the films are in theaters and not available online, people have no option but to go to the cinema and watch it. These cinemas draw in massive revenue on opening days, and as of late have been breaking records. By the time the movie is in stores, most of the novelty has worn off, and the stragglers can watch it, or buy a copy to watch again in the comfort of their own homes. Most pirates have viewed the content in another location before turning to piracy, usually in a paid-for atmosphere. (Rochester) Sure they could be making additional revenue off of these people, but they aren't at a complete loss; most of the time already having purchased the copy once before and losing it, watching the movie in the theater and getting a copy at home, etc. Piracy does leave its mark, but is it as devastating as they lead us to think, I don't believe so.

What are the alternatives if these bills aren't a good solution? Provided either the artists or the industry are willing to give a little bit, I believe piracy could be minimized greatly. To begin, let's look at the industry itself. In the past, they fought the adaptation of the CD, saying it would effectively put them

out of business. Once the inevitable happened and CDs started becoming mainstream, they had to adapt to and adopt the technology. (Samuels and Atherton) This situation is no different, the technology is moving away from tangible goods and into the digital realm, and instead of adapting, they are trying to restrict the tangible goods so they are harder to convert to digital form and copy. This is the wrong move, and could be costing massive amounts of money to be tossed out. Instead of trying to band aid the situation and leave the real wound unfixed, they need to target the root of the problem and curb customer dissatisfaction giving the consumer an incentive to buy instead of steal.

On the other hand the artists could make the push to end piracy, and many are. There is a trend in the music and independent film industries to handle all of the publishing on their own. This push is leaving out the middle man. The artists will make more profit, and have total control over their creative works. They can do promotions, price where they want, and offer it in any medium they choose. This flexibility is starting to prove invaluable as a lot of these artists listen to the customer and really take off as their stuff is more freely available to the listener/viewer. This will damage the publishers, but should leave the entertainment industry rather unscathed; the artists aren't leaving it after all.

There are a lot of proposed solutions to the problem of piracy, and though I only provided two that I believe would be economically and politically feasible there are numerous other proposals on the internet, including doing nothing more than fixing the current system they have in place. Instead of fighting this until the last minute and dumping a ton of money into the repairs later, why not start now and minimize the overall cost and time needed to recover later. the current situation is grim with blatant infringement on our personal freedoms, and it must be stopped. Piracy isn't as big of a problem as it is made out to be, and in most cases has a habit of dealing with itself. Next time you get the opportunity to stand up for yourself, do not assume other people will have the same opinion, get out there and set things right. Now is your chance, it will be too late once it takes effect.

Works Cited

Cavazos, Edward A and Gavino Morin. *Cyber-Space and the Law: Your rights and duties in the on-line world*. Cambridge, MA: Second Printing, 1994. Print.

Fisher, William W. "Promises to keep [electronic resource]." Fisher, William W. *Technology, law, and the future of entertainment*. Stanford, California: Stanford Law and Politics, 2004. 340. Digital.

Friedman, Allan A. "Cybersecurity in the Balance: Weighing the Risks of the PROTECT IP Act and the Stop Online Piracy Act." *The Brookings Institution* (2012): 1-6.

IMDB. *Internet Movie Database*. 15 4 2012. 29 4 2012.

Representatives, US House of. "Rules Committee Print 112-20 Text of HR 3523, The Cyber Intelligence Sharing and Protection Act." *US House of Representatives* (2012): 1-18, 43-195, 558-1014.

Rochester, Jack B. "Pirates of the digital millennium [electronic resource]." Gantz, John. *How the intellectual property wars damage our personal freedoms, our jobs, and the world economy*. Upper Saddle River, NJ: Prentice Hall/Financial Times, 2005. 294. Digital.

Samuels, Joel and Lori Atherton. "A History of Piracy." *University of Michigan Law School* (2009): 1.