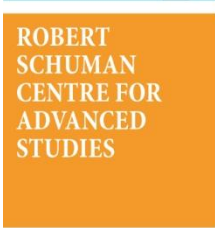




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RSCAS 2013/24
Robert Schuman Centre for Advanced Studies
Global Governance Programme-45

Intellectual Property, Innovation and the Governance of
the Internet

David K. Levine

European University Institute
Robert Schuman Centre for Advanced Studies
Global Governance Programme

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Internet**

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EUI Working Paper **RSCAS** 2013/24

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Abstract

I discuss both the causes and consequences of the Internet being squeezed by copyright proponents. The striking fact is that while this squeeze has a broad and negative impact on society broadly, it brings very little benefit to the copyright proponents. The implication for the governance of the Internet is clear: a small minority who derive little benefit in an effort that imposes great costs on everyone else should not have a role in governance.

Keywords

Internet governance, copyright, piracy, downloading.

1. Introduction*

I am going to discuss both the causes and consequences of the Internet being squeezed by copyright proponents. What are the benefits of this squeeze to them and to society more broadly? What are the costs? What are the implications for the governance of the Internet?

The issue of copyright is a very contemporary one in Europe. On December 6, 2012 the European Commission agreed to revisit the European Union's rules on copyright. The Liberal Dutch MEP Marietje Schaake argues that faster and more radical action is needed. Independent music producers welcomed the Commission's cautious approach. A variety of "usual suspects" objected strongly to any proposed changes: these include collecting societies that manage music rights, the European film industry – including prominent directors such as Michel Hazanavicius of France, Ken Loach of Britain, Bela Tarr of Hungary and the Dardenne brothers of Belgium – the European Writers Council, the Federation of European Publishers and the International Federation of Reproduction Rights Organizations. Major trade associations in the electronic communications industry also indicate strong opposition to change.¹

What is this copyright debate all about? Largely it is about law pressed by the United States on the rest of the world, so I'll focus on the U.S. law. The U.S. Constitution authorizes Congress to "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Recent court decisions have interpreted "limited Times" as meaning "forever." Some argue that copyright merely protects "expression" of ideas not ideas themselves. However copyright protection is not especially narrow: it protects not only the expression of an idea – but also characters, sequels, derivative works of all kinds, movie rights, and indeed as few as four musical notes are all protected by copyright.

The issues are focused in a recent contretemps in the U.S. On December 7, 2012 a congressional "staffer who authored a policy brief that gave a searing review of existing copyright law was fired from the Republican Study Committee." The title of the policy brief was "Three Myths About Copyright Law and Where to Start to Fix it." The three myths?

- ❑ Myth 1: that copyright is meant to compensate the creators of the content. Look above at the authorization from the U.S. Constitution – compensating creators is not mentioned, it is the useful arts and sciences that copyright is meant to promote.
- ❑ Myth 2: that copyright is free market capitalism. In fact copyright is a monopoly right – the exclusive right not to compete with one's own customers. This is antithetical to the free market.
- ❑ Myth 3: copyright promotes innovation and productivity. Simply put – all the available empirical evidence suggests that copyright by tying up innovators in legal tangles and giving existing monopolists a legal tool by which to attack up-and-coming rivals suppresses innovation and consequently has a negative effective on productivity.

The report also highlights the ridiculous length of copyright protections: in the U.S. it is now the life of the author plus 70 years and for corporate copyright, 120 years after creation or 95 years after publication.

The analysis and recommendations of the report are as follows. It concludes that the current system is an overprotective, government-subsidized monopoly that has slowed the creation of works by DJs and the remix industry, has hurt scientific inquiry, has stifled the creation of libraries, has discouraged

* I would like to thank Michele Boldrin and the National Science Foundation (Grant SES-0851315).

¹ Keating and O'Donnell [2012].

new industries that could use public domain content for “value-added” works and has hindered journalism by protecting incriminating information. It proposes as solutions

- ❑ Reduce the damages for infringement: “in a world where everyone copies stuff at home all the time, the idea that your iPod could make you liable for a billion dollars in damages is excessive.” This recommendation is especially apropos in light of the recent death of Aaron Swartz – who was threatened with 50 years in prison for copying – and returning – a large number of scientific papers.
- ❑ Expand fair use.
- ❑ Punish false copyright claims. Current law allows anyone to demand the removal of documents from the internet without providing evidence that they hold the copyright and no penalty for lying.
- ❑ Limit copyright terms and create a disincentive for renewing them. Specifically a 12-year copyright term is proposed with renewals up to 10 years at an escalating price to 10% of all revenue for the 10-year version. This is much closer to copyright law as it originally existed in the United States.

The current murky and difficult legal situation is highlighted by the Megauploads case. On January 19, 2012 the U.S. government seized the Megauploads domain and New Zealand arrested the owner of the domain Kim Dotcom. Megauploads was a website that provided ad-supported storage for files. Some evidence was provided that some files were made available in violation of U.S. and international copyright law – although subsequently Kim Dotcom has argued that these files were retained explicitly at the request of the U.S. Government so that they could investigate the possibility of copyright violation. Many files on the site were not in violation of any law. As of today – more than a year later – none of the files on Megauploads have been returned to their users. The U.S. government asserts it has no obligation in the matter and indeed argues that material you put on the Internet does not belong to you. It is as if you parked your car in a parking garage – in Canada no less! – and the U.S. Government seized all the cars in the garage on the grounds that some of them had been stolen.²

The precedent of Megauploads poses an enormous threat to one of the most up-and-coming uses of the Internet – the “cloud.” It is a threat to widely used domains such as Facebook and Dropbox. Is your data safe “in the cloud?” It is in fact unlikely that the U.S. would seize all the data in Dropbox – although there is little doubt that some of it is there in violation of copyright. If it did so there would be a massive public outcry. We could say the same about Facebook. However: for a potential competitor to Facebook or Dropbox the situation is different. It is hard to start a new social networking or file-sharing business. Unlike a large existing business, a newcomer can easily be shut down without a public outcry. So it is now a lot harder to start the next Facebook. So here we are creating huge barriers to entry in the face of an economic crisis we are supposed to innovate our way out of...

2. Some History

The antisocial behavior of copyright holders in the digital age is not new. In August 2000 Sony Pictures Entertainment US senior VP Steve Hecklerat said at the Americas Conference on Information Systems:

The industry will take whatever steps it needs to protect itself and protect its revenue streams... It will not lose that revenue stream, no matter what... Sony is going to take aggressive steps to stop this. We will develop technology that transcends the individual user. We will firewall Napster at source - we will block it at your cable company. We will block it at your phone company. We will block it at your ISP. We will firewall it at your PC... These strategies are being aggressively pursued because there is simply too much at stake.

² These facts can be found in Wikipedia.

Sony did act aggressively: its BMG division produced “copy protected” CDs. On October 31, 2005, Mark Russinovich released an analysis of the software on those CD’s. Unmentioned in the EULA and indeed before the EULA appears for approval the CD secretly installs a rootkit giving Sony complete control of your computer. No uninstaller is provided for this secret rootkit – and for obvious reasons the installation of a rootkit is illegal in many jurisdictions. The rootkit software runs in the background and consumes system resources, slowing down the user's computer, regardless of whether there is a protected CD playing. It employs unsafe procedures so that starting or stopping the rootkit can lead to system crashes. Inexpert attempts to uninstall the software can lead the Windows operating system to fail and the rootkit opens the system to infection by worms and viruses – and many virus writers promptly took advantage of the Sony installed rootkit. Even more surprising – the “copy protection” can be foiled by simply disabling the CD “autorun” feature on your PC!!

As a consequence of Sony’s “aggressive” action they were forced to recall the product, they were sued by the state of Texas and class action lawsuits were brought against Sony in New York and California. They eventually reached a settlement with FTC including an offer of \$150 to users whose computers were damaged by their software.³

But history did not begin in 2000, nor did the copyright wars start then. Let’s role the clock back to the U.S. in the 19th century. At that time the U.S. was not an exporter of copyright movies and music and eager to enforce copyright on the rest of the world. On the contrary, the U.S. did not recognize foreign copyright at that time and in particular books written in England were not entitled to copyright in the U.S. Never-the-less

American publishers found it profitable to make arrangements with English authors. Evidence before the 1876-8 Commission shows that English authors sometimes received more from the sale of their books by American publishers, where they had no copyright, than from their royalties in [England] ⁴

From an economic perspective there is an interesting natural experiment involved: the U.S. and U.K. were of similar size, income and literacy in the mid-19th century. In the U.S. the 1850 population was 23.2 million and per capita GDP was about \$1930 (in 1996 U.S. \$), while in the U.K. in 1851 the population 27.5 million and per capital GDP in the same units was \$2838. The literacy rates in both countries was roughly 85%. There was also an enormous price differential between sale price of books without copyright in the U.S. and with copyright in the U.K: for example, Dickens’ *A Christmas Carol* sold for six cents in US, for two dollars and fifty cents in England. Yet the sky did not fall in England; and indeed Dickens and other English authors substantially profited from their U.S. sales.⁵

It is more difficult to discover the consequences of the absence of copyright in contemporaneous times because copyright has become so ubiquitous. However, in the U.S. government documents by law may not be copyrighted. Generally these are tax forms and other documents which do not generally compete with fiction best-sellers. There is however an exception: the 9/11 Commission Report. This was a report by a group of experts about the events on September 11, 2001. As it was a government document, it was not covered by copyright. It was released to the public at noon on Thursday July 22, 2004 and at the same time became freely available for downloading from a government website. The printed version was published by a private publisher W.W. Norton.

Other publishers were incensed with the exclusive arrangement that Norton made with the U.S. Government – calling it “Norton’s royalty free windfall.” What exactly did Norton get from the U.S. Government? Not the exclusive right to publish the book. The book was not under copyright – anyone was and is free to reproduce the document and sell it in competition with Norton – and indeed the New

³ This description of the Sony affair is based on Wikipedia.

⁴ Arnold Plant [1934].

⁵ See Boldrin and Levine [2008].

York Times in conjunction with St. Martin's Press did exactly that two weeks after the initial release. What Norton got was the right to publish first and to use the word "authorized" in the title – something any author can provide with or without copyright.

About 6.9 million copies of the report were (legally) downloaded over the Internet. Norton sold about 1.1 million copies, charging between a dollar and a dollar fifty more than St. Martin's; other publishers also estimated Norton made on the order of a dollar of profit on each copy. Norton's contract with the U.S. called upon them to donate their "profits" to charity – and indeed they "donate[d] \$600,000 to support the study of emergency preparedness and terrorism prevention." The point is – going first is lucrative and the other publishers would have paid for the right that the U.S. gave Norton for free.

Including free downloads, about 8 million copies of *9/11 Commission Report* are in circulation. By way of contrast the initial print run for *Harry Potter and the Half-Blood Prince* was 10.8 million hardcover copies. Based on the data for the *9/11 Commission Report* we can estimate that if J. K. Rowling were forced to publish her book without copyright she would earn well over a million dollars. This is of course much less than the billions she currently earns. On the other hand it is a great deal more than she earned in her former occupation as an unemployed French teacher.⁶

How big is the industry that is intent on running the Internet to protect "their" content? In 1998 the music industry provided value added of about 13.72 billion US\$ and the movie industry is about 3 times as large, so the "copyright industry" has an annual value added of about \$50 billion US\$. By contrast also in 1998 computer hardware and software industry generated value added of more than ten times this amount: \$560.27 billion US\$. Another indication of the importance of the "copyright industry." Radio spectrum is worth roughly ten times as much for cell phone usage as for over the air television. This is consistent with other evidence showing that people spend roughly ten times as much money entertaining each other as they do buying commercial entertainment from the "copyright industry." The fact is that the "copyright industry" is a small industry and if it vanished overnight it would have little economic impact, and would not much reduce our overall entertainment.

Is the "copyright industry" really threatened by modern copying technology? It is true that the more quickly copies spread the more rapidly prices drop. It is tempting to conclude that there is less profit with quicker copying. But this is simply a miscalculation that shows the dangers of rounding off small numbers to zero. It is true that low price sounds like "low profits." But to compute profits, these low prices must be multiplied by large quantities. Profits may go up or down, as any Econ 101 student knows, the result of that contest depends on the elasticity of demand. So there is a moral: if profits are a small number times a large one, don't round off the small number to zero.

As contrary as it seems, it isn't that hard to make money by giving things away for free. Think about radio and television in the U.S.: for decades people got rich in that industry – yet it had no choice but to give away its product. We know how it was done – they sold advertising. This is but one example of what economists call complementary sales. You give away one product for free to increase the demand for another product that you sell.

Take music. Less popular musicians have always made most of their money off of live performances. Now the popular ones do as well. A case in point is the rock band Metallica. The drummer Lars Ulrich is a very vocal proponent of strong copyright enforcement. As it happens he worked as gas station attendant before becoming a rock star. According to Billboard magazine:

Along with touring revenue -- the band [Metallica] pulled in \$22.8 million from 55 arena shows reported to Boxscore that drew more than 968,000 fans -- Metallica sold 694,000 albums in 2009. The majority of those sales came from its Rick Rubin-produced 2008 release, "Death Magnetic"

⁶ See Boldrin and Levine [2008].

(297,000). Album sales revenue totalled \$1.6 million. And most of Metallica's track download earnings came from its 1991 hit "Enter Sandman," which sold 450,000.

In a sense this highlights the real problem with monopoly. Most of Metallica's income comes from their live performances. The "copyright" material they trying to destroy the Internet over of is a very modest portion of their income. But think of it from their point of view. If they can get someone else to bear the cost of enforcing laws that bring them \$1.6 million a year – no matter how many billions that might cost society – it is worth it from their point of view.

We can put that idea in perspective in the context of patents. A study in the *American Economic Review* examined the cost of putting the anti-biotic Quinolones family of drugs under patent in India. They estimate that the (rich U.S.) patent holders would profit by about \$20 million – against welfare losses (to poor Indians) of \$300 million a year. When the government is asked to enforce private monopolies the monopolists impose enormous social costs for very modest private gains.

Theory aside, the last decade has been a huge natural experiment in copyright law. Since the advent of Napster in June 1999 pretty much all recorded music has been available for free on the internet – so *de facto* there has been no copyright in music during this period. Has the sky fallen on the music industry? For the big media companies perhaps it has – but they don't create music. How about for artists? Is copyright in fact useful in increasing either the quantity or quality of music? It isn't that easy to measure either the "quantity" or "quality" of music. But a simple measure is the number of professional musicians – people who make their living in that industry. From the U.S. Survey of Current Population in the five years leading up to the widespread use of peer-to-peer file sharing (1996-2000) the percentage of the employed population working as musicians was .13%. After Napster in 2006-2010 the ratio was...still .13%. Apparently the sky did not fall.

Much of this discussion misses the point of what the Internet is all about. The ability of the Lars Ulrich's and J. K. Rowling to earn lots of money will exist regardless of copyright law. They may earn a few millions more or less – but so what? They have plenty of incentive to produce great stuff – even a few paltry millions is better than being a service station attendant or unemployed French teacher. Where copyright should matter is for works of marginal social value. Lesser works produced by lesser artists who barely scrape by and who might be forced to choose a lesser occupation if not for the extra revenue produced by copyright. In economic terms – competition does not result in full appropriation of social surplus by the creator. Nor for that matter does copyright result in full appropriation of social surplus, but it does result in a higher appropriation of social surplus. If everyone appropriates the full surplus from everything they create then we can be confident that everything that is socially beneficial will be created. But that is a necessary condition. Things that generate huge social surplus will be created even if the creator can only appropriate a small fraction of that surplus. It is the marginal ideas that must have full appropriation – it is the marginal contributor for whom copyright must work its magic.

And therein is the problem. On the one-hand the marginal contributor faces little competition – so has little need of protection. *Harry Potter and the Half Blood Prince* was scanned and illegally released onto the Internet within hours of appearing in print – and indeed illegally translated into Chinese in about the same amount of time. By way of contrast when we investigated a book you never heard of, Sara Rath's opus *Star Lake Saloon and Housekeeping Cottages: A Novel*, published six days before *Harry Potter and the Half Blood Prince* we could find no trace of pirated copies. Moreover insofar as these lesser works are pirated, the marginal contributor is scarcely in a position to take legal action.

The fact is: marginal ideas are not going to get much protection from the law. On the other hand they are huge beneficiaries of the free Internet – and a lot of activity by the "copyright industry" is aimed not so much at protecting "their" content but at making sure that they don't face competition from the little guy. How many lawsuits have been aimed against YouTube videos that incidentally have some brief snatch of copyright music playing on a TV in the background? Why did the

“copyright industry” vociferously oppose bringing orphan works into the public domain? And above all – what does the Internet actually do for the little guy?

A good example of the little guy is in the comic strip industry.⁷ Historically there was no little guy. There were big syndicators that contracted with a few big guys and provided comic strips to most of the big daily newspapers. There was no way for a little guy – maybe someone who might have 20-30,000 potential customers – to get in touch with his audience. That has changed with the Internet. Now a little guy who has a small audience can have a website where his customers can find him. What is the revenue model? Closed access and copyright? That makes no sense – if you are unknown and charge admission nobody will discover you. No, the answer is complementary sales – in this case of t-shirts. The comics are free – and the websites sell custom t-shirts with pictures of the comic strip characters. Apparently the little guy can do pretty well this way:

Rosenberg raves that he has been able to make five times as much off his merchandising as off his subscriptions and that advertising doesn’t come close to generating the revenue he gets off t-shirts, noting a profit margin of up to 50%, which would be as much as \$9 per item in some cases. Stevens quotes \$4-\$5 as his margin. Rosenberg further claims to have tripled his 2003 income by switching to t-shirt sales in the last three months of 2003.⁸

3. Free/Libre/Open Source Software

Years ago I had a discussion of copyright with an economist colleague Andy Postlewaite. Since he’s an economist he’s aware of how the music, movie and book industries operate and agreed that these are insignificant industries where the incentive to produce new works is well provided by complimentary sales. But, he said, what about software? Commercial software – MS Windows, MS Office – are terribly expensive to create and if they aren’t protected by copyright what will be the incentive to produce them? Selling t-shirts isn’t going to cover the cost of building MS Windows.

To which I will say: “I’m glad you asked.” We have another terrific natural experiment the Free/Libre Software movement (FLOSS). Buyers of FLOSS software are entitled to make own copies, modified or not, and sell them – the conditions of the FLOSS market are essentially those of perfect competition. By the conventional story this market shouldn’t exist.

I sometimes casually describe this as a part of the software industry that has voluntarily renounced patent, trade-secrecy and copyright. Including copyright in that sentence gets me in trouble with Richard Stallman, so I better explain that. Strictly speaking FLOSS software uses copyright as a tool against patents and trade-secrecy, so it doesn’t renounce copyright at all. But the key point is that FLOSS software is freely redistributable – for the issue at hand, distribution over the Internet – the use of copyright promotes rather than discourages this distribution. If we eliminated penalties for “piracy” FLOSS software would not be affected in any negative way – and probably in a positive way since abuse of copyright law has sometimes been used to limit the distribution of FLOSS software – for example by attacks on bittorrent which is widely used for distributing FLOSS software.

To digress for a moment, one kind of FLOSS copyright license prohibits the incorporation of the software into non-FLOSS “closed” products. It also requires proper attribution. Without copyright these protections could be lost. But are they important for the FLOSS movement? With respect to attribution, the issue is plagiarism. But copyright is not an important protection against plagiarism. Most plagiarism would in fact not be a copyright violation at all if proper attribution was provided. Yet despite the fact that plagiarism is not against the law the penalties are severe. Protection against plagiarism is provided by private contract and not through laws. For example, were I to plagiarize an article the penalty for me would be severe: not only would I be fired from my job, but I would be

⁷ This discussion is based on Boldrin and Levine [2008].

⁸ Todd Allen [2005].

unemployable as an academic economist. This contractual enforcement is severe and very effective. Plagiarism is not inhibited by copyright law, and copyright law is not needed to prevent plagiarism.

Without copyright it is true that FLOSS software could be incorporated into closed products with improvements not being made available to the creators. This would be unfortunate – but not I think disastrous. While some FLOSS licenses such as the GNU license used by the GNU/Linux operating system require improvements be made available, others such as the Apache license do not – yet the Apache webserver is an extremely successful product. My own experience as a software developer is perhaps instructive as to what this is all about. I originally released software to the public domain, placing no restrictions on users who were free to use it as they saw fit. However I discovered a problem with this: people would send me improvements to the software, and then I had to explicitly get their permission to incorporate the improvements in my own software. So I switched to a GNU license imposing restrictions on users – the important one from my point of view being that if they made improvements they had to release them under the same license – and in particular I am free to make use of them. Without copyright I wouldn't have to bother with this.

To return to the broader issue of FLOSS and Andy's question – how can we pay for big software development without the revenue created by limiting distribution through copyright? FLOSS does exactly this. It isn't a bunch of hobbyists writing little software in their attics. FLOSS is a huge commercial enterprise. FLOSS (not Al Gore) invented the Internet. You use FLOSS every time you do a search on Google. The dominant market share in web servers is the FLOSS Apache webserver. The dominant share in the smart phone market is Android – which uses the FLOSS GNU/Linux as its foundation. And FLOSS is a money making enterprise, not a charity or hobby. Linus Torvalds, the creator of GNU/Linux, is a multi-millionaire. Red Hat, the largest distributor of GNU/Linux is a Fortune 500 firm. Google is...well Google. And the biggest promotor of open source software is IBM.

The basic business model is a simple one, and indeed involves a complementary product, albeit not t-shirts. It is the complementary sale of expertise and services. Simply put, if you have a problem with your software – and who does not? – who would you prefer to call for advice? The person who wrote the software or the person who copied it? Big commercial corporations contribute large amounts of money to the development of FLOSS software. When they need some new feature or a bug fixed – you can bet the developers return their phone calls.

Of course it may be that FLOSS just copies the big commercial software. GNU/Linux is a knock-off of Unix. Openoffice Writer is a knock-off of Microsoft Word. That is true. Of course almost all software, proprietary or not, is an imitation of some other software. Microsoft Windows is a knock-off of Macintosh, which is a knock-off of Smalltalk. Microsoft Word a knock-off of Wordperfect, which is a knock-off of Wordstar. Microsoft Excel a knock-off of Lotus 1-2-3 which is a knock-off of Visicalc. The following story about Bill Gates makes the point:

Their meeting was in Jobs's conference room, where Gates found himself surrounded by ten Apple employees who were eager to watch their boss assail him. Jobs didn't disappoint his troops."You're ripping us off!" he shouted. "I trusted you, and now you're stealing from us!" Gates just sat there coolly, looking Steve in the eye, before hurling back, in his squeaky voice, what became a classic zinger. "Well, Steve, I think there's more than one way of looking at it. I think it's more like we both had this rich neighbor named Xerox and I broke into his house to steal the TV set and found out that you had already stolen it."⁹

Bill Gates and Steve Jobs demonstrate an important point about copyright, "protection" and more broadly about management. You have to have technical knowledge to manage technical people. Gates and Jobs didn't personally write the software that they sell – but they can write software and so understand what can and can't be done. People without that capability are in trouble: John Sculley – the former Pepsi executive and a great marketer – almost destroyed Apple through his absolute lack of

⁹ Quoted in Isaacson [2011].

technical knowledge. Steve Ballmer may be in the process of doing the same at Microsoft. If you don't have technical knowledge you don't know what is feasible and you will be the victim of charlatans. To return to the Sony story from earlier – Sony executives – the kind of people who have secretaries to do their email for them – believed the charlatans who told them that their content could be “protected.” A little technical knowledge and they would have known that this is nonsense. Of course they still think they can shut down “piracy” on the Internet. Recent history is strewn with the ruins of failed software projects commissioned by executive that had no clue about what is possible and not possible. Let us hope that the Internet will not become another.

4. Common Sense and Policing Content on Other People's Computers

The goal of the “big content” industry is simple: every time you listen or watch something they have under copyright you should pay. But how do they keep you from getting a song or movie ripped by someone else from a CD or DVD onto your computer? To do that they have to control the flow of information over the Internet.

Let's apply common sense. Has anyone been successful at controlling the flow of information over the Internet and controlling the contents of *their own* computer? Is it harder to control content that people don't want (viruses) than content they do want (music, movies)? It is not a coincidence that Sony's “DRM” was a virus written the same way as malicious viruses. Simply put – if I can't keep viruses that I don't want off of my computer what are the chances Sony can keep content that I do want off my computer?

Controlling – even unsuccessfully – content is expensive. So the obvious thing is to get the government to do it for you, and that is exactly the aim of the “big content” industry. That isn't so good for the rest of us though. The story of Digital Audio Recording (DAT) is instructive. DAT failed as a new technology. Why? Because the 1992 Audio Home Recording Act mandated something called the “Serial Copy Management System” to limit copying. A recording system that can't make copies is obviously of limited usefulness – and so crippled the technology died. Since then we repeatedly see efforts by the “big content” industry to further cripple the computers and the Internet. The DMCA with all its many faults was passed in 1998. Something called the SSSCA – basically the serial copy management system for all computers was proposed first in 2001, and re-proposed in a new form repeatedly since then. SOPA/PIPA finally died last year – but expect it shortly to emerge phoenix like from the ashes.

The newest technology is always the current battleground. A headline from Infoworld on May 11, 2012: “Facebook file-sharing could be security, piracy nightmare.” The question it raises is how do you monitor shared files while preserving privacy? The short answer is: you don't. If Facebook and Dropbox can examine files for pirated content, then your content is not private. What business is going to trust its proprietary data to a “cloud” where the cloud provider is poking around looking for stuff? If it isn't safe from the provider it isn't safe. It has to be encrypted in such a way that even the provider can't read it – in which case there is no way to determine if it is pirated. Who is going to share files and their life over Facebook if Sony is poking around looking for pirated music? And so forth.

Let's turn to another contemporary event. From <http://arstechnica.com/> on November 29, 2012:

William Weber, a 20-year-old IT administrator in Graz, Austria, said nine officers searched his home on Wednesday after presenting him with a court order charging him with distribution and possible production of child pornography. The crimes carry penalties of as many as 10 years in prison. Police from the Styrian Landeskriminalamt, which has jurisdiction over the Austrian state of Styria, confiscated 20 computers as well as a game console, iPads, external hard drives, USB thumb drives, and other electronics. Evidence cited in the document showed that one of seven Tor Project exit nodes he operated transported illegal images.

What is TOR? TOR = The Onion Routing System. From the TOR website:

Tor is free software and an open network that helps you defend against a form of network surveillance that threatens personal freedom and privacy, confidential business activities and relationships, and state security known as traffic analysis.

TOR is a darknet. It is a system designed to conceal who is using it and what they are sending and receiving. It is widely used for illegal activities including illicit drug sales, tax evasion and the distribution of child pornography. Who are the sponsors of this evil, criminal TOR enterprise? From Wikipedia:

Originally sponsored by the U.S. Naval Research Laboratory, Tor was financially supported by the Electronic Frontier Foundation from 2004 to 2005. Tor software is now developed by the Tor Project, which has been a 501(c)(3) research-education nonprofit organization based in the United States of America since December 2006 and receives a diverse base of financial support; the U.S. State Department, the Broadcasting Board of Governors, and the National Science Foundation are major contributors.

Note that “U.S. State Department” in this case is widely believed to be “C.I.A.”

Certainly the U.S. Government has its faults. It is doubtful, however, that it wants to encourage tax evasion and child pornography. So presumably TOR has other uses. Again from Wikipedia:

anonymizing systems such as Tor are at times used for matters that are, or may be, illegal in some countries. e.g., the selling of controlled substances. Tor may be used to gain access to censored information, to organize political activities, or to circumvent laws against criticism of heads of state. Tor can also be used for anonymous defamation, unauthorized leaks of sensitive information, and copyright infringement, the distribution of illegal sexual content, money laundering, credit card fraud and identity theft.

Somewhere buried in there is “Tor may be used to gain access to censored information, to organize political activities, or to circumvent laws against criticism of heads of state.” And that is why the U.S. – and indeed the U.S. military – is an important sponsor of TOR. Again the U.S. may have many faults, but it is an important force for encouraging political freedom throughout the world. And that is why it sponsors TOR.

Ultimately we have to decide: do we have political freedom and turn a blind eye to child pornography? Or do we have copyright? In one corner we have China, Russia, Syria...and Sony. In the other corner...?

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