The following is a summary and my personal reaction to the three articles posted for this week’s assignment. They are *Unintended Consequences*, *Circumventing Authority*, and *Watch Global, Cache Local*. The first two articles portray different aspects of the same legal drama that has plagued the courts surrounding illegal media piracy on the Internet. The third focuses on research for Youtube videos and local cache in a University network. I choose to focus first on the two more connected articles, comparing their points of view, followed by the Youtube article.

*Unintended Consequences* begins by explaining the DCMA or Digital Millenium Copyright Act as an act that Congress meant to pass to protect against online piracy. However the main argument for the article is that this act does little to prohibit actual piracy and instead is used by countless companies within the motion picture and music industries to suppress legitimate use of media such as DVDs and CDs. According to the article the DMCA has caused four major problems for legitimate use: 1) Chilling of free expression and scientific research 2) Jeopardizing fair use 3) Impeding competition and innovation, and 4) Interfering with computer intrusion laws.

The author argues that Congress passed this act with the intention of banning harmful circumvention of media, thus protecting the copyright owners from losing significant profit. Yet several examples, including that of Dmitry Sklyarov who was jailed for publishing the Adobe e-book processor, show how this act has prevented beneficial scientific research because software developers become endangered. Companies have been able to win court cases on the grounds that other people may illegally copy or distribute media by using the software these researchers have developed. Because the researchers have developed the tools to complete these acts, they are subjected to legal action. Fair use is also inhibited by DMCA, for example due to the CSS encryption people who legally purchase a DVD cannot transfer the information to their laptops. This is one of many examples where fair use of a product is disallowed such as Load N’ Go or E-book processors. If legal action is being taken on these software developers, they have less incentive to create, and even contractors have been prosecuted for merely connecting to a network via VPN.
Personally, after reading the article I heartily agreed with the inability of the DMCA to put any sort of control on piracy. A few examples caused slight offense, as I was not aware that I am unauthorized to copy a DVD or to unlock my cell phone. I found this new information to be both technically and ethically concerning, as I feel as though these privileges should be allowed to legitimate purchasers. With very little background in the legislation surrounding this issue, I felt convinced by this author that the DMCA should be at least seriously revised to prevent such restrictions. However, I can’t figure out how this would be possible. People will no doubt continuously hack software protection, and if the companies don’t come down upon the hackers themselves, who do they attack in order to protect their business? The second article seemed to better address what amendments could be put in place to better use this law for its original purpose.

*Circumventing Authority* focuses on the flaws and loopholes associated with the DMCA and how future cases could possibly be changed due to the wording of the law itself. The article also explained how the copyright industry is one of the largest economic assets our country has, which added some weight to the argument that this law should have better wording and attention. The portion of the law in focus is Section 1201, of which there are two parts: A and B, each with a substantial loophole. Examples such as CSS are used to show the “improper” use of this law according to its specific wording. Section A of 1201 involves any effort to “descramble a scrambled work, ….without the authority of the copyright owner”. This does not account for the unauthorized use of a legitimate password; if a person were to determine or somehow obtain the password to an encryption then its use is not specifically prohibited. However, use of this password to do much of anything is technically circumvention. But this is one loophole in this law. The second loophole surrounds Section B, which states that “effective control” of access to a work means that BOTH information must be applied and that the user must have the authority of the copyright owner. Since, for example, DVD players when decrypted do not then go and check with the copyright owners if this key was granted or not, obtaining the necessary authority is often next to impossible. This large loophole could, according to the article, be used in future cases to prevent what I have now come to believe as unfair prosecution of software researchers and inventors.
The end of this article calls for Congress to amend these Sections A and B so that these loopholes can be closed. My reaction to this notion is that closing the loopholes would provide these companies with even more ammunition with which to take down inventors of software. In my opinion, after reading these articles, more amendment than closing these two loopholes is necessary for the original intention of Congress to prevent piracy to be carried out. Obviously, as a pirate myself I would not want the law to be changed in favor of these media companies because of personal benefit. So either these loopholes should remain open and their use be more widespread to prevent unfair prosecution, or the law should be revoked and replaced with another, which enables fair use as well as research.

The third article talks about the efficiency of Youtube videos and possible solutions for how users could load videos quicker. An introduction explains the use of Youtube and how advertising for this site is done differently to television, passed by word of mouth or by Internet blogs, for example. It allows the sharing of videos over the internet, which makes it difficult for Youtube to do anything other than directly pass information to each user, a relatively inefficient way of data transfer, according to the author. An experiment was conducted on Amherst’s campus to see whether three different solutions could improve the uploading speed of these videos. The first idea, a local cache, provides space in the user’s computer where a video is stored for a certain amount of time. Should the user choose to watch the video multiple times, which was shown to be a common occurrence, it would be already pre-loaded into this cache and readily available. This seemed to be a positive mechanism. The second idea was Peer-to-Peer caching, so the client would check when a video was requested whether that video was stored on any other client’s cache, and if so it could be uploaded directly between the two clients. This was showed to only marginally improve the performance at best, even to perform worse. The client with the video in his/her cache must be online and must remain online in order for this to work. Instead the third idea, proxy caching, seemed to be the best option. The video, after being requested once, is stored on the proxy to the network. If a second request is given, the proxy can then upload to the client from its own public cache. This method seemed to be the most effective and low-cost.
My reaction to this reading was very positive – why not explore these solutions on our own campus? It is ethically sound, there is no copyright infringement on any videos, and the only effect is improvement on upload speed. My only concern would be about the amount of content that could be stored on the cache, knowing how many of my peers visit Youtube and how many videos our campus must upload daily. This number may be incredibly large, so what kind of storage might we require in order to facilitate this process? There is also the question of whether the school might then monitor the content of the videos themselves. Having attended a boarding school where Youtube was banned, I realize the concern that academic administrations can have with the videos their students are watching. If we were to store our videos on a public server, could the administration then access these and possibly ban Youtube altogether? Likely not, but it would be something to worry about.

Overall, these three articles were enlightening and I learned a lot about the fine line of ethical considerations involving the Internet.