



Internet and the Other IP

Vinton G. Cerf

I“P” is an ambiguous acronym. Internet Protocol. Information processing. Independent party. Induced polarization. But it is intellectual property that claims my attention in this column. My particular focus for the moment is on copyright and copyright protection. Anyone with some understanding of the World Wide Web appreciates that browsers work by copying and interpreting content from server sites on the Internet. Creators of copyrightable works might be understandably concerned about the ease with which digital content can be replicated and distributed online

Historically, copyright protection has been synonymous with preventing or detecting and prosecuting copyright violations. The references to copyrights in the US Constitution provided for a limited exclusive right of a work’s author or creator to control its reproduction. The bargain struck in the constitutional language balanced the general public’s interest in gaining access to works entered into the public domain on expiration of the exclusive copyright with the creators’ interest in controlling and possibly receiving pecuniary benefit from their work’s reproduction. It seems to me that the repeated extension of the copyright period has favored protection over the interests of the general public, and that this imbalance should be addressed.

Rights of various kinds have been invented in association with works as technology has evolved. “Performance rights” evolved in tandem with the ability to capture and reproduce sound and imagery in various forms. Digital works don’t always exhibit the same properties or manifest the same rights as their nondigital counterparts. For example, the “first-sale doctrine” holds that a conventional book printed on paper can be resold by both the original purchaser and subsequent buyers. The purchaser

can loan, resell, and destroy purchased works. Fair-use doctrine allows limited copying without the author’s permission if the use is for pedagogical or critical purposes. Libraries can loan out books or other media after acquiring them (often at “library rates” higher than those individuals pay for the same works). In digital form, it might not be possible to loan a book to a friend for proprietary format reasons or even because “digital rights management” mechanisms inhibit such sharing. Reselling might also be out of the question because the work literally is not transferable from one digital rendering system to another.

Numerous efforts have arisen to better automate the detection of deliberate and even accidental copyright violations. At YouTube, a good deal of effort has gone into registering audio and video segments and developing matching algorithms to detect possible violations as video and audio material is uploaded. I had a recent experience with this system when I uploaded a video taken during an event in London where local students could meet some of the winners of the first Queen Elizabeth Prize for Engineering. During the event, one of the invited speakers used a clip taken from the July 2013 Olympics to illustrate a principle of physics. Within moments of uploading the video, I received an email from the YouTube system telling me that it had detected a violation of the copyrights of the International Olympic Committee. The video was taken down until the IOC resolved the matter by accepting that the copyright clip was being used legitimately for pedagogical purposes.

There are many examples of such diligent processing in the audio, video, and text domains. What might be missing, however, is a process for registering copyright claims and transfers,

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in the same way that real property transfers are recorded. If such practices were in place, we can imagine that it would become an easier matter to establish the ownership of various rights in creative works. Ironically, in the US, it was once required by the US Library of Congress Copyright Office that authors provide it with two fair copies of any work for which they claimed copyrights. This practice eventually became optional as practices were adopted that imbued the creator of a work with copyrights without the need to register. It might

well be time to revisit this practice and institute one in which all new registrations and transfers of rights are recorded in the same way as are real property transactions. This would certainly appear to simplify the task of determining the holders of various intellectual property rights, especially as they transfer from one party to another or are split up in various ways.

right material must evolve to deal realistically with the properties of digital communication while balancing the interests of content creators, copyright holders, and the general public. □

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It seems inescapable that new business models dealing with copy-

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