Testimony of

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I appreciate the opportunity to discuss the IT industry's work to create effective tools to protect copyrighted digital content. In sum, my message is this: we care about piracy, we are providing solutions to solvable problems, and those solutions come best through a voluntary, consensual process - not regulatory mandates.

IT is working to protect content and reduce piracy

Some in the content community have suggested that the IT industry does not care about reducing piracy of copyrighted works, that we actually promote piracy to grow our industry. Nothing could be further from the truth. We place the highest value on protecting intellectual property, and have worked in countless forums over decades to support and defend IP rights. We know that without adequate protection, content owners will not make their content available over digital networks. Piracy for the high-tech industry means losses of about 12 billion dollars a year; for the content owners, it is about 3.5 billion a year. It is a plague for all of us. That is why our industry has spent hundreds of millions of dollars of our own money, and has devoted the time of hundreds of engineers, to developing solutions.

Good progress has been made

This work - carried out in close cooperation with Hollywood studios and consumer electronics companies - has now extended over six years. It has resulted in new technologies for the protection of content made available through DVD's, pre-recorded audio media, and "secure network" systems such as cable and satellite. We are moving forward with specifications for protecting over-the-air digital television broadcasts, which we expect to be finalized around the end of this month. These new tools, when used properly, protect content "at the source" -- when it is created -- and prevent piracy in any environment, including the Internet. Content is simply not passed on to devices that don't honor the rules. These technologies are available and in use today to protect content delivered to home networks.

In addition, we are now jointly studying watermark technologies that may help with the so-called "analog hole", which can be generally understood as analog outputs on consumer electronic devices. Content ported through these outputs could be reconverted to unprotected digital format. Watermarks may provide a means to ensure that protection rules survive as content transitions to analog outputs.

I want to emphasize that, during these six years of work, there has not been a single protection issue put forward by the content community that we have not responded to with solutions. And those solutions are successful: many of our partners in this work - such as AOL Time/Warner,

who I am pleased to appear with today - are moving forward to take advantage of these new protection technologies to bring protected digital products to market.

AOL-Time/Warner and Intel are in agreement that where there are identifiable, effective solutions to specific problems that would require limited government action to implement - as in the case of digital television broadcasting - then limited directives have a useful and productive role to play. As Dick has stated, we are developing a joint statement of principles on these points. But consensus here is the key.

Peer to peer: IT cannot police the Internet

As I have said, the solutions we have developed thus far work when the content is protected from the source. However, when we look at the explosive growth of peer-to-peer networks, combined with the ready availability of unprotected content, we are faced with a wholly different problem. Completely stopping the piracy of unprotected content - whether it consists of older creative works that have already been uploaded to computers, movies recorded off a theater screen with a camcorder, or copies of new films stolen from studios by employees - is beyond the reach of what known technologies can do. No single solution - technical, legal, legislative, or business - exists to fully address this form of piracy.

Some content providers suggest that all digital devices could continuously examine all data downloaded from the Internet and analyze it to sort out copyrighted from un-copyrighted material. We don't think this would work. First, once unprotected content is digitized, absent a watermark that can carry embedded usage rules (which must be attached to the source file), your home movies look no different to a computer than a Hollywood film would. Thus, this approach would require either forbidding access to unprotected content by the PC - including home movies - unless you submit your home movies for review and certification; or, it would require the creation of an online database of copyrighted works against which suspect content could be compared. This would be analogous to the creation of a worldwide fingerprint database, only orders of magnitude more difficult.

Beyond these considerations, there are serious consumer privacy concerns about any technology that would "look" at everything you send or receive over the Internet or require review and approval for home movies and other personal content. Our company suffered a substantial consumer backlash from a much more benign technology, the processor serial number, because of the possibility of consumers being tracked through that identifier. Here we are talking about actually screening transmitted content without consent, which in other contexts we would consider a gross invasion of privacy.

I mention these difficulties not as a justification for piracy, but simply to illustrate the complexity of the problem. Solving it will require hard work from all relevant industry sectors.

Broad government mandates are not a solution

Nevertheless, there are content providers who urge upon us a pervasive system of government regulation to implement these ideas, and advocate the development of an "open", mandatory

standard that would implement this Internet surveillance. It is suggested that this surveillance could be accomplished with an "eighty cent chip".

This is pie-in-the-sky, back-of-the-envelope cost estimating that has no relation to the realities of our industry. There are at least three fundamental issues, which are ignored in this scenario.

First, as I have said, there is no known technical solution to the peer-to-peer piracy of unprotected content, and thus direct costs of any future solutions cannot be estimated.

Second, broad regulatory mandates would place all of the monetary, product performance costs, and loss of consumer goodwill on the shoulders of the IT industry. In the end, regulatory mandates for an unspecified technology of unknown cost amounts to a compulsory license imposed upon the IT industry.

Third, and most important, there are the hidden costs of slower innovation, diversion of investment capital, and lost ground in the global race for technological leadership that would follow from the insertion of a bureaucratic process into our product design work. These are costs that we cannot afford to pay.

The DMCA: balancing copyrights, innovation, and consumer expectations

In short, our message is that the marketplace has largely worked, in precisely the manner envisioned by the DMCA. The DMCA generally rejected mandates in favor of consensual standards. It also granted powerful new enforcement tools to content owners to give strength to the technical solutions arrived at in inter-industry efforts. Having been given this direction by Congress, we in the IT industry have come through with effective content protection tools that are available today, at reasonable cost - certainly for new digital media products.

In all of this, however, we cannot lose sight of the consumer. Pursuit of maximum control is not the highest value; there are other values at stake, most importantly consumers' expectations for lawfully using both technology and content for personal use. The challenge is to permit the consumer flexibility and portability in his or her home and personal environment, yet prevent unlawful reproduction and redistribution. Balance is the key, but finding that balance can at times be difficult. Consider these examples:

· "Cul-de-sac" technologies that do not allow content to be played on different digital devices. I have here an example of that: the "SACD", which is not playable in a PC. This is designed to thwart the customer's ability to make playlists of individual songs or download the songs to a portable player in a protected environment, and it amounts to a limitation on the right to make audio copies, which is recognized in the law.

· The accommodation of legitimate fair use of content. One good example of this problem, which this Committee has grappled with, is fair use of content in the distance-learning environment.

Congress needs to give careful consideration to the question of how consumer expectations for using technology and content, which developed in an analog era, will be preserved in the digital age.