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REDUCING PEER-TO-PEER (P2P) PIRACY ON UNIVERSITY CAMPUSES: A PROGRESS UPDATE

HEARING

BEFORE THE

SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

OF THE

COMMITTEE ON THE JUDICIARY HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

SEPTEMBER 22, 2005

Serial No. 109–56

Printed for the use of the Committee on the Judiciary



Available via the World Wide Web: http://judiciary.house.gov

U.S. GOVERNMENT PRINTING OFFICE

23–572 PDF WASHINGTON : 2005

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REDUCING PEER-TO-PEER (P2P) PIRACY ON UNIVERSITY CAMPUSES: A PROGRESS UPDATE

THURSDAY, SEPTEMBER 22, 2005

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COURTS, THE INTERNET,
AND INTELLECTUAL PROPERTY,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The Subcommittee met, pursuant to notice, at 9:15 a.m., in Room 2141, Rayburn House Office Building, the Honorable Lamar Smith (Chair of the Subcommittee) presiding.

Mr. SMITH. The Subcommittee on Courts, the Internet, and Intellectual Property will come to order.

I have to tell you, I do think several Members are on the way, but apparently this is an early hour for a number of them. In point of fact, we originally were going to meet at ten o'clock and, because of conflicts with other Subcommittees, we needed to move up our hearing time. I can only say that I am grateful that the witnesses are all here and that there is still a large audience who are interested in the subject at hand.

We are going to proceed, incidentally, with the agreement of the Ranking Member, Mr. Berman, who is on the way but will be delayed a few more minutes. I am going to recognize myself for an opening statement, and then we'll move on and begin to hear from the witnesses.

Today the Subcommittee will receive an update on the progress that has and has not been made in combatting peer-to-peer piracy on university campuses. First, let me note that there have already been several significant actions that have occurred off of the university campuses. Only a few months ago, the Supreme Court clearly delineated the lability of P2P software providers. Until this decision was released, certain P2P providers had consistently disclaimed any liability for the piracy that their software enabled. Now many of these services are trying to become distributors of legal sources of content. However, universities are aware P2P piracy flourishes, and I am pleased to see progress on many campuses in combatting such piracy.

Copyright issues are no longer an afterthought at many universities. During the last academic year, several universities offered legal services to lure students away from illegal downloading and file sharing. Other institutions offered serious education programs or better enforcement of their copyright policies.

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Coming from high school environments where copyright issues are usually ignored, or simply unknown to parents and teachers, college students are ready to use the high-speed Internet connections as a source of free content. While college students often test boundaries, campuses should not be places where illegal activity becomes a routine of a student's life that will only continue after their graduation.

Universities have recognized their part, and their educational mission is not only centered on turning out architects, lawyers, nurses, musicians, and economists. Their mission also includes graduating well-rounded individuals who respect others as well as the laws of the country.

Several years ago, it was obvious that respect for the nation's copyright laws was not a high priority of many university students or their universities. To address this issue, a joint university content owners group was created in 2003. Co-chaired by Graham Spanier at Penn State and Cary Sherman of RIAA, this working group has met regularly to bring together groups that have rarely interacted before. This working group has provided the Subcommittee with an update of its activities in its written submission today.

The Subcommittee will hear today from two universities, including one from my own district. Both universities have undertaken several efforts related to student education, ranging from copyright information provided on orientation day to automated systems that warn students of conduct not permitted under university guidelines.

We will also hear from one provider of legal content to universities, and the experiences that they have had. Finally, we have a representative of a content trade association, who can speak to the increasing use of high-speed university networks to transfer large video files. This is a good time to understand why some universities have clearly stepped up to the plate of educating their students, while others simply have not.

The Subcommittee will continue to hold hearings on P2P piracy to monitor progress and to update Congress on what still needs to be done.

I mentioned in my opening remarks a minute ago the Joint Committee of the Higher Education and Entertainment Communities that had been meeting since 2003. One of the co-chairmen of that group is Cary Sherman, who happens to be in the audience today. Glad to see you. And since you're here, I want you to note that we're going to, without objection, be putting in the record your most recent report that we saw yesterday.

[The information referred to follows:]

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REPORT FROM THE JOINT COMMITTEE OF THE HIGHER EDUCATION AND ENTERTAINMENT COMMUNITIES SUBMITTED BY THE THE HONORABLE LAMAR SMITH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS, AND CHAIRMAN, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

A Report to the Subcommittee on Courts, the Internet, and Intellectual Property
House Judiciary Committee
By the Joint Committee of the Higher Education and Entertainment Communities
On Progress during the Past Academic Year
Addressing Illegal File Sharing on College Campuses
September 21, 2005

In October 2004, the Subcommittee on Courts, the Internet, and Intellectual Property held its second hearing on "Peer-to-Peer (P2P) Piracy on University Campuses." Much has happened since then and, in anticipation of the Subcommittee's next hearing this month, we offer this follow-up report highlighting the events over the past year.

Undoubtedly, we have reached a turning point on the issue of illegal P2P file-sharing. This June, the Supreme Court handed down its decision in the *MGM vs. Grokster* case, finding that P2P companies (and others) who encourage or induce infringement on file-sharing systems can be held liable themselves. The unanimous Court decision brought further attention to an already important topic for schools across the country. Last month, these schools received a letter from the Joint Committee, reminding administrators of their responsibility to appropriately address this issue and offering assistance in their aim to reach students. In addition, in light of the holding in *Grokster*, the Joint Committee will offer an update to its 2003 white paper on student P2P liability. Hundreds of news sources have reported on the Supreme Court's final word on illegal file-sharing. School papers as well have already begun talking about the implications of this decision, and the discussion (and response) will undoubtedly continue into the new school year.

In November 2004, Joint Committee Co-Chair Graham Spanier sent a letter to 90 university presidents, asking them to report on how they deal with illegal file-sharing on their campus. Information from those who submitted reports, coupled with news pieces and personal discussions with those in the academic community, have offered great insight into the different ways in which schools have addressed this problem. The main topics that have been discussed, including legitimate services on campus, education, enforcement, and adoption of technological measures, appear below.

Legitimate Online Services

Last year's report reflected the exciting emergence of legitimate services on college and university campuses. Services such as Napster, Cdigix, MusicRebellion, Ruckus, Real Networks' Rhapsody, and Apple's iTunes gave schools the opportunity to offer their students the music and movies they desired in a fun, convenient, economical, and legally responsible way. The success of these pilot programs is reflected in the remarkable rate of adoption by other schools. Since last year's report, the number of schools with legitimate services on campus has more than tripled to nearly 70. As a result, more than 670,000 students now have access to a legitimate music service through their university. And the number is growing rapidly. The University of California and California State systems have announced agreements to allow individual schools in the network to sign up

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with a service, potentially adding hundreds of thousands of additional students to the legitimate downloading movement. *Please see attached map of colleges and universities offering legitimate services.*

Of course, the level at which students use these legitimate services on campus varies from school to school, often depending upon the accompanying means by which administrators address the piracy issue. We have discovered that the adoption rate of such services has been best at schools that first successfully reduce the availability of illegal file-sharing on the network. This reduction is best accomplished through the use of filtering products, bandwidth controls, and other network technologies.

Filtering and other Technology Measures

Many schools continue to use bandwidth shaping technologies, such as Packeteer, that limit the amount of bandwidth students can use per week (or the times at which they can use it). Those who exceed this limit are warned and their network access is subject to being significantly reduced in speed or ultimately discontinued. While a positive step, these applications are often used in such a way as to make them ineffectual. By reducing bandwidth availability only at certain times, schools may incidentally give students the impression that infringement is acceptable at prescribed interludes. Students adapt to time constraints and never receive the message that this activity is illegal and simply wrong. Further, the relative small size of music and other content files enables the illegal trading of hundreds or thousands of such works even under moderately aggressive bandwidth shaping efforts.

More and more schools are turning to products that target specific illegal activities on their system. The University of Florida's Icarus application, which prohibits certain protocols that facilitate infringement, is being marketed for use at other schools under the company name Red Lambda. Under the program, there has been a 50 percent decrease in offenders year over year, and UF has received no DMCA infringement notices. As the new year progresses, Icarus and similar products will allow more schools to consider the prevention of illegal file-sharing at its source: illicit P2P applications.

Audible Magic's CopySense weeds out infringing transmissions on P2P networks by using fingerprinting technology to match transmitted content against a master database of protected works. The product has been employed at more than 30 universities and has significantly reduced the number of infringement notices received by these administrations.

By first implementing these technologies, and by later complementing them with a legitimate online service, schools will continue to have the best success in reducing illegal file-sharing on their systems.

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Education

Education, of course, remains a significantly important element in our efforts to curtail abuse on P2P networks. Conversations about file-sharing, ubiquitous on campus, have been brought into classrooms as schools update their curriculum to reflect the relevance of this subject. This is no longer an esoteric topic limited to intellectual property discussions in law school classes. Undergraduates, with their laptop computers, portable music devices, and growing opportunities to acquire music online, are increasingly interested in copyright and the implications of infringement. Administrations have become progressively more vigilant, communicating more with the academic community through letters and emails to inform students, faculty, and staff of the seriousness of copyright infringement. It has now become standard for orientation programs to include material on copyright and the proper use of school resources. Presentations and seminars throughout the year are reinforced by posters, flyers, videos, and other educational campaigns to keep students engaged.

However, many schools could do a better job to ensure that the message is being received. While acceptable use policies have been updated, they are too often hidden or not easily accessible to students and others. School websites should clearly link to these policies without requiring the user to drill down or make leaps of logic to find the relevant section. It may be beneficial for schools to periodically engage in surveys to ensure their efforts to educate students on these matters are effective.

This past June, the Association of Governing Boards of Universities and Colleges sent members its "Ten Public Policy Issues for Higher Education in 2005 and 2006." Included in this paper was a discussion of intellectual property on campus, encouraging colleges and universities to "comply with copyright law." As the Association wrote, "Promotion and compliance is a matter of self-interest—to preserve their credibility in protecting their own intellectual property. And it is a matter of principle—to promote respect for copyright law and intellectual property as part of the educational mission."

Certainly, a look at many school papers across the country shows the increased attention to this matter. Articles and op-eds appear, not only from members of the music community seeking to reach out and inform students, but also from current students and school administrators. Many national papers have also given voice to those in the industry. Op-eds by Joint Committee Co-Chairs Graham Spanier and Cary Sherman have appeared in the Philadelphia Inquirer and the Boston Globe, respectively. School administrations undoubtedly can become more involved in engaging students, providing additional and more frequently offered forums in which students can discuss and learn about these issues.

Enforcement

In March 2004, the RIAA began including university students in its rounds of lawsuits against online infringers. This past year saw the continuation of that program, with a total of 880 students at 134 schools sued to date. Online piracy has not been reserved for

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music, however, and the Motion Picture Association of America (MPAA) in November of 2004 began suing individuals illegally distributing copyrighted movies. While lawsuits are still considered a last resort in the ongoing effort to curb infringement, the resulting publicity has nonetheless brought national attention and understanding to the issue, and enabled legitimate online services to take root.

This past April and May, the RIAA and MPAA turned their attention to Internet2, an advanced network created by participating institutions of higher education and partially supported by government funding. This exceptional resource, created for academic and research purposes, unfortunately fell victim to an onslaught of illegal file-sharing activity. P2P applications such as i2hub, which have been optimized for the incredibly fast Internet2, have enabled users to download songs in seconds and entire movies in minutes. The closed academic-based network led many students to believe falsely that they could engage in infringing conduct with impunity. Lawsuits against those on the i2hub system ended that myth. Letters were sent to school administrators, either as a courtesy "heads-up" communication to notify them of forthcoming subpoenas, or as simple warnings that such activity was taking place on their campus. Two rounds of i2hub litigation by the recording industry resulted in almost 500 lawsuits filed against users on 38 different campuses. The response was immediate. In addition to a flurry of news reports, op-eds, and internal school notices highlighting the issue, the number of users on i2hub decreased significantly (and some legitimate online services reported a corresponding increase in sign-ups). The RIAA and MPAA have now joined as members of Internet2 and look forward to collaborating with this diverse community.

Many schools have stepped up enforcement, realizing that violation of the school's own policies can have serious consequences. Ensuring adherence to these rules not only safeguards the security and integrity of the school's computing systems, but also enables students to stay within the law and acquire a lasting respect for copyright and the works it protects. As with acceptable use policies, however, schools should work toward providing students with easy access to, and a clear understanding of, the penalties and disciplinary proceedings following claims of infringement.

Emerging Challenges

Colleges and universities that received the April and May Internet2 letters were also informed that many students have set up file-sharing systems on the schools' Local Area Network ("LAN"), facilitating the illegal copying and distribution of copyrighted works without connecting to the larger public Internet. As with i2hub on Internet2, these students often believe that these closed networks grant them immunity. Nevertheless, these hubs of piracy are frequently brought to copyright owners' attention, and school administrators should become more vigilant in stemming this abuse of their network services.

Many schools are also facing the increased use of myTunes and ourTunes, unauthorized hacks of iTunes, Apple's legitimate online music download service. These applications enable students in college dorms to illegally trade thousands of copyrighted songs stored

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on the user's iTunes application and further impede the successful adoption of a legitimate download service by a school community.

Finally, many schools unfortunately have yielded to complacency in their methods of addressing piracy on campus. Illegal file-sharing and other forms of online infringement are evolving rapidly; schools must remain vigilant and adapt their anti-piracy programs accordingly. For example, while a positive step, the mere implementation of a legitimate online service without regard to its successful adoption by students would clearly be ineffective. (Again, first implementing a filter or other network technology significantly raises the likelihood of successful adoption by students.) Alerting students to policies and requirements serves only limited purpose when administrators fail to remain vigilant and effectively – and consistently – punish violators. Education and enforcement programs may waste considerable efforts if they fail to convey strongly and repeatedly the seriousness with which the school takes copyright infringement. The goal, of course, is not to accumulate haphazardly-implemented solutions, but to successfully reduce piracy on campus through an effective combination of proven and appropriate measures.

Conclusion

The Joint Committee has been instrumental in the progress being made on this issue at colleges and universities across the country. On November 13th, the Joint Committee will hold its final conference, which will be attended by university presidents, provosts, general counsels, and other administrators. We look forward to the participation of so many parties interested in the future of legitimate content on campus and in ensuring students' continued respect for copyrighted works. The response by both the education and entertainment communities this past year to the issue of illegal file-sharing has been overwhelming and the coming years, while challenging, hold even more promise. The Joint Committee is proud to have helped initiate this process and we thank the Subcommittee for its ongoing support.

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Mr. SMITH. And also, maybe just as a part of my opening statement, let me read a couple of the conclusions from that report, as well:

"This joint committee today issued an update to Congress outlining the latest efforts to address illegal file sharing on campuses and the emerging challenges ahead."

According to the report, and this is the good news:

"The number of schools with legitimate services on campus has more than tripled, to nearly 70 in the last year."

Now, that's the good news. The other news is that, according to the report, student-run file-sharing systems on schools' local area networks, as well as the increased use of unauthorized hacks of the legitimate online services, iTunes, are emerging as significant problems. So obviously, there's much work to be done, but we are making progress.

That concludes my opening statement, and the gentleman from California, Mr. Berman, is recognized for his.

Mr. BERMAN. Well, thank you very much, Mr. Chairman, and I'm sorry I was late. But I personally appreciate you scheduling this hearing on campus-university peer-to-peer piracy.

I think there's no question of the devastating impact piracy has had on the entertainment industry: a serious decline in total value at the retail level. In March 2005 alone, 243 million songs were downloaded from illicit peer-to-peer services. It's estimated that approximately 400,000 films are illegally downloaded every day.

But when it comes to downloading content that is not paid for, there seems to be a disconnect between—there's a disconnect that students exhibit between intellectual knowledge and actual behavior.

There was a very telling discussion that occurred during a program about P2P file sharing organized by my colleagues, Adam Schiff and Linda Sánchez, and me, for students from different colleges who are interning on the Hill. The students all acknowledged that downloading content from P2P networks was possibly morally wrong, probably legally wrong, and potentially harmful to their own networks from spyware or adware; yet many of them continue to use P2P file-sharing as a means of obtaining music, movies, television shows, and games.

At this hearing last year, Gordon Spanier—Graham Spanier—one of the chairs of the joint committee, and a man who's really a visionary in undertaking the lion's share project at Penn State, testified, "I don't think there is any one part of the solution. It has to be a set of variables that universities use to bring about progress in this area."

Awareness of the effects and solutions to the piracy problem can be addressed through education, enforcement, technological improvements, and affordable legitimate alternatives. The good news, in no particular order, is that there has been progress on every front. The Supreme Court's decision in Grokster set a clear message that companies that encourage theft can be held liable. Immediately after the decision, iMesh, one of the original peer-to-peer services, announced the transition from a free to commercial-based, authorized P2P business model, which ensures competition to creators—compensation to creators. Others began to follow suit. As

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late as this week, Grokster itself is rumored to be attempting to turn legit.

Since the Grokster decision, there have been other positive impacts on campuses around the country. The University of California and Cal State University, two institutions I know well, announced a deal with Cdigix which provides administrators at all 13 UC and 23 Cal State campuses the option of offering online music and movie sales to students.

Of course, providing students with legitimate alternatives to the KaZaAs and the Groksters is a key part of any solution to the piracy problem. But as the report released yesterday by the Joint Committee on Higher Education and Entertainment Communities indicates—the report that the Chairman referred to at the end of his opening statement—we have a long way to go.

Free is still an option; and while the Grokster decision may have stemmed the wave of piracy, many continue to ride that wave and persist in illegally downloading music, movies, and software. Again, as the report mentioned, we have to confront the piracy which takes place on the schools' local area networks and the increased use of unauthorized hacks of legitimate online services.

Just this Monday, the movie industry announced a concerted effort dedicated to mitigating the effects of piracy. The goal of the new non-profit research and development company, Motion Picture Laboratories Inc.—"MovieLabs" it's known as—will be to create new technologies to protect the distribution of films and other works, as well as to protect against electronic theft, particularly on the Internet.

Just last week, RIAA and MPAA joined Internet2, something we had been concerned about. They joined as corporate members, with the objective of working together on new technologies for secure digital distribution.

It is the combination of the many methods, and not just one silver bullet, that will address the campus peer-to-peer issue. Perhaps, as more simply put by Aristotle—that's what good staff is for—"In educating the young, we use pleasure and pain as rudders to steer their course." I could give you the exact cite, if you'd like. [Laughter.]

The universities and content providers must educate well; as it is this future generation which will educate the next. I look forward to hearing from the witnesses. Thank you, Mr. Chairman.

Mr. SMITH. Thank you, Mr. Berman. I liked your quote by Aristotle. I don't think you've ever quoted him before.

Mr. BERMAN. I have. I have on many occasions, but not in this Subcommittee. [Laughter.]

Mr. SMITH. Okay. I won't ask you for the reference for the quote, either. But, appreciate your comments.

Before I introduce our witnesses, would you all stand and be sworn in, please.

[Witnesses sworn.]

Mr. SMITH. Our first witness is Daniel Updegrove, Vice President for Information Technology at the University of Texas at Austin, where he is responsible for the university's information technology. He is also an adjunct faculty member at the UT School of Information.

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Mr. Updegrove is a member of the Network Planning and Policy Advisory Council of Internet2, and is on the Board of the World Congress on Information Technology for 2006. Mr. Updegrove previously held positions at Yale University; the University of Pennsylvania; Educom; the National Bureau of Economic Research; and Cornell University, where he did his undergraduate and graduate studies.

Our second witness is Richard Taylor, Senior Vice President, External Affairs and Education, at the Motion Picture Association of America. Mr. Taylor joined MPAA in 1995. In his current position, he is responsible for forging partnerships and strategic alliances on behalf of MPAA, as well as increasing outreach to students, teachers, and administrators. Mr. Taylor graduated from Brown University in 1986, with a bachelor of arts degree in history. He has also studied public policy at American University.

Our third witness is Norbert Dunkel, Director of Housing and Residence and Education at the University of Florida. His primary responsibilities include serving as chief housing officer for 9,000 students and their families. Mr. Dunkel serves on the executive board of the Association of College and University Housing Officers International. He has also authored or edited eight books and monographs and over 40 other publications on various aspects of campus housing.

In 2003, his network services staff developed the groundbreaking software platform "Icarus," which has transformed the University of Florida housing network through education and mitigation of peer-to-peer file sharing.

Our final witness is William Raduchel, Chairman and Chief Executive Officer of Ruckus Network, a digital entertainment service for universities. Before joining Ruckus Network, Mr. Raduchel served as executive vice president and chief technology officer at AOL/Time Warner, and as chief strategy officer for Sun Microsystems. Named CTO of the Year in 2001 by InfoWorld Magazine, Mr. Raduchel has been a professor of economics at Harvard University, and holds several issued and pending patents. After attending Michigan Technological University, Mr. Raduchel received his undergraduate degree in economics from Michigan State University, and earned his AM and PhD degrees in economics at Harvard University.

Without objection, your entire opening statements will be made a part of the record, but please limit your oral testimony today to 5 minutes. And I thank you all, and Mr. Updegrove, we'll begin with you.

TESTIMONY OF DANIEL A. UPDEGROVE, VICE PRESIDENT FOR INFORMATION TECHNOLOGY, UNIVERSITY OF TEXAS AT AUSTIN

Mr. UPDEGROVE. Good morning, Chairman Smith, Ranking Democratic Member Berman, and Members of the Subcommittee. Thank you for this opportunity to discuss the University of Texas at Austin's approach to reducing peer-to-peer piracy on our data network.

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Let me begin by stating that the university is dedicated to developing leaders who exhibit responsible and ethical civic behavior, whether in the real or virtual world.

Founded in 1883, UT Austin is the flagship of the 15-campus University of Texas system. Of 50,000 enrolled students, 6,500 reside in campus housing, and approximately 95 percent own computers. Already one of the largest U.S. campuses, our ranks increased when we welcomed 425 students and 20 faculty members displaced by Hurricane Katrina. I can't predict what our enrollment will be next week.

The campus data network, UTnet, links to the commodity Internet, Internet2 Abilene Network, NSF TeraGrid, Texas Lonestar Education And Research Network, and National LambdaRail. UTnet serves 55,000 computers on campus, and 1,300 wireless access points.

Management of information and technology resources is based upon four principles: respect for intellectual property, including its fair use in the academic setting; respect for privacy and academic freedom of students, faculty, and staff; compliance with law and UT regents rules; and stewardship of our financial resources.

Quoting from our policy:

"It is a violation of university policy and Federal law to participate in copyright infringement. Copyrighted materials include, but are not limited to, computer software, audio and video recordings, photographs, and written material. Violators are subject to university discipline, including suspension, as well as legal liability, even if the work did not contain a written copyright notice. It is a violation to use your computer to copy, display, or distribute copyrighted materials such as software, MP3 files, or MPEG files illegally."

This policy is supported by extensive information programs, a network bandwidth monitoring system, compliance with the Digital Millennium Copyright Act, and campus-wide licensing of security-related and other software.

Our staff conducts a mandatory orientation for freshmen before they can obtain IT services. We highlight use policy and respect for copyright, which are reinforced by posters and screen savers in computer labs focused on risks of illegal music sharing.

This year, we added a streaming video program on IT policy, security, and copyright concerns. I welcome the opportunity for you to view the video, and will be happy to make it available to you.

While they represent only 13 percent of total enrollment, students in our residence halls receive special attention, since they are more likely to use network connections for recreation. Students pay a fee to access the residential network, and their use of external bandwidth is subject to weekly limits.

Our website lists legal alternatives for obtaining music and videos over the Internet, including Apple's iTunes Music Store, Napster, Ruckus, and others. UT monitors experiences of universities that provide blanket access to commercial services either at no cost to students or at substantial discounts. The no-cost model holds little interest for us, however; as it would require either a diversion of scarce academic funds or a universal fee imposed on students who may not use the service. One or more optional services available at discount would be more attractive; although the take-

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up rate for such services on other campuses appears to have been low.

Monitoring of data traffic is not limited to students in ResNet. We have established a set of predicted patterns of external network usage, as well as programs to detect unusual activity. Substantial traffic into and out of UTnet may be normal for key servers supporting research, instruction, and administration, but elsewhere could merit further scrutiny. We believe students subject to network authentication and bandwidth quotas are less likely to engage in piracy and other illegal behavior.

DMCA compliance is entrusted to the information security office, which responds within one business day to any complaint. First offenders receive a warning, 71 percent of which elicit a response and are closed out within 24 hours. Close-out requires take-down of any copyrighted material and a first-offense official referral to the dean's office. In the rare case of a second offense—only eight in the past 14 months—access is automatically disabled, and a student must meet with student judicial services before service can be restored.

Respect for intellectual property at UT is not limited to music and video file sharing. The university licenses a broad suite of security and other software. And UT's software licensing supports copyright compliance, as well, since one source of pirated content is insecure computers hijacked via the Internet.

UT and other members of the Internet2 consortium are aware of the rogue i2Hub file-sharing system that uses the Internet2 Abilene network for data transport. This activity is in no way affiliated with or endorsed by Internet2 or any of its 207 university members. At UT Austin any illegal use of i2Hub is subject to the same sanctions as other violations.

Looking forward, UT Austin is critically dependent on access to information, computational resources, and collaborators around the world. Technological innovation is transforming what, whom, and how we teach; the foci and methodology of our research programs; and our ability to serve society.

Critical to innovation and service to society, as anticipated by the framers of the Constitution, is a balanced view of copyright. As the pace of innovation increases, the university is committed to participating in this ongoing discourse with our partners in industry and Government, to maintain the balance. Thank you very much.

[The prepared statement of Mr. Updegrove follows:]

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PREPARED STATEMENT OF DANIEL A. UPDEGROVE

Statement of Daniel A. Updegrove
Vice President for Information Technology
Adjunct Professor, School of Information
The University of Texas at Austin
Before the Subcommittee on
Courts, the Internet, and Intellectual Property
Committee on the Judiciary
U.S. House of Representatives

Oversight Hearing on
Reducing Peer-to-Peer Piracy (P2P)
On University Campuses: A Progress Update

September 22, 2005

Chairman Smith, Ranking Democratic Member Berman, Members of the Subcommittee:

Thank you for the opportunity to discuss The University of Texas at Austin's approach to reducing Peer-to-Peer (P2P) piracy on our data network, including a comparatively recent activity known as "i2hub." Let me begin by stating that the University is dedicated to developing leaders who exhibit responsible and ethical civic behavior, whether in the real or virtual world. This challenge is one we have been addressing for 122 years, and P2P file sharing provides the latest, but surely not the last, context for our mission. We take seriously any illegal or unethical behavior, and we have made substantial efforts to increase awareness and promote positive choices among the members of our community.

At UT Austin management of information and technology resources, including the data network and access to the Internet, is based upon four fundamental principles: respect for intellectual property, including its fair use in the academic setting; respect for the privacy and academic freedom of students, faculty, and staff; compliance with the law; and stewardship of our financial resources. Within this general framework University policy on acceptable use of computer and information technology resources – which explicitly prohibits piracy of intellectual property – is supported by extensive information and orientation programs, a comprehensive network bandwidth monitoring system, compliance with the Digital Millennium Copyright Act (DMCA), and campus-wide licensing of security-related and other software.

About UT Austin

Founded in 1883, The University of Texas at Austin is the flagship of the fifteen-campus University of Texas System, with 39,000 undergraduate, 11,000 graduate and professional students, and 300,000 continuing education students in sixteen colleges and schools. Of the 50,000 enrolled students, over 95% own their own computers; only 6,500 reside in campus housing, however. Already one of the largest campuses in the country, our ranks increased in recent weeks when we welcomed over 425 students and 20 faculty members displaced by Hurricane Katrina.

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The University conducts research in a wide range of disciplines on its Austin campuses as well as the Marine Science Institute on the Gulf coast and the McDonald Observatory in West Texas. Supporting our instructional and research programs is a campus data network, UTnet, that links to the commodity Internet, the Internet2 Abilene network, the NSF TeraGrid, the Texas Lonestar Education And Research Network (LEARN), and (this Fall) the National LambdaRail (NLR). UTnet connects 55,000 computers and other devices on campus, including 1,300 wireless access points serving the growing number of students, faculty, and staff members who use laptop computers or other wireless devices.

The core purpose of the University is "To transform lives for the benefit of society." In support of this purpose is our Honor Code:

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Principles

As colleagues from other universities have stated eloquently in prior hearings, intellectual property – its creation, protection, citation, and use – is fundamental to the academic enterprise. UT, as a vast source of copyrighted material, as one of the world's great repositories for scholarship and art, as one of the largest grantors of doctoral degrees in the world, and as the home of a major university press, is committed to protecting the rights of authors to their works. Equally important, the University requires fair use of copyrighted material to carry out our instruction, research, and public service missions.

Academic freedom and respect for privacy are hallmarks of great universities. Without academic freedom and privacy, we cannot attract the best and brightest faculty to research and teach, or the best and brightest students to learn and, in many cases, join the scholarly tradition. Faculty and students must know that the subjects of their scholarship, hypotheses explored, paths of inquiry, data collected and analyzed, publications prepared, and classes taught will not be subject to either unauthorized scrutiny or prior restraint. Since virtually all scholarship now requires computers connected to networks, university computer systems and networks must be managed in a way that protects the privacy of the academic enterprise.

Compliance with federal and state law – and in our case, in addition, the policies of the Regents of the University of Texas System – informs the design of our information systems and business processes as well as the policies for appropriate use of our information resources. Salient Federal statutes include the Digital Millennium Copyright Act, the Family Educational Rights and Privacy Act (FERPA), the Health Information Portability and Accountability Act (HIPAA), and the CAN-SPAM Act of 2004.

Finally, universities such as UT operate with both lofty goals and constrained resources. We seek to attract world-class faculty, provide excellent research and instructional facilities, educate the best students irrespective of family income, and impose the

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minimum constraints on scholarly inquiry – while responding to calls for accountability from state legislators and low tuition from students and parents. Even with grants, corporate partnerships, and bright technicians being paid student wages, there is never enough funding for information technology at any research university. Every request for a new service must be viewed with a critical eye, and most likely, an advisory committee.

UT Policy on Copyright in the Digital Environment

The UT Austin Acceptable Use Policy for computer and information technology resources, which has been in place for many years, is unequivocal in prohibiting violation of Federal copyright law:

It is a violation of University policy and federal law to participate in copyright infringement. Copyrighted materials include, but are not limited to, computer software, audio and video recordings, photographs, and written material. Violators are subject to University discipline, including suspension, as well as legal liability, even if the work did not contain a written copyright notice. See the UT System Copyright Policy and the Digital Millennium Copyright Act for more information. It is a violation to use your computer to copy, display or distribute copyrighted materials such as software, MP3 files, or MPEG files illegally. See also Fair Use of Copyrighted Materials.

Orientation and Awareness Programs

UT Austin has an extensive, and continually updated, orientation and awareness program, which highlights the Acceptable Use Policy generally and copyright infringement specifically. Our Information Technology Services staff conducts a mandatory in-person orientation for freshman students before they can obtain IT services. UT policy is reinforced by posters in computer labs (Appendix I) and screen savers for lab computers (Appendix II) focused on the risks of illegal music sharing. The University website also warns of the risks of P2P software and file sharing, including potential loss of IT services, disciplinary probation, suspension from the University, and criminal prosecution (Appendix IV).

This year we have added to orientation a professionally-designed streaming video program on IT policy, security, and copyright concerns (Appendix III). I would welcome the opportunity for you to view the video and will be happy to make it available to you. The content, dialogue, and peer talent all are geared to appeal to our students, as we seek to align their attitudes with responsible behavior. Student response to the video has been very favorable.

While they represent only 13% of our total enrollment, students in our residence halls receive special attention, since they are more likely to use their Internet connections for recreational purposes. Students in our Residential Network (ResNet) pay a fee to access the data network, and their use of external network bandwidth is subject to weekly limits. In addition we provide a special website for ResNet students, highlighting policies, including respect for copyright.

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Included in our information campaign is a web page listing legal alternatives for obtaining music and videos over the Internet, including Apple Computer's iTunes Music Store, Napster, Ruckus, and others (Appendix V). UT is reviewing with interest the experiences of universities that provide blanket access to such commercial services, either at no cost to students or at substantial discounts. The "no-cost" model holds little interest for us, as it would require either a diversion of scarce university funds better dedicated to academic purposes, or a universal fee imposed on students who may not use the service. One or more optional services available at discount would be more attractive, although we understand the take-up rate for such services on other campuses has been quite low.

Network Bandwidth Management

Monitoring of data network traffic at the UTnet gateway is not limited to students in ResNet. In fact we have established, over time, a set of predicted patterns of external network usage, as well as statistical analysis programs that detect unusual activity. For example substantial traffic into and out of UTnet may be normal for key servers supporting research, instruction, and administration, but an indication that further scrutiny is called for elsewhere. A sudden "spike" in network traffic may indicate a new and successful inter-university research collaboration, a computer security breach, or, perhaps, unauthorized behavior. Depending on the location of the computer, the time of day, and the extent of the traffic flow, our response may include a phone conversation with the computer's owner or administrator, shutting down the computer's network port, forensic analysis of the computer itself, or referral to judicial authorities.

Usage Patterns for a computer always connected to the same network port are easier to manage than random connections of tens of thousands of laptop computers connected to 1,300 wireless access points and 2,000 "public" wired ports in libraries and classrooms. UT's response has been to institute a personal threshold management system for these services, such that students, faculty, and staff are assigned quotas for external bandwidth, no matter how many different wireless or wired connections they make in a given week. We believe students subject to network authentication and bandwidth quotas are less likely to engage in piracy and other illegal behavior.

Compliance with the Digital Millennium Copyright Act

DMCA compliance is entrusted to the Information Security Office (ISO), supported by the Office of Institutional Relations and Legal Affairs and the Office of the Dean of Students. The UT Home Page links to the DMCA compliance procedure, which in turn links to the UT System "Crash Course on Copyright," a widely-cited web resource (Appendix VI).

The ISO responds within one business day to any official complaint alleging violation of the DMCA on either University-owned or personally-owned computers using the University network. First offenders receive a warning, 71% of which elicit a response and are closed out within 24 hours. Close out requires take down of any copyrighted material and acknowledgement of the Acceptable Use Policy, as well as a first-offense referral to

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Student Judicial Services. If no response is received within three days, the user's network access is disabled. In the rare case of a second offense (only eight between July 2004, and August 2005), network access is automatically disabled, and a student receives a formal referral to meet with Student Judicial Services before the service can be restored.

Campus-wide Software Licensing

Respect for intellectual property in the digital environment is not limited to music and video file sharing. The University is committed also to support responsible and legal use of software by the University community. To this end the University licenses a broad suite of commercial software (labeled "BevoWare") for the Windows and Apple Macintosh operating systems, and makes this software available via an authenticated website to current students, faculty and staff. Included in BevoWare are antivirus and personal firewall products, anti-spyware tools, virtual private network and secure file transfer utilities, and so forth. In addition the University, in collaboration with all campuses in the UT System, licenses for University- and personally-owned computers the complete Microsoft Office suite as well as upgrades to the Microsoft Windows operating system. The cost for use of this software on student–owned computers is funded by the student IT fee.

UT's software licensing program supports our copyright compliance policy as well, since it is well known that one source of pirated content – music, videos, games, and other software – is insecure computers that have been hijacked via the Internet. Keeping UT computers secure also reduces the likelihood that they will be available to participate in so-called "distributed denial of service attacks."

Commentary on "i2hub"

As a member of the Network Planning and Policy Advisory Council of Internet2, I would like to comment on "i2hub," an online collaboration and file sharing system the creation and management of which is attributed to a student-led group at an East Coast University. To contextualize the University's concern about i2hub, let me review briefly the origins and importance of Internet2.

Internet2 is a consortium being led by 207 U.S. universities working in partnership with industry and government to develop and deploy advanced network applications and technologies, accelerating the creation of tomorrow's Internet. The primary goals of Internet2 are to:

- Create a leading edge network capability for the national research community
- Enable revolutionary Internet applications
- Ensure the rapid transfer of new network services and applications to the broader Internet community.

UT Austin President Larry R. Faulkner is currently chairman of the Board of Internet2, and I was among the thirty or so university IT leaders who launched this initiative in Chicago in October, 1996.

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In any great undertaking there will always be a small minority that abuses the system; this is the case with the "i2Hub." Although this activity uses the Internet2 Abilene network for data transport, it is in no way affiliated with or endorsed by the Internet2 organization or any of its university members. The i2Hub server is not on any Internet2 member campus and is not accessible directly via Abilene. Moreover i2hub has no consent from Internet2 to use "i2" in its name.

The apparent design goal of i2hub is to leverage the high bandwidth and reduced congestion of Abilene to facilitate file sharing by restricting participants to those who are affiliated with Internet2 member institutions. A subsidiary goal may be to avoid detection of illegal activity, on the assumption that valid copyright holders from the content industries tend not to have Abilene access. The large number of lawsuits filed in April, 2005, against alleged i2hub users by the Recording Industry Association of America (RIAA) and Motion Picture Association of America (MPAA) appears to undercut any presumption that illegal use of i2hub is without risk, however.

Although several students at UT Austin have apparently participated in i2hub, any copyright abuse is in violation of University policy and is subject to DMCA-related and other sanctions. In addition, UT's bandwidth management system does not distinguish between Internet2/Abilene and the commodity Internet, so students at UT have no special incentive to participate in i2Hub.

Looking Forward

As a major research university, The University of Texas at Austin is critically dependent on access to information, computational resources, and collaborators wherever on the globe they happen to be. Innovations in processing power, storage, data transmission, data compression, search and retrieval, *et al.* – some of which originate at UT – are transforming what, who, and how we teach; the foci and methodology of our research programs; and our ability to serve society. Critical to innovation and service to society – as anticipated by the framers of the Constitution – is a balanced view of copyright. Fair use is one such concept of balance that is recognized under law. As the pace of innovation increases, the University is committed to participating in the ongoing discourse with our partners in industry and government to maintain this balance.

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References:

UT Austin "Acceptable Use Policy" for computer and information technology resources, http://www.utexas.edu/its/policies/responsible.html

UT Austin, "ResNet Policies and Procedures," http://resnet.utexas.edu/policy/

UT Austin, "Downloaders, beware: Copyright infringement could have you singing the blues," http://www.utexas.edu/its/news/features/072003/download.html

Electronic Frontier Foundation, "When push comes to shove: A hype-free guide to evaluating technical solutions to copyright infringement on campus networks," 2005 http://www.eff.org/wp/univp2p.php

"Fair use of copyrighted materials," section of UT System Crash Course in Copyright, http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm

Internet2 Website
http://www.internet2.edu

i2Hub Website,
http://www.i2hub.com/

Attachments:

I. UT Austin Copyright Compliance Poster, "Don't be singing the blues,"2003/2005

II. UT Austin, "Don't be singing the blues," screen savers in student computer labs, 2004/2005

III. UT Austin, "Copyright Concerns," screen shots from UT student orientation video, summer/fall, 2005, http://www.utexas.edu/its/support/training/orientation05/

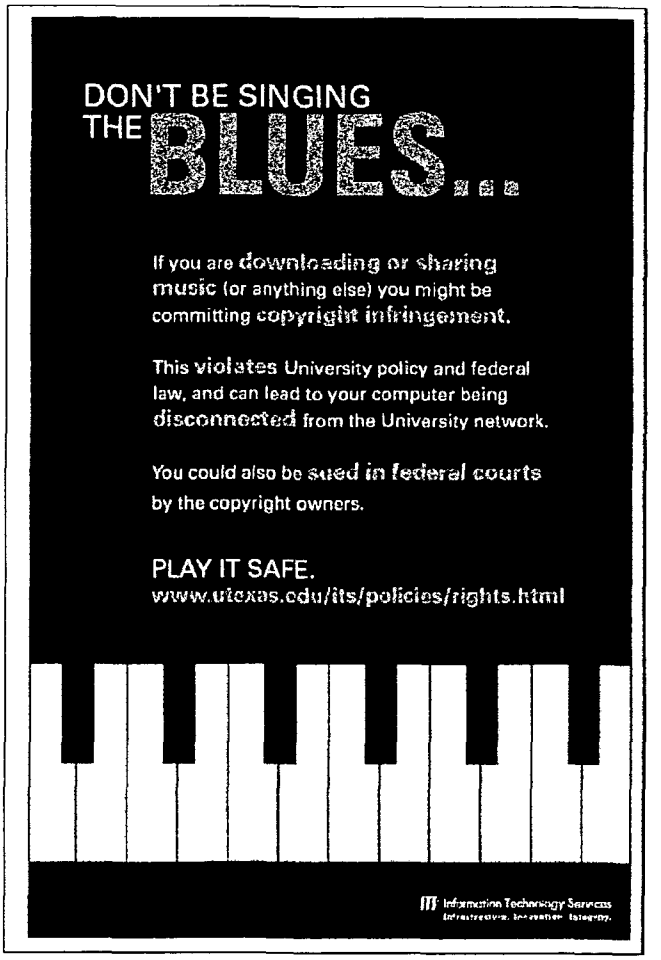
IV. UT Austin, "Keep it legal: Get your music and movies the right way," web page, http://www.utexas.edu/its/policies/music/

V. UT Austin, "Finding legal online music, movies, and other electronic content," web page, http://www.utexas.edu/its/policies/music/music-sources.html

VI. "The UT System Crash Course in Copyright" home page, http://www.utsystem.edu/ogc/intellectualproperty/cprtindx.htm

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I. UT Austin Copyright Compliance Poster, 2003/2005



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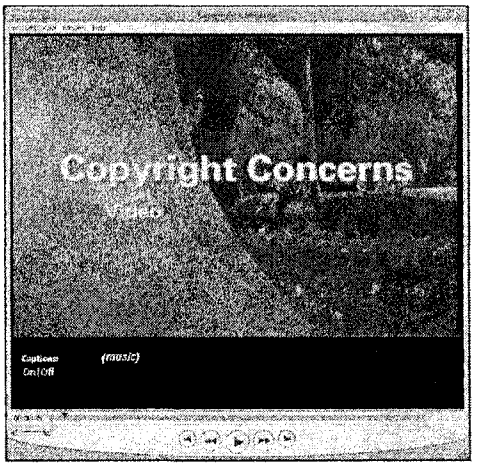
II. UT Austin Copyright Compliance Screen Saver, 2004/2005





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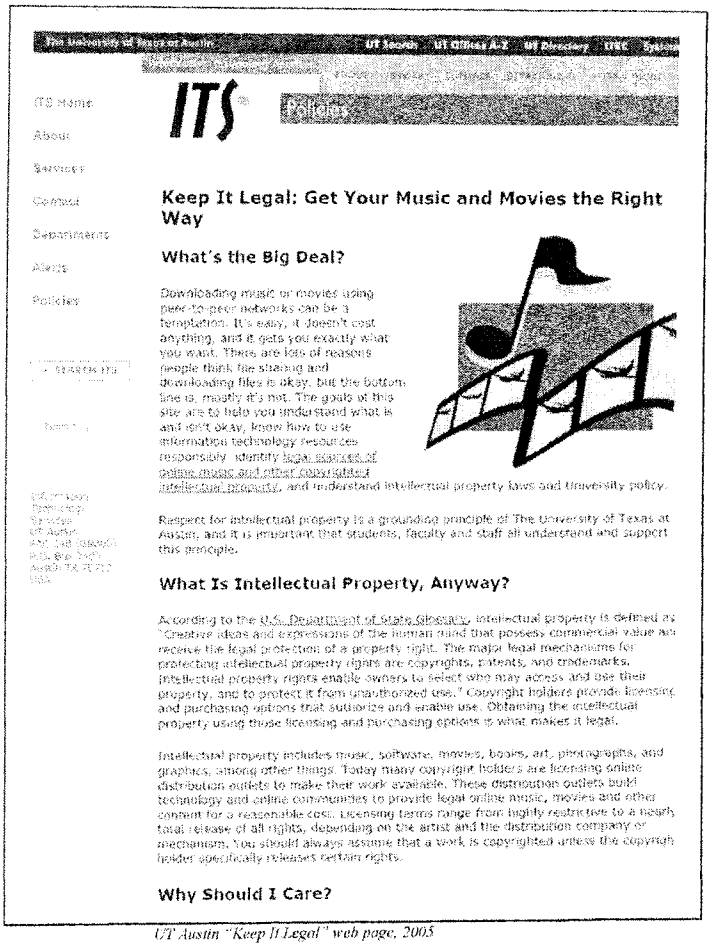
III. UT Austin Student Orientation video – Summer/Fall 2005





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IV. UT Austin "Keep It Legal" web page, 2005



ITS Home
About
Services
Contact
Departments
Alerts
Policies

ITS
Policies

Keep It Legal: Get Your Music and Movies the Right Way

What's the Big Deal?

Downloading music or movies using peer-to-peer networks can be a temptation. It's easy, it doesn't cost anything, and it gets you exactly what you want. There are lots of reasons people think file sharing and downloading files is okay, but the bottom line is, mostly it's not. The goals of this site are to help you understand what is and isn't okay, know how to use information technology resources responsibly, identify legal sources of online music and other copyrighted intellectual property, and understand intellectual property laws and university policy.

Respect for intellectual property is a grounding principle of The University of Texas at Austin, and it is important that students, faculty and staff all understand and support this principle.

What Is Intellectual Property, Anyway?

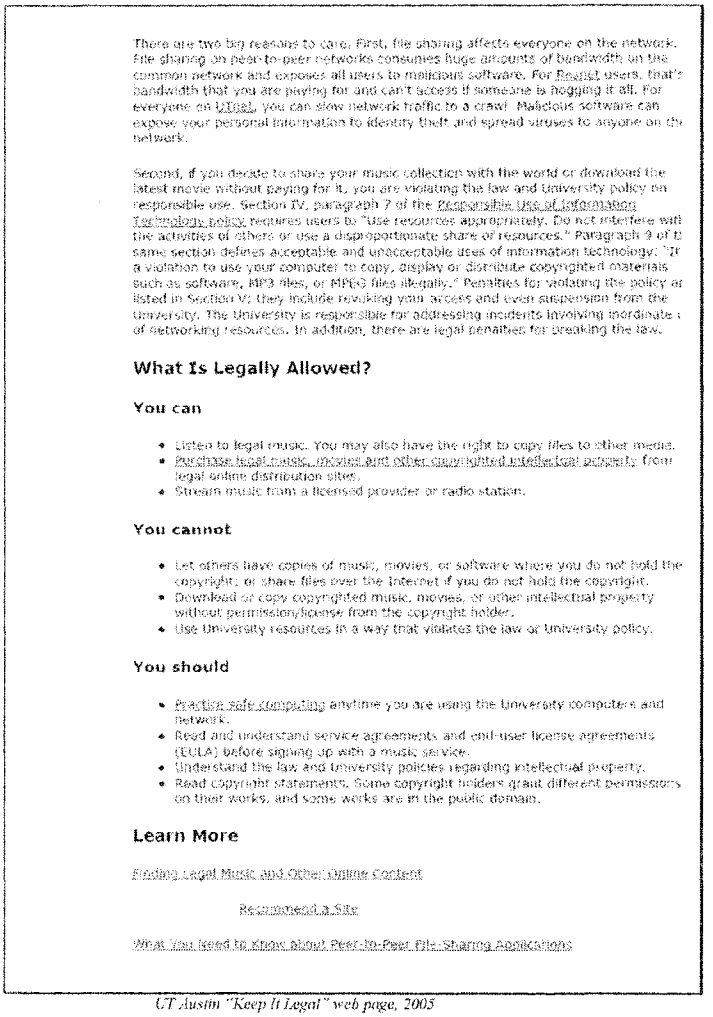
According to the U.S. Department of State Glossary, intellectual property is defined as "Creative ideas and expressions of the human mind that possess commercial value an receive the legal protection of a property right. The major legal mechanisms for protecting intellectual property rights are copyrights, patents, and trademarks. Intellectual property rights enable owners to select who may access and use their property, and to protect it from unauthorized use." Copyright holders provide licensing and purchasing options that authorize and enable use. Obtaining the intellectual property using those licensing and purchasing options is what makes it legal.

Intellectual property includes music, software, movies, books, art, photographs, and graphics, among other things. Today many copyright holders are licensing online distribution outlets to make their work available. These distribution outlets build technology and online communities to provide legal online music, movies and other content for a reasonable cost. Licensing terms range from highly restrictive to a nearly total release of all rights, depending on the artist and the distribution company or mechanism. You should always assume that a work is copyrighted unless the copyrigh holder specifically releases certain rights.

Why Should I Care?

UT Austin "Keep It Legal" web page, 2005

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There are two big reasons to care. First, file sharing affects everyone on the network. File sharing on peer-to-peer networks consumes huge amounts of bandwidth on the common network and exposes all users to malicious software. For Resnet users, that's bandwidth that you are paying for and can't access if someone is hogging it all. For everyone on UTnet, you can slow network traffic to a crawl. Malicious software can expose your personal information to identity theft and spread viruses to anyone on the network.

Second, if you decide to share your music collection with the world or download the latest movie without paying for it, you are violating the law and university policy on responsible use. Section IV, paragraph 7 of the Responsible Use of Information Technology policy requires users to "Use resources appropriately. Do not interfere with the activities of others or use a disproportionate share of resources." Paragraph 9 of the same section defines acceptable and unacceptable uses of information technology: "It is a violation to use your computer to copy, display or distribute copyrighted materials such as software, MP3 files, or MPEG files illegally." Penalties for violating the policy are listed in Section VI; they include revoking your access and even suspension from the University. The University is responsible for addressing incidents involving inordinate use of networking resources. In addition, there are legal penalties for breaking the law.

What Is Legally Allowed?

You can

- Listen to legal music. You may also have the right to copy files to other media.
- Purchase legal music, movies and other copyrighted intellectual property from legal online distribution sites.
- Stream music from a licensed provider or radio station.

You cannot

- Let others have copies of music, movies, or software where you do not hold the copyright, or share files over the Internet if you do not hold the copyright.
- Download or copy copyrighted music, movies, or other intellectual property without permission/license from the copyright holder.
- Use University resources in a way that violates the law or University policy.

You should

- Practice safe computing anytime you are using the University computers and network.
- Read and understand service agreements and end-user license agreements (EULA) before signing up with a music service.
- Understand the law and University policies regarding intellectual property.
- Read copyright statements. Some copyright holders grant different permissions on their works, and some works are in the public domain.

Learn More

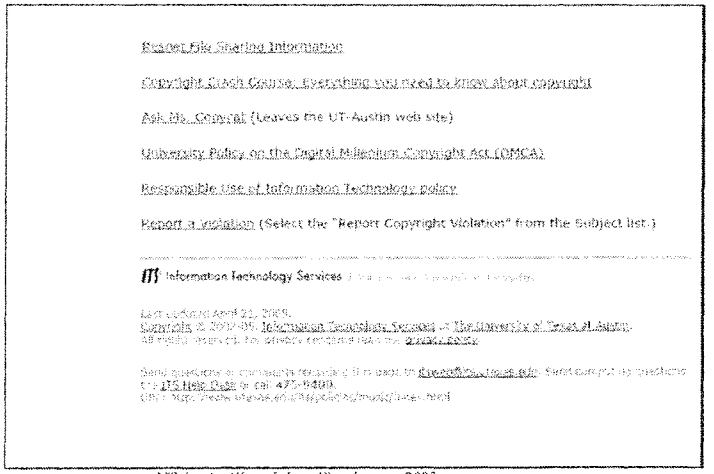
Finding Legal Music and Other Online Content

Recommend a Site

What You Need to Know about Peer-to-Peer File-Sharing Applications

UT Austin "Keep It Legal" web page, 2005

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Student File Sharing Information

Copyright Crash Course: Everything you need to know about copyright

Ask Dr. Copyright (Leaves the UT-Austin web site)

University Policy on the Digital Millenium Copyright Act (DMCA)

Responsible Use of Information Technology Policy

Report a violation (Select the "Report Copyright Violation" from the Subject list.)

Information Technology Services

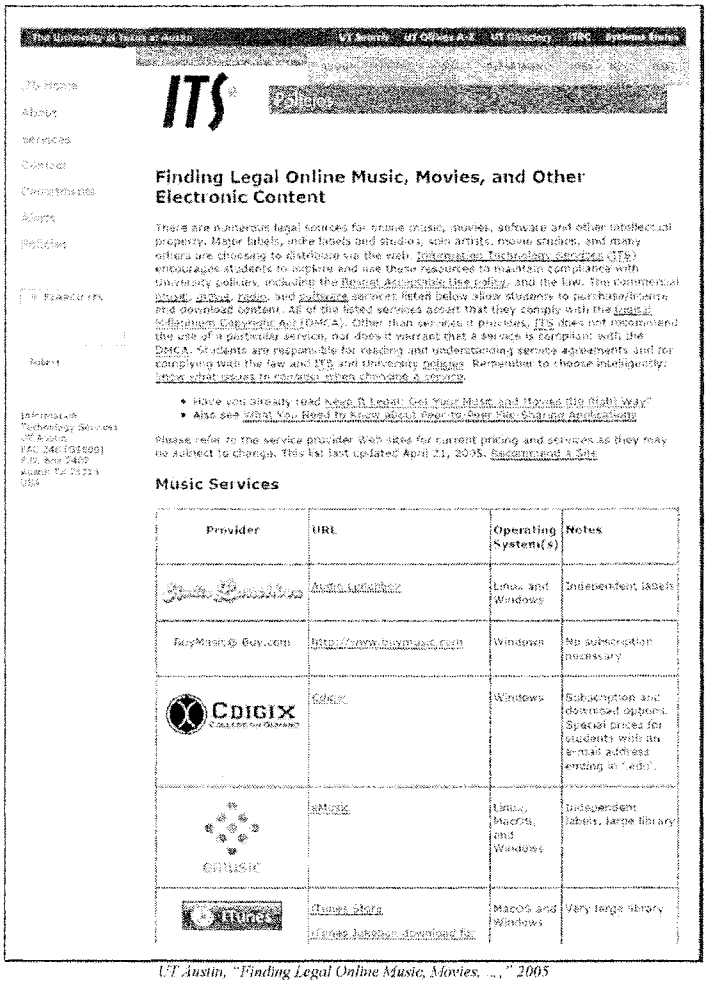
Last updated April 21, 2005.
Copyright © 2002-05, Information Technology Services at The University of Texas at Austin.
All rights reserved. For privacy complaints please see Privacy Policy.

Send questions or comments regarding this page to Copyright@utexas.edu. Send copyright questions to the ITS Help Desk or call 475-9400.
URL: http://www.utexas.edu/its/policies/dmca/index.html

UT Austin "Keep It Legal" web page, 2005

HeinOnline -- 2 Protecting America's Intellectual Property: A Legislative History of the Pro IP Act of 2008 (William H. Manz, ed.) 26 2009

V. UT Austin, "Finding Legal Online Music, Movies, ...," 2005



ITS

Finding Legal Online Music, Movies, and Other Electronic Content

There are numerous legal sources for online music, movies, software and other intellectual property. Major labels, indie labels and studios, solo artists, movie studios, and many others are choosing to distribute via the web. Information Technology Services (ITS) encourages students to explore and use these resources to maintain compliance with University policies, including the Network Acceptable Use policy, and the law. The commercial music, movie, radio, and software services listed below allow students to purchase/rent/stream and download content. All of the listed services assert that they comply with the Digital Millennium Copyright Act (DMCA). Other than personal practices, ITS does not recommend the use of a particular service, nor does it warrant that a service is compliant with the DMCA. Students are responsible for reading and understanding service agreements and for complying with the law and ITS and University policies. Remember to choose intelligently; there are issues to consider when choosing a service.

- Have you already read Keep It Legal: Get Your Music and Movies the Right Way?
- Also see What You Need to Know about Peer-to-Peer File-Sharing Applications

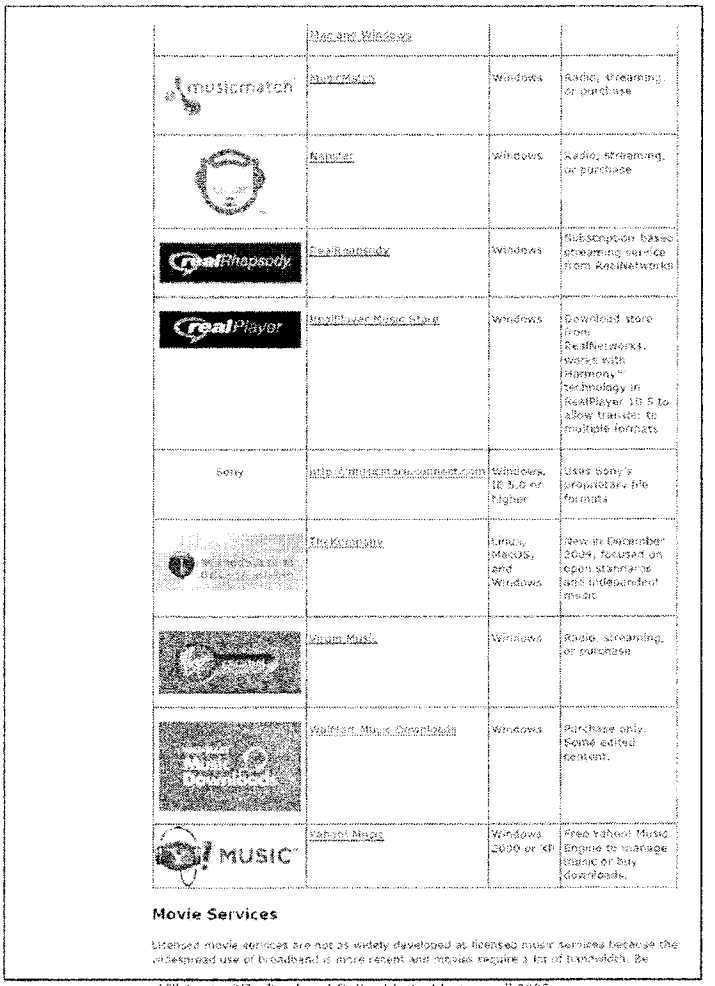
Please refer to the service provider Web sites for current pricing and services as they may be subject to change. This list last updated April 21, 2005. Recommend a Site

Music Services

Provider	URL	Operating System(s)	Notes
Audio Lunchbox	Audio Lunchbox	Linux and Windows	Independent labels
BuyMusic.com	http://www.buymusic.com	Windows	No subscription necessary
CDIGIX	Cdigix	Windows	Subscription and download options. Special prices for students with an e-mail address ending in ".edu".
emusic	eMusic	Linux, MacOS, and Windows	Independent labels, large library
iTunes	iTunes Store iTunes Selection download list	MacOS and Windows	Very large library

UT Austin, "Finding Legal Online Music, Movies, ...," 2005

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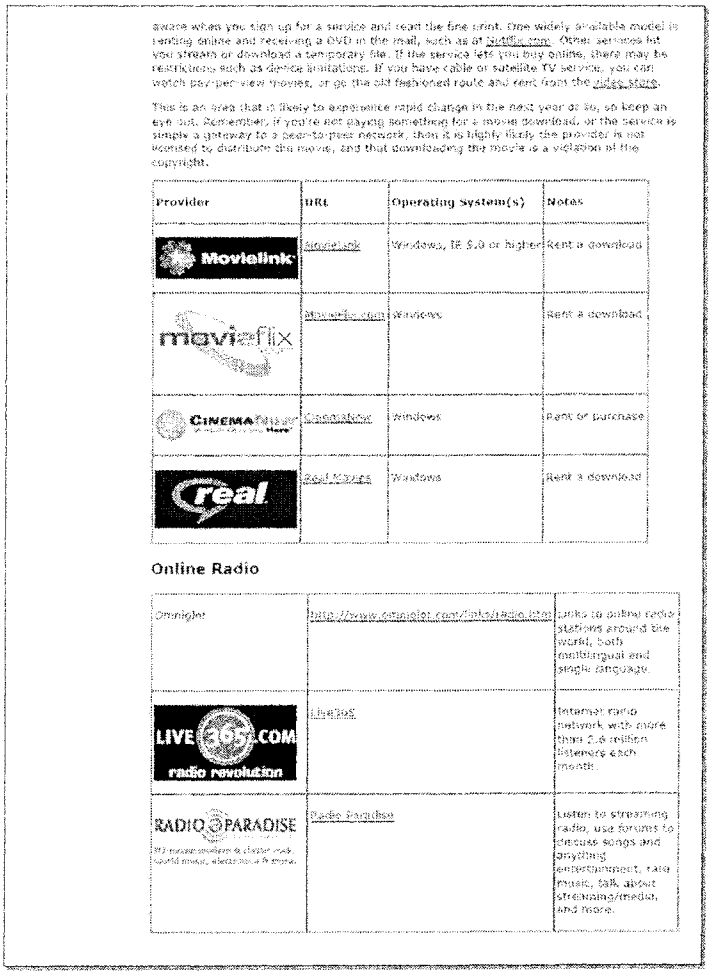
	Mac and Windows		
musicmatch	MusicMatch	Windows	Radio, streaming, or purchase
	Napster	Windows	Radio, streaming, or purchase
Real Rhapsody	RealRhapsody	Windows	Subscription based streaming service from RealNetworks
RealPlayer	RealPlayer Music Store	Windows	Download store from RealNetworks, works with Harmony™ technology in RealPlayer 10.5 to allow transfer to multiple formats
Sony	http://musicstore.connect.com	Windows, IE 5.5 or higher	Uses sony's proprietary file formats
	The Kiosk.com	Linux, MacOS, and Windows	New in December 2004, focused on open standards and independent music
	Virgin Music	Windows	Radio, streaming, or purchase
	Walmart Music Downloads	Windows	Purchase only. Some edited content.
MUSIC	Yahoo! Music	Windows 2000 or XP	Free Yahoo! Music Engine to manage music or buy downloads.

Movie Services

Licensed movie services are not as widely developed as licensed music services because the widespread use of broadband is more recent and movies require a lot of bandwidth. Be

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aware when you sign up for a service and read the fine print. One widely available model is renting online and receiving a DVD in the mail, such as at Netflix.com. Other services let you stream or download a temporary file. If the service lets you buy online, there may be restrictions such as device limitations. If you have cable or satellite TV service, you can watch pay-per-view movies, or go the old fashioned route and rent from the video store.

This is an area that is likely to experience rapid change in the next year or so, so keep an eye out. Remember, if you're not paying something for a movie download, or the service is simply a gateway to a peer-to-peer network, then it is highly likely the provider is not licensed to distribute the movie, and that downloading the movie is a violation of the copyright.

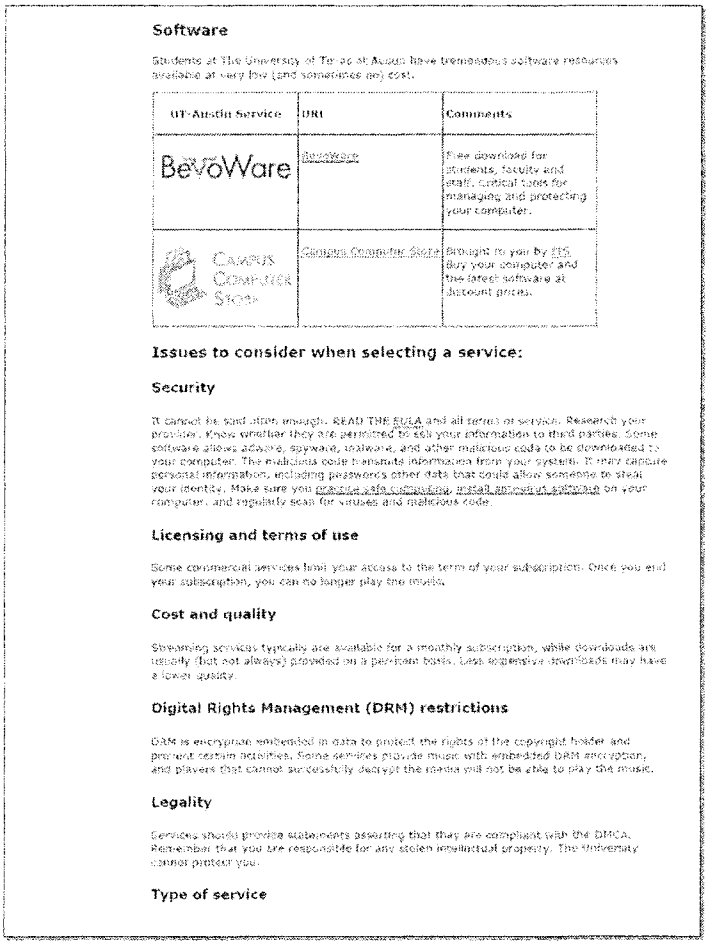
Provider	URL	Operating System(s)	Notes
Movielink	Movielink	Windows, IE 5.0 or higher	Rent a download
movieflix	Movieflix.com	Windows	Rent a download
CINEMANOW	Cinemanow	Windows	Rent or purchase
real	Real Movies	Windows	Rent a download

Online Radio

Omnigio	http://www.omnigio.com/links/radio.htm	Links to online radio stations around the world, both multilingual and single language.
LIVE365.COM radio revolution	Live365	Internet radio network with more than 2.6 million listeners each month.
RADIO PARADISE	Radio Paradise	Listen to streaming radio, use forums to discuss songs and anything entertainment, radio music, talk, about streaming/media, and more.

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Software

Students at The University of Texas at Austin have tremendous software resources available at very low (and sometimes no) cost.

UT-Austin Service	URL	Comments
BeVoWare	BeVoWare	Free downloads for students, faculty and staff. Critical tools for managing and protecting your computer.
Campus Computer Store	Campus Computer Store	Brought to you by ITS. Buy your computer and the latest software at discount prices.

Issues to consider when selecting a service:

Security

It cannot be said often enough. READ THE EULA and all terms of service. Research your provider. Know whether they are permitted to sell your information to third parties. Some software allows adware, spyware, malware, and other malicious code to be downloaded to your computer. The malicious code transmits information from your system. It may capture personal information, including passwords other data that could allow someone to steal your identity. Make sure you protect your computer, install antivirus software on your computer, and regularly scan for viruses and malicious code.

Licensing and terms of use

Some commercial services limit your access to the term of your subscription. Once you end your subscription, you can no longer play the music.

Cost and quality

Streaming services typically are available for a monthly subscription, while downloads are usually (but not always) provided on a per-song basis. Less expensive downloads may have a lower quality.

Digital Rights Management (DRM) restrictions

DRM is encryption embedded in data to protect the rights of the copyright holder and prevent certain activities. Some services provide music with embedded DRM encryption, and players that cannot successfully decrypt the media will not be able to play the music.

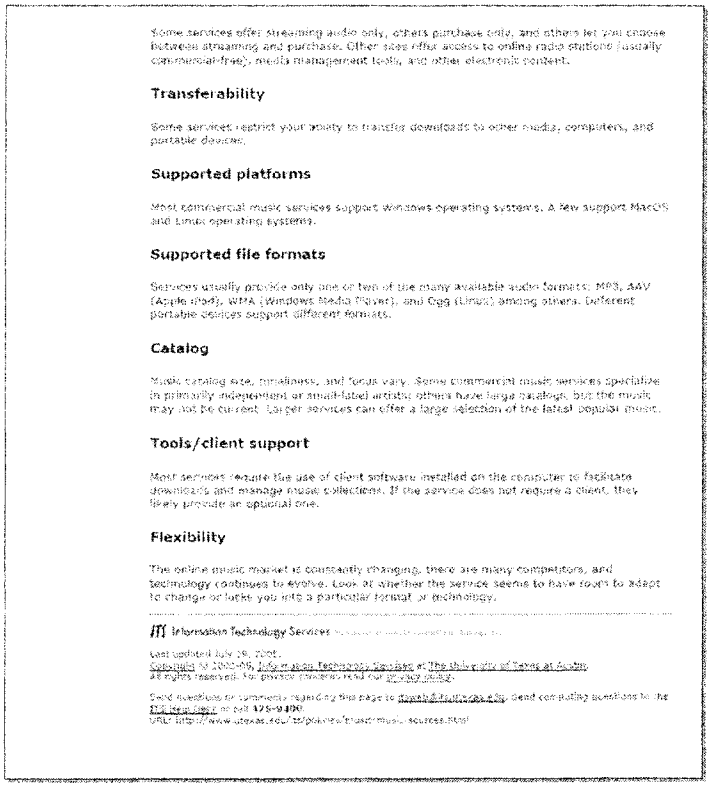
Legality

Services should provide statements asserting that they are compliant with the DMCA. Remember that you are responsible for any stolen intellectual property. The University cannot protect you.

Type of service

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Some services offer streaming audio only, others purchase only, and others let you choose between streaming and purchase. Other sites offer access to online radio stations (usually commercial-free), media management tools, and other electronic content.

Transferability

Some services restrict your ability to transfer downloads to other media, computers, and portable devices.

Supported platforms

Most commercial music services support Windows operating systems. A few support MacOS and Linux operating systems.

Supported file formats

Services usually provide only one or two of the many available audio formats: MP3, AAV (Apple iPod), WMA (Windows Media Player), and Ogg (Linux) among others. Different portable devices support different formats.

Catalog

Music catalog size, timeliness, and focus vary. Some commercial music services specialize in primarily independent or small-label artists; others have large catalogs, but the music may not be current. Larger services can offer a large selection of the latest popular music.

Tools/client support

Most services require the use of client software installed on the computer to facilitate downloads and manage music collections. If the service does not require a client, they likely provide an optional one.

Flexibility

The online music market is constantly changing, there are many competitors, and technology continues to evolve. Look at whether the service seems to have tools to adapt to change or locks you into a particular format or technology.

Information Technology Services

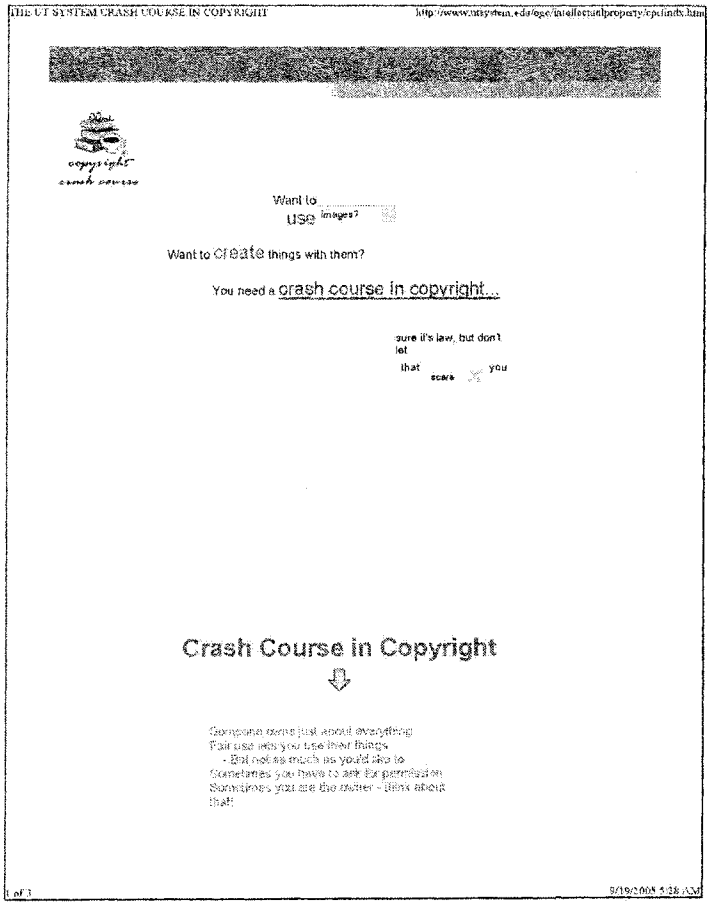
Last updated July 29, 2004.
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All rights reserved. For permission requests read our copyright policy.

Send questions or comments regarding this page to its@austin.utexas.edu. Send computing questions to the UT Help Desk or call 475-9400.
URL: http://www.utexas.edu/cc/policies/finding_music_sources.html

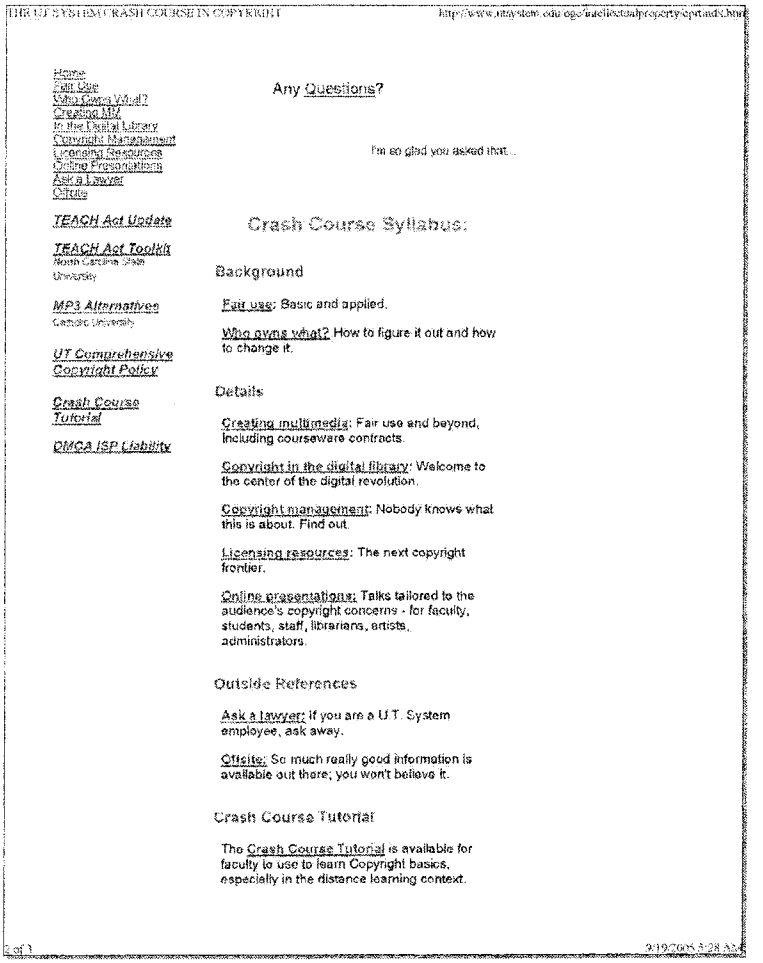
UT Austin, "Finding Legal Online Music, Movies, ...," 2005

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VI. UT System "Copyright Crash Course" Website, 2001/2005



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THE UT SYSTEM CRASH COURSE IN COPYRIGHT http://www.utsystem.edu/ogc/intellectualproperty/cprtmdl.htm

Home
Fair Use
Who Owns What?
Creating IM
In the Digital Library
Copyright Management
Licensing Resources
Online Presentations
Ask a Lawyer
Offsite

TEACH Act Update

TEACH Act Toolkit
North Carolina State University

MP3 Alternatives
Catholic University

UT Comprehensive Copyright Policy

Crash Course Tutorial

DMCA ISP Liability

Any Questions?

I'm so glad you asked that...

Crash Course Syllabus:

Background

Fair use: Basic and applied.

Who owns what? How to figure it out and how to change it.

Details

Creating multimedia: Fair use and beyond, including courseware contracts.

Copyright in the digital library: Welcome to the center of the digital revolution.

Copyright management: Nobody knows what this is about. Find out.

Licensing resources: The next copyright frontier.

Online presentations: Talks tailored to the audience's copyright concerns - for faculty, students, staff, librarians, artists, administrators.

Outside References

Ask a lawyer: If you are a U.T. System employee, ask away.

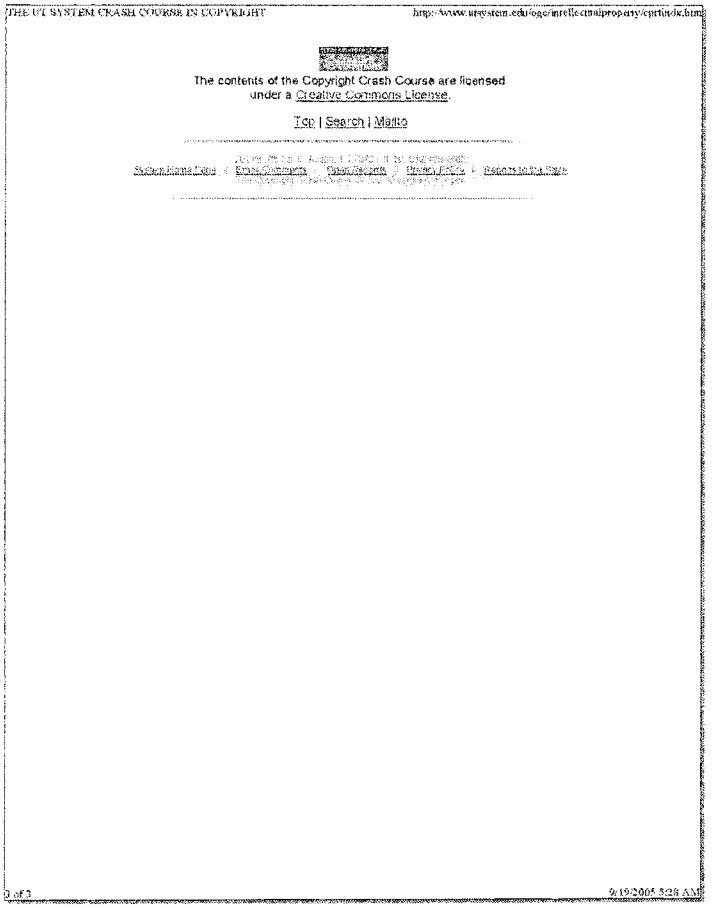
Offsite: So much really good information is available out there; you won't believe it.

Crash Course Tutorial

The Crash Course Tutorial is available for faculty to use to learn Copyright basics, especially in the distance learning context.

1 of 1 2/9/2005 5:28 AM

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THE UT SYSTEM CRASH COURSE IN COPYRIGHT http://www.utsystem.edu/ogc/intellectualproperty/cprtindc.htm

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Mr. SMITH. Thank you, Mr. Updegrove.
Mr. Taylor.

TESTIMONY OF RICHARD TAYLOR, SENIOR VICE PRESIDENT, EXTERNAL AFFAIRS AND EDUCATION, MOTION PICTURE ASSOCIATION OF AMERICA (MPAA)

Mr. TAYLOR. Thank you, Chairman Smith, Ranking Member Berman, and Members of the Subcommittee, for the opportunity to appear here today. I have the privilege of representing the member company studios of the MPAA and the hundreds of thousands of workers within our great industry.

I'm particularly grateful that this Subcommittee has recognized the pivotal role the university environment can play in curtailing theft of movies and other copyrighted works online. The U.S. Supreme Court in the recent Grokster case cited earlier not only clarified its Sony Betamax decision, it voiced a very clear message to users of the Internet: theft of intellectual property is wrong; whether it takes place by stealing a physical copy from a video store, or downloading it in cyberspace. As Justice Breyer said in his concurring opinion, "Deliberate, unlawful copying is no less an unlawful taking of property than garden-variety theft."

The Members of this Subcommittee are well aware that piracy is the greatest obstacle facing our industry. And I'd like to use my time today to outline some measures we are taking and recommending in order to reduce current online theft levels.

As mentioned earlier by Ranking Member Berman, we have recently had two significant announcements that are reflective of our industry's tradition of being at the forefront of technology. Along with RIAA, we announced that we've formally joined Internet2 as a corporate member. And we plan to collaborate with the IT community to develop innovative content distribution and DRM technologies. We're excited at the opportunities the emerging technologies bring as a means to allow more people safe and legal access to movies and television programming.

Earlier this week, we also announced the establishment of Movie Labs. This industry-funded initiative will be dedicated to advancing the future of distribution by identifying secure means of protecting our valuable creative works.

Now, another essential area of focus for our industry is the education community. And in recognition of that, MPAA president Dan Glickman recently established a new external affairs and education department within our organization, dedicated to this mission, which I'm privileged to lead. And through face-to-face meetings with university administrators and students across the nation, we've begun to identify best practices that, when in place, can significantly reduce campus network abuse. These practices target four key areas: technological measures, the offering of legitimate alternatives, education, and enforcement.

Now, there are innovative and effective technological tools available right now, today, that can greatly reduce campus network piracy. In Grokster, the Supreme Court found that, "there is evidence of infringement on a gigantic scale" on P2P systems. Studies have also shown the prevalence of pornography, identify theft, spyware, viruses, and other malware, courtesy of these P2P services. And

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therefore, it seems appropriate to restrict illicit P2P access in university networks.

The University of Florida, with Icarus, has impressive statistics that show how restricting access to illicit P2P can be a tremendous benefit to an institution. I believe Mr. Dunkel will be sharing some of those stories with us shortly.

Other technological options include network filtering, which filter out infringing transmissions by matching their fingerprints against a master database. Also available are bandwidth shaping tools, which ratchet down bandwidth allowances for users systemwide or individually, and thus limit the volume of uploading and downloading taking place.

Legitimate services, as the Chairman referenced, can also play an important role in encouraging legal activity on campus. However, the experience of our friends in the music industry has shown the legitimate services can best take root once technological measure to block illicit P2P have been adopted on campus.

It's critical that students being prepared for their place in society are encouraged to obtain their entertainment legally, and not via illegal P2P means. It's also critical that colleges and universities clearly and repeatedly inform students of the importance of respecting copyrighted works, campus policies, and the law.

Some suggested steps in the area of education include:

Clear acceptable use policies, easily accessible by school network users, not buried several clicks within a site;

Orientation materials should include information on copyright and illegal file theft;

Parents, through letters and orientation sessions, should also be informed of the seriousness of the issue and the legal and institutional penalties that await violators;

Students should be required to take and pass a brief quiz reflecting school policy regarding their network use;

And universities should implement visible, pervasive anti-piracy campaigns throughout the campus.

In order to make clear the institutional commitment to its policies, enforcement measures must be consistent and meaningful. We've found that recidivism is low at those schools with well defined and applied enforcement policies. And I would add that, while we are encouraging strong enforcement by university administrators, we continue to take enforcement actions ourselves in order to protect our creative works. A prime example is our actions against users of the i2Hub system referenced earlier.

Now, we believe that application in these four areas will greatly deter and reduce piracy, while making clear to students the universities take seriously this issue.

I thank the Chairman, the Ranking Member, and all Members of this Subcommittee for holding this hearing. I would ask that if any Members of this Subcommittee have institutions within their district they would like for us to specifically reach out to, we'd welcome that opportunity. And the MPAA would also welcome an opportunity to return before this Subcommittee at a later date, to reexamine the piracy landscape at colleges and universities.

I look forward to answering any questions that you may have about this important matter. Thank you.

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[The prepared statement of Mr. Taylor follows:]

PREPARED STATEMENT OF RICHARD TAYLOR

On behalf of Dan Glickman and the companies that comprise the Motion Picture Association of America, I very much appreciate this opportunity to testify about the film industry's efforts to address peer-to-peer (P2P) piracy on university campuses. The livelihoods of nearly one million men and women in America are impacted by the film and television industry, which entertains millions of consumers every day.

Piracy is the greatest obstacle the film industry currently faces, costing our industry approximately $3.5 billion annually due to hard goods piracy of DVDs and VCDs alone. Deloitte and Touche estimates that approximately 400,000 films are illegally downloaded every day. CacheLogic, an Internet monitoring group, has estimated that over 60 percent of all Internet traffic in the U.S. is attributable to peer-to-peer usage. In Asia, over 80 percent of all traffic on the web is from P2P. Furthermore, well over 90 percent of all the content on P2P networks consists of unauthorized copyrighted files.

In light of these facts, it is important to understand that the film industry rests upon a fragile fiscal base. Each film is a massive upfront investment with absolutely no guarantee of return. The average film costs over $100 million to make and market. Only one in ten films recoups this investment through its theatrical release. Six in ten films never break even. To recoup the considerable investment required to make and market a movie, the film industry relies on foreign distribution and ancillary markets (home video/DVD, pay per view, premium cable, basic cable, free TV, etc.) to make a profit or break even. It is these ancillary markets, especially home video and foreign distribution—economic engines that are essential to this industry—that are most vulnerable to the corrosive effects of film piracy.

Contrary to the repeated accusations of those who oppose reasonable content protections, the film industry has always been in the forefront of technological innovation: DVDs represent but one example. This tradition is even more important now, and the MPAA is working with the technology sector to help move our industry into the future. Our consumers have clearly shown a desire for more choices and flexibility in their filmed entertainment choices, and in turn the MPAA and its member companies are heavily involved in ongoing efforts to create the next generation of secure digital delivery platforms to meet that need. We recognize that the speeds of transfer so dazzling today will likely seem akin to a horse and buggy when new technologies such as Internet2 become the standard. To that end, two weeks ago MPAA joined Internet2 as a corporate member. MPAA plans to collaborate with the Internet2 community to consider innovative content distribution and digital rights management technologies, and to study emerging trends on high-performance networks to enable future business models. We view secure, high speed Internet delivery of films as being integral to our industry's future, and we are excited by the possibilities this collaboration presents.

In addition, MPAA this week announced the establishment of "Movie Labs," a research and development venture that will develop copyright management and other technologies to protect against piracy. The future of film depends upon the development of innovative delivery technologies allowing new, user-friendly business models, and the film industry is diligently working to make these technologies a reality. So you can see that, while we continue our appeal for others to do their part in preventing the illegal abuse of copyrighted works, we are appropriately taking the lead in this regard.

I am particularly grateful that this Committee has recognized the pivotal role the university environment can play in curtailing the theft of movies and other copyrighted works online. As you are well aware, college campuses today harbor some of swiftest computer networks in the country and that, unfortunately, has led to a situation where a significant level of piracy is taking place around the clock on our nation's campuses.

The MPAA is aware of the critical need to reach out to the education community, from elementary school-aged students to university administrators, in order to tackle head-on the threat of piracy and to stem the disturbing societal trend of illegal activity online by students of all ages. That is why Dan Glickman has established a new enterprise within the MPAA called External Affairs & Education. This new department, which I am honored to head, is dedicated to working with educators, administrators and student leaders to affect behavior and policy.

Since the establishment of this new department within MPAA, I have been spending a good bit of my time on the road, traveling to a dozen campuses and convening face to face meetings with administrators and students. Dan Glickman will also be doing a speaking tour of college campuses. The chief goal of these sessions has been

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to learn more about what universities are currently doing to address this issue of piracy. Truly, we are just at the start of the MPAA university initiative, so it is somewhat premature at this point to gauge success. However, as we get farther along into it, I would welcome the opportunity to report back to the Subcommittee about the successes we do achieve, and any ongoing obstacles we face.

Even at this early stage, however, it is clear that there are a range of measures available to universities today that can significantly reduce piracy on campus. This emerging set of what the MPAA would call "Best Practices" provides a roadmap for administrators to follow in order to meaningfully impact the problem of network abuse and illegal copyright theft. I'd like to use the remainder of my time to share with this Committee what we have discovered and what we would recommend university administrators adopt to impede their students' illegal activity via campus networks.

Our suggestions focus on four areas in which schools have taken action: (i) network filters and other technological measures, (ii) legitimate online services, (iii) education, and (iv) enforcement. Undoubtedly, education and enforcement continue to be important components in any program schools undertake to address piracy. However, experience has shown that the offering of a legitimate online service, coupled with an effective network technology that decreases or, preferably, eliminates illicit peer-to-peer ("P2P") file-sharing traffic, produces the best results for colleges and universities.

TECHNOLOGICAL MEASURES

As you are undoubtedly aware, a significant proportion of piracy on campus is occurring through illicit P2P services, which enable individuals to copy and distribute millions of unauthorized songs, movies, software applications and games. The P2P applications that enable this illegal activity, freely available as downloads over the Internet, are hugely popular at colleges and universities where students have access to extremely fast computing networks.

In the much-publicized Grokster case, the U.S. Supreme Court recently stated that "there is evidence of infringement on a gigantic scale" on P2P systems, and it has been estimated that over 90 percent of the use on these systems is infringing. (Of course, other studies have also reported that pornography, including child porn, and identity theft are prevalent on such systems.) With such a disproportionate amount of illegal traffic on certain P2P protocols (and given the threat to network security and individual PCs from viruses and other malware), it seems entirely appropriate to restrict the use of these illicit P2P systems generally. While prohibiting the use of predominantly illegal P2P applications, universities can still protect and promote the legitimate use of other P2P applications for research and scholarship.

This approach has already been employed at certain universities to extraordinary effect. For example, the University of Florida developed Icarus, a network-based system, that can selectively prohibit the transmission of any information bearing the signature of an unapproved P2P application, and manages adherence to University policies. The Icarus architecture supports other capabilities to address the full range of security management issues including: viral and worm attacks; spyware; and other outbound malicious behavior. All of these can have huge effects on the operation and cost efficiencies of the university network.

Some statistics on implementation of Icarus tell the whole story. In the first year of operation, there were nearly two thousand students that attempted to use P2P systems. They were effectively stopped and reminded online through an educational message that such activity was against University policy. Only 20 percent tried a second time and only 2 percent a third time. As new classes of students were introduced in the next two academic years, these numbers were reduced by 50% and 80 percent respectively. Additionally, the school has received no DMCA infringement notices since the inception of Icarus. Additionally, last year the developers of ICARUS were recognized by the Davis Productivity Awards for their work. The awards are part of a government improvement initiative in Florida and sponsored by Florida TaxWatch. The awards panel estimated that ICARUS saved the University of Florida nearly $500,000 by reducing the flow of illicit P2P onto UF computer networks and automating the notification process when a violation of policy did occur.

While exceptions can be made for appropriate use of such applications, it is not surprising that the school has received very few requests for permission to use illicit P2P systems. Indeed, it is questionable whether such P2P applications are at all necessary (or beneficial) in an academic environment. Faculty and students remain able to share and distribute academic material through such secure and reliable means as websites, FTP, and email. In addition, there are legitimate and licensed

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P2P networks emerging—such as Penn State's LionShare—which are dedicated to, and specially configured for, academic environments.

Should a university not find feasible the implementation of programs such as Icarus, MPAA suggests installing a network filtering system. Rather than prohibiting all P2P or other applications based on a particular protocol, these systems filter out infringing transmissions by matching them against a master database. While these types of applications are content-based filters, this technology is in fact no more intrusive than what most schools are already employing to scan for viruses and other malware.

A third option is to effectively implement a bandwidth shaping tool such as Packeteer. Although limiting the resources available for infringement is always a positive step, the way such technology is being implemented at most schools too often renders the application ineffectual. These schools ratchet down bandwidth allowance during the peak hours of the day, then provide increased bandwidth at night. While this process may indeed reduce infringement to some extent, it unfortunately sends the wrong message that illegal file-sharing is acceptable—as long as it's done at certain times. This is a minor and short-term fix for a much larger and long-term problem. By sanctioning such "windows of infringement," schools do little to discourage students from engaging in piracy (and, of course, fail to impart a sense of ethical behavior and appropriately prepare their students for life after college as moral and law-abiding citizens).

By employing technologies that prohibit infringement-based P2P-networks on campus or at least make it harder for students to infringe on such systems, schools are laying the groundwork for the second component of a proven anti-piracy campaign: the successful implementation of a legitimate online service on campus.

LEGITIMATE ONLINE SERVICES

Adoption and sign up rates of legitimate online music and movie services by students is often highest when the school has first reduced the availability of illegal file-sharing, thus developing the thirst for legal content. Services and schools alike have reported particularly positive results from this staggered approach. (Experience has also shown that it may be unwise to implement both network filtering technology and a legitimate online service simultaneously, as students tend to blame the online service for the cutoff in illegal file-sharing.) Without first addressing the illicit P2P problem on campus, it is extremely difficult for legitimate services to take root. If students have unfettered access to enormous amounts of pirated content, no service—regardless of pricing or content offerings—will be successful in that environment.

Overall, the growth of legitimate online services at colleges and universities across the country has been exceptional. In the past year alone, the number of schools partnering with a legitimate service has grown more than threefold to nearly 70. Services such as Cdigix, Napster, RealNetworks's Rhapsody, and Ruckus offer students a wide array of entertainment content in a fun, safe, and legal way, and help to build a sense of community on campus

Of course, it is true that legitimate online movie services are not yet a compelling substitute for the illegal P2P services. Besides the little matter of price point, no legal online movie service currently has the breadth of selection, new releases, ease of use, and interoperability of the illegal P2P services.

Why is this? Not for a lack of incentive or effort. As for-profit enterprises, MPAA member companies have every incentive to tap the clear consumer demand for online access to movies. MPAA member companies are committed to developing compelling, consumer-friendly online movie services, and each one devotes considerable resources to this effort. The MovieLabs and Internet2 announcements are just the latest evidence of their commitment.

However, in order to protect their huge investments, our member companies must ensure that their services operate in a secure environment. Learning from the experience of the music industry with its initial rollout of legal services, they also know it is critical that the consumer's first experience with a legal service a happy one. Thus, legal services must be out of beta and fully ready for mass consumer adoption before they are rolled out widely.

EDUCATION

Obviously, education is an extremely important component of any anti-piracy campaign. Colleges and universities are in the best position to inform students of the importance of respecting copyright and valuing the creative effort invested in copyrighted works. Further, as creators, developers, and owners of intellectual property themselves, colleges and universities have a huge incentive (and responsibility)

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to instill in their students such respect and values. The following are some examples of steps schools can take toward educating students about illegal file-sharing and copyright infringement generally:

- Institute Acceptable Use Policies that clearly outline the appropriate use of school resources. Such policies should illustrate unacceptable behavior, including illegal file-sharing, and provide details on penalties imposed for failure to abide by such regulations. A comprehensive policy, however, is only as useful as it is accessible; administrations should conduct surveys or otherwise ensure that students (and others) are able to find them, including on the school website.
- Include information on copyright, piracy, and illegal file-sharing in orientation materials.
- Inform parents, through letters and at orientation, of the seriousness of copyright infringement and the penalties imposed, both legally and academically, for violations. Encourage them to discuss the risks with their children.
- Require students to pass a quiz about P2P and piracy before allowing access to the school's computing network. This educates the student and provides documentation negating any claim of lack of awareness.
- Engage students by incorporating discussion of illegal file-sharing on school websites and radio stations, and in papers and classrooms.
- Launch pervasive and visible anti-piracy campaigns using posters, brochures, banners, videos, fliers, etc.
- Send students periodic emails directly from the President/Provost/Dean to remind students that the school takes copyright infringement very seriously and to indicate the seriousness of any offense.

While it is indeed beneficial to offer an in-depth look at copyright, P2P, and illegal file-sharing, the first step in any educational campaign is to express concisely and unequivocally that copyright infringement, through physical or online piracy, is illegal and simply wrong. The U.S Supreme Court in *Grokster* not only clarified its *Sony Betamax* decision, it voiced a very clear message to users of the Internet: theft of intellectual property is wrong, whether it takes place by stealing a physical copy of a movie from a video store or by stealing a movie in cyberspace. As Justice Breyer said in his concurring opinion, "deliberate unlawful copying is no less an unlawful taking of property than garden-variety theft."

ENFORCEMENT

As with any education campaign, it is necessary to ensure adherence to rules and regulations through consistent and meaningful enforcement measures. The administration should remind students that entertainment and other content industries have sought to enforce their copyrights through lawsuits against students and other individuals. Students clearly are not immune to legal action, and this awareness is reflected in the many steps taken by schools to curb piracy on campus, as well as in the overall change in attitude of administrations and students alike. Yet, there undoubtedly remains a feeling by some students of "safety in numbers" inherent in a nationwide campaign. The threat of disciplinary action by schools, however, resonates locally and can quickly diminish the sense of security from enforcement (and anonymity) mistakenly felt by students.

We are not suggesting that enforcement is solely the responsibility of these institutions. In addition to bringing action against theft enablers such as Grokster, our industry has also sued individuals engaged in copyright theft. We have also pursued those using I2Hub, a pirate file trading network catering exclusively to university students. This "darknet" system took extraordinary steps to exclude individuals from outside of university networks in order to frustrate enforcement efforts by rights holders. However, our investigators were able to learn a great deal about this phenomenon. For example, on April 11 at 4:23 p.m. EST, there were 7,070 users connected to I2hub sharing 99.21 Terabytes of content, enough space for 99,000 movies! As you can see, this closed network of activity can inflict a great deal of damage. I raise this particular form of piratical activity to demonstrate that there are unique areas where we do need the university networks administrators to be particularly aware and vigilant. The scale and scope of illegal activity within this campus-linked arena is significant.

I would like to add that school-wide Acceptable Use policies regarding online piracy and the appropriate use of school resources are not merely for the benefit of copyright owners. Such rules and regulations, just as with those regarding hacking and other violations, safeguard the security and integrity of the school's computing

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system. Illegal file-sharing applications and illicit P2P networks threaten such systems with increased bandwidth costs, as well as with malicious viruses, worms, Trojan horses, and spyware.

Students should understand that there are extreme repercussions for violation of these policies. Accordingly, schools must be diligent in learning of such infractions and in carrying out swift and appropriate punishment. Most schools take a tiered "three strikes" approach:

- *First offense:* Remove the offending computer from the network until the student complies with any obligations and understands the repercussions for further violations. Some schools require the student to talk to a University administrator before network access is restored.
- *Second offense:* Students lose network access for a certain period of time. Some schools are increasingly imposing fines.
- *Third offense:* Students usually permanently lose all network access privileges and must report to the Dean of Students or Judicial Affairs for formal disciplinary proceedings. While rare, some schools have suspended or even expelled students for third offenses.

Of course, enforcement measures vary widely from school to school. For example, Harvard University has stated that it will terminate a student's network access for one year upon a second offense. Students at UCLA will be summoned to the Dean of Students after their second offense. In any case, experience has shown that recidivism is rare at schools with well-defined and strongly-implemented policies.

It is important to note that the model enforcement policies described above only work when a copyright owner is able to find an infringement taking place and notifies the university. And, in most cases, copyright owners will not be able to find all infringement on campus. While setting out and implementing a strict enforcement program is important, it is the application of effective technical measures that can best stop the vast majority of piracy before it takes place. This reduces the burden of processing potentially dozens of DMCA notices and directly targets the problem of student piracy on university networks.

We believe strongly that universities taking these measures will significantly reduce the level of illegal activity taking place via their networks by students under their charge.

While I know today's session is devoted to a discussion of college campus piracy, I think it is worth noting that the MPAA is also working diligently to reach and educate students at the secondary school level as well as educating parents of school-aged children. We are working with well-respected Internet safety organizations such as WiredKids and iSafe to raise awareness and understanding of this issue to the emerging generation of computer users so that, hopefully, when they do arrive on the campuses of this nation, they will be better equipped to understand and adhere to the rules of the university and the law of this land.

I thank the Chairman, the Ranking Member and all Members of this committee for holding this hearing. I know that if I were to ask anyone in this room to name their favorite film, a lively conversation would begin. Such is the love of this uniquely American art form and all the more reason that we all have a stake in its continued health and survival as well as the health of all of the creative industries from music to books to software. The stakes are very high, not just for those who have the privilege of working within these industries but to the overall economy of this great nation.

Mr. SMITH. Thank you, Mr. Taylor.

Mr. Dunkel.

TESTIMONY OF NORBERT W. DUNKEL, DIRECTOR OF HOUSING AND RESIDENCE AND EDUCATION, UNIVERSITY OF FLORIDA

Mr. DUNKEL. Thank you, Mr. Chairman, Ranking Member Berman, and distinguished Members of the Subcommittee. Good morning, and thank you for the opportunity to appear before you today. I will provide you information regarding the education of college and university residence hall students, stewardship of our technological resources, and an update on a very successful software program to mitigate P2P file sharing.

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First, I want to take us back just a few years when we lived in our college or university residence hall. You will remember coming to college with one suitcase, a box, perhaps a piece of carpet, a radio—and someone had the typewriter. Today, our students are bringing color TVs and stereo DVD players, refrigerators and video game systems, desktop computers and laptops, along with their Blackberry, iPod, Nano, Razor cellphone, and a lot of clothes.

It is this technology that they use to communicate, to study, to receive entertainment, and to research. Today it's more important to plug the computer in before they plug in their refrigerator.

We now have over two million students living in residence halls on campuses in the United States. One of the greatest additions to campus life in recent years is the high-speed Ethernet connection and wireless environments. These connections are used to support the institution's mission by allowing students access to online classes or class syllabi, signing up for classes, replaying video classes, and the like.

We are seeing connection speeds that only seven or 8 years ago were the slow dial-up modems, to speeds now at 1,000 megabits or a gigabit connection. As a comparison with the dial modem, it would take a person about 29 hours to download the 2-hour movie "Star Trek." With a gigabit connection, it takes about 6 seconds to download that same movie. Downloading music files are inconsequential at that speed. The speed and efficiency is tremendous, and will only continue to gain in the future.

In the housing profession, we know we have a captive audience. Most of the first-time-in-college students will live in on-campus residence halls. We have an opportunity to educate our residence students as to the acceptable use of their computer and the network.

We also have a duty to be good stewards in maintaining our technological infrastructure. A colleague and I found that 92 percent of institutions with high-speed connections actively or passively educate their students. Some institutions, like the University of Delaware, require students to take a responsible computing exam before they can obtain a network ID and password. The University of Hawaii in Moana has residents sign for a handbook accepting responsibility for reading and following the rules contained within.

At the University of Florida, residents register their computer online and electronically sign that they have read, understand, and will abide by the policies governing acceptable use. We know that for some students reading the policies is all they'll ever need. These students will accept the policies and make no attempt to circumvent policies. For other students, we need to be more active in our oversight and education.

To be good stewards of our technological infrastructure, my staff developed software to serve as a new network management program. We had to develop this software because the network could no longer support the academic needs, due to high peer-to-peer volume. One tool available through this program mitigates illegal peer-to-peer file sharing, while continuing to simultaneously educate students; all while maintaining a network service free of illegal copyright sharing behaviors.

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Before we turned on the Icarus program on October 1, 2003, we were using 85 percent of the upload bandwidth of the entire University of Florida pipeline. When Icarus was turned on, we immediately dropped 95 percent of our impact on the upload bandwidth, because we immediately stopped 3,000 students illegally sharing copyrighted music. Perhaps amazingly, we saw an increase in download bandwidth, because students were migrating to legitimate network sites, such iTunes or streaming radio. Since implementing Icarus, we have not received a DMCA complaint.

We wanted first-time-in-college students to understand when they arrive on campus and move into the residence hall a new level of personal behavior and responsibility on the use of their computers and Internet would be expected. Most students arrive on campus having unabated access to the network, no knowledge that they need to install virus protection; and they allow anyone to use their computer with their password. The education taking place on campuses stresses that students need to take responsibility for their computer and the use of their computer.

With me today is Mr. Rob Bird, the architect of the Icarus software platform, and Rob is also available to answer any technological questions surrounding Icarus. Thank you.

[The prepared statement of Mr. Dunkel follows:]

PREPARED STATEMENT OF NORBERT W. DUNKEL

I want to thank you for the opportunity to appear before the Subcommittee on Courts, the Internet, and Intellectual Property to provide you information regarding the education of resident students and a new approach to mitigating Peer To Peer (P2P) file sharing. With me is Mr. Rob Bird the architect of the Icarus software platform.

There are over 2 million students living in residence halls on campuses in the United States. Today, first year students are moving into residence halls where suites and apartment style living is becoming increasingly available. There exists greater studying and recreational facilities; contemporary dining accommodations; and larger rooms with more storage to name a few. However, one of the greatest additions to residence halls has been the high speed Ethernet connection.

The Ethernet connection in residence halls serves as its primary purpose to support the academic mission. Many institutions, including the University of Florida, utilize this high speed residential connection for on-line classes; accessing on-line services (i.e., class registration, room sign-up, ordering class textbooks, etc.); replaying video classes; accessing class syllabi; working on group projects, and the like.

We are seeing connection speeds that only seven or eight years ago were the slow dial up modems to now 10 MB, 100 MB, or 1000 MB (1 Gigabit) speeds. As a comparison, with a dial up modem it would take a person about 29 hours to download the two hour movie, *Star Wars*. With a Gigabit connection it takes about 6 seconds to download that same movie. The speed and efficiency of this technology is tremendous and will continue to gain in the future.

In the housing profession and as a member of the Association of College and University Housing Officers—International, we have two duties regarding the data connections we provide to students in residence halls. First, we have a **duty to educate our resident students as to the acceptable use of their computer and the network. Second, we have a duty to be good stewards in maintaining the technological infrastructure** that we provide students in the residence halls.

EDUCATION

In educating the resident students, we know many of our housing operations across the United States have integrated the academic community within the residential setting. Institutions have residence halls with live-in faculty, "smart" classrooms, faculty offices, space for tutoring, space for academic advising, and the like. We see science-based (i.e., engineering, math, etc.); education-based (teaching, etc.); and fine arts-based (i.e., architecture, dance, theatre, etc.) residentially-based academic communities. These types of arrangements and others lead to increased grade

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points for residents, increased graduation rates, increased respect for faculty, and increased psychosocial development, to name a few. The education of our students does not only take place in the classroom environment. The classroom environment is now in the residential setting.

Accompanying the residential academic environment is the need for housing operations to assist in the education of resident students on acceptable uses of the technology available to them. In an on-going study (J. Haynes and N.W. Dunkel, 2004), we have found that of the institutions surveyed with high speed connections in residence halls, 92% actively or passively educate their residents on the acceptable use of their computer and the Internet.

There exist a number of different approaches to this education. The information that is shared with residents may be as simple as defining terms and providing answers to frequently asked questions. The information may provide a general overview of the various aspects of a network and computer usage. At the University of Delaware students must take a responsible computing exam before they can obtain a network ID and password. The exam covers copyright resources, computer security, spam and harassing e-mail, bandwidth measurement, and commercial and charitable use. At the University of Hawaii in Manoa residents sign for the handbook accepting responsibility for reading and following the rules contained within. At the University of Florida residents register their computer on-line and electronically sign that they have read, understand, and will abide by the policies governing acceptable use.

We know that for some students reading the policies is all they will ever need. These students will accept the policies and make no attempt to circumvent the policies. For other students we need to be more active in our oversight and education.

STEWARDS OF TECHNOLOGY

Housing professionals must be good stewards of the technological infrastructure provided to students. The information that follows provides a summary of the Icarus software platform developed by Mr. Rob Bird.

Introduction

The University of Florida Department of Housing and Residence Education's Mission Statement is to provide well-maintained, community-oriented facilities where residents and staff are empowered to learn, innovate, and succeed. As staff worked to develop a software program to mitigate P2P file sharing, discussion continued on how to simultaneously educate resident students while maintaining a network service free of illegal copyright sharing behaviors. This was a daunting task as most first year students arrive to campus having practiced P2P file sharing at home during their high school years. According to students, during high school years very little education on illegal file sharing was provided either by their high school or by their parents and student behavior remained unchecked.

University of Florida housing staff wanted resident students to understand that when they arrive on campus a new level of personal behavior and responsibility on the use of their computer would be expected.

Icarus

Described as "an extraordinary success" (Sherman, 2004), Icarus is a massively concurrent, distributed processing engine designed to provide the power of collaborative grid computing to the enterprise network management and security space. This patent-pending system is based on the Java language. The Icarus engine has been built to act as an open-standards middleware processor, allowing applications, libraries and scripting languages to be harmoniously coordinated together to accomplish tasks across the enterprise or federation. It has extensive applications in distributed computing, security, collaboration and management. By applying this system, a comprehensive net has been constructed at the University of Florida to eliminate P2P and residential 'Dark Nets,' while comprehensively addressing the educational needs of the students. In addition, Icarus integrates with the University's Judicial Affairs, trouble ticket and network management systems, solving all facets of the management problem. Icarus is currently licensed to Red Lambda Software *(www.redlambda.com)* by the University of Florida.

Department of Housing and Residence Education Network Architecture—Technical

The University of Florida Department of Housing and Residence Education computer network (DHNet) consists of Cisco switching equipment, and supports standards-compliant TCP/IPv4-services for its residents. The core network consolidates edge switches via Gigabit Ethernet connections. Each resident is supplied with a 1 Gigabit Ethernet connection, monitored and regulated by Icarus. Virtual LANs are

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deployed on a per-building basis to provide proper segmentation and encompass multiple levels of access granularity (Table 1). Specific services are subsequently provided to the resident depending on the source of access.

Table 1

Access Level	Requires Registration ?	Destination Restrictions?	Routed?	TCP/IP Services Provided?	DHNet web site role	Notes
Guest	No	Yes	Yes	Yes, private IP addressing	Network registration, computer configuration support and policy education	Allows access to HRE registration & information sites only
Restricted	Yes	Yes	Yes	Yes, private IP addressing	Judicial policy violation handling. Automatic recognition of restricted user	Allows access to University resources only
Quarantine	Special	Yes	No	Yes, private IP addressing; DNS redirection; local web services via 802.1q trunks	Distribution of tools, patches and updates. Automatic recognition of quarantined user	Allows access to local network quarantine resources
Black Hole	Special	Yes	No	No	None, no local or routed access provided	Provided to leave systems actively connected for security analysis
Normal	Yes	No	Yes	Yes, public IP addressing	Network information, user forums, security, network policy and configuration information	Typical user
Wireless Guest	No	Yes	Yes	Yes, private IP addressing	Wireless network registration, computer configuration support and policy education	Allows access to HRE registration & information sites only
Wireless Restricted	Yes	Yes	Yes	Yes, private IP addressing	Judicial policy violation handling. Automatic recognition of restricted user	Allows access to University resources only
Wireless Quarantine	Special	Yes	No	Yes, private IP addressing; DNS redirection; local web services via 802.1q trunks	Distribution of tools, patches and updates. Automatic recognition of quarantined user	Allows access to local network quarantine resources
Wireless Normal	Yes	No	Yes	Yes, public IP addressing	Network information, user forums, security, network policy and configuration information	Typical wireless user
Terminated	No Service	No Service	No Service	No Service	No Service	Last resort

Development and Deployment of Icarus

Beginning in December of 2002, the Department of Housing and Residence Education Network Services group initiated the development of a system to automate the enforcement of its computer security policy. The system that was created was known as Icarus.

Icarus was designed to meet three primary design goals. First, to create a fully-distributed processing framework that allows for the collection of information from a variety of disparate sources so that the data can be evaluated and acted on in a unified fashion. Second, to create a system that allows for the real-time identification, containment, and education of managed network users while striving to minimize the impact on their academic use. Third, to contribute to the community software environment through the advance of internet standards and technologies using BSD and GPL-style licenses.

Initial development of Icarus focused on three core tasks. First, it was necessary to build a system for identifying users and tracking hardware movement within the network while allowing for the flexibility required of a residential system. The initial system comprised three levels of access, and did not include a registration process for residents. While this system was adequate for private residence port authorization, it did not adequately support the use of public access ports, accommodate Icarus' protection on wireless networks, or provide a way to handle the containment

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of security outbreaks. This solution was also deemed inefficient due to its heavy reliance on SNMP. Later, this system was expanded to ten levels of access to address these additional operational requirements, and moved to leverage VMPS for superior access management. At this time, the Icarus team released the first database-backed VMPS server to the open-source community. User registration was also added to more positively establish authorization without the use of network logon technologies, which are often cumbersome in "always-on" residential environments. Second, development was focused on containing P2P application use as an example of Icarus' ability to detect and react to complex network management situations. By combining data from a variety of tools, it became possible to take an automated multi-factor approach to application recognition. This approach allows Icarus to detect so-called "secure" encrypted P2P applications, and quickly react to both changing applications and policy requirements. This flexibility is accomplished by removing the reliance on a single application or appliance's ability to fully identify and contain unacceptable P2P use, virii, malware and other security challenges. Third, development was focused on creating an extensible GUI interface to allow the management of large Icarus 'clouds' or collections of cooperating Icarus peers. This system makes full use of open standards, and supports a federated management architecture to allow organizational collaboration without exposing organizational concerns.

EDUCATION OF RESIDENT STUDENTS

The education of resident students takes place passively and actively. The passive educational program includes:

(a) Distributing an acceptable network use brochure during the check-in process. This brochure contains information on the overview of the housing network; the fact that housing aggressively enforces its ISP policies; briefs the student on servers, copyrights, and the Digital Millennial Copyright Act (DMCA); provides information on the housing network monitoring and service restriction process; provides answers to frequently asked questions; and information on how student computer behavior is a part of the University of Florida Student Code of Conduct.

(b) The placement of informational stickers by each housing data port. These informational stickers provide instructions to resident students on how to register on to the housing network.

(c) The residence hall staff have participated in a training session prior to student check-in. This training session provides them basic information to be able to answer many of the student questions regarding the housing network.

(d) The UF DHNet web site contains all the information regarding HRE Network Services. Students can read the information prior to their arrival at the University of Florida to understand what is expected and necessary when they register on to the housing network.

The active educational program designed by HRE is powered by ICARUS and supported by the UF DHNet and HRE websites. When Icarus detects user activity deemed unacceptable by policy, an appropriate series of actions are performed. In the case of a violation of the HRE P2P policy, for example, the user in question is sent a notification pop-up message to their machine, a notification email to their official University email account, and all the computer systems owned by that resident are promptly restricted to campus-only network access (Table 2). This restriction is in effect regardless of where the resident physically goes within the HRE network, preventing abuse by those using public access ports. Simultaneously, an entry is created in the DHNet violation system, HAMMER. A snapshot of the user's activity, including all evidentiary data, is then added to the database, and correlated with past violations (if any). Residents are required to then visit the DHNet website in order to restore their access. When the resident visits the website with any of their computers, the page automatically recognizes them, and presents the resident with the list of violations. Instructions are provided for remedying each violation, and then a violation-dependent policy presentation is provided. Student violators are then presented with the terms of their restriction. It should be noted that the time counter for restriction does not officially begin until they have signed the on-line form with their University ID (access was still restricted before, however).

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Table 2

Violation Level	Duration of Campus-Only Restriction	Additional Requirements for Restoration
1*	0 – Immediate restoration following completion of educational presentation	None
2*	5 days	None
3	Indefinite	Meeting with the IRE Coordinator of Judicial Affairs
*Special Handling Exception – Any resident with a prior DMCA complaint is automatically escalated to level 3 if the violation is sharing related in any way. Violators with new DMCA complaints are automatically level 3 for the purposes of ICARUS.		

Residents who ignore the restriction, and take no action, automatically have their network access terminated after 10 days.

Similar action scenarios exist for a variety of situations, from virus/worm quarantining, to the active notification about available operating system patches, to the active control of malicious activity.

IMPACT OF ICARUS

The impact of Icarus on P2P usage, and more importantly, behavioral trends, has been immediate and profound. The recidivism rate and first-offender rates have dropped dramatically, and exhibited a downward trend, despite an increased number of residents over time, and the impact of mass quarantines due to Internet worm outbreaks. Furthermore, fewer residents even attempt to use P2P applications, showing Icarus' unique ability to sidestep the 'P2P arms race' and change students' perception by consistently integrating comprehensive education with enforcement (See Table 3).

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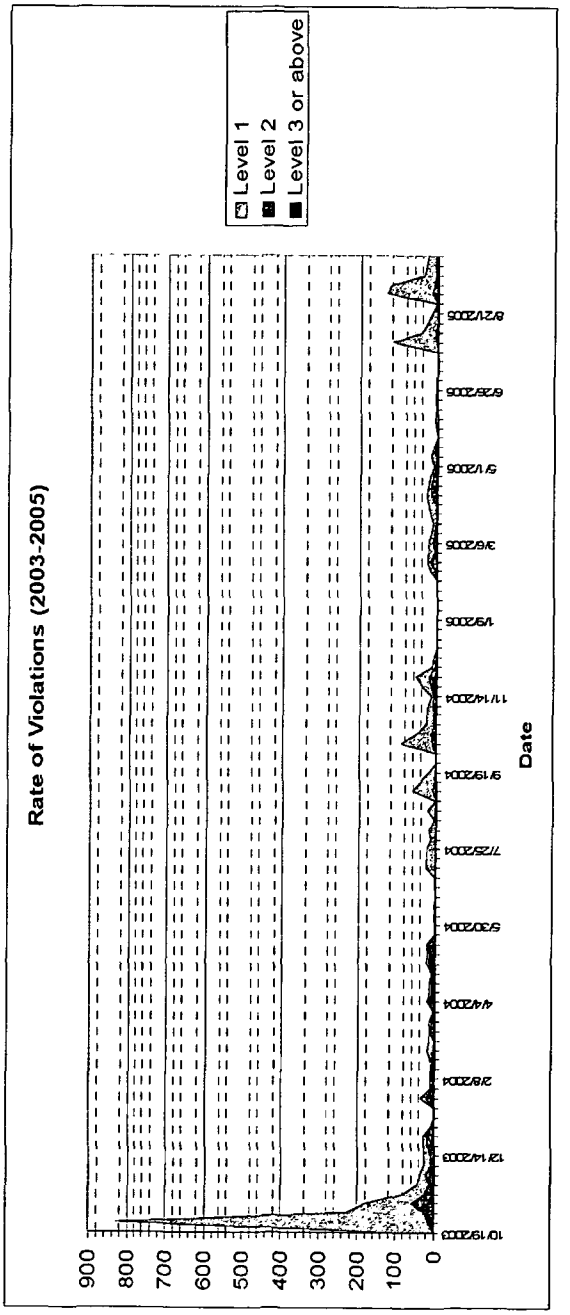
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Table 3

	2003-2004	2004-2005	2005-2006
Level 1	2052	948	342
Level 2	415	245	42
Level 3	56	44	10
TOTAL	**2523**	**1237**	**394**

Offender Rates*		**Recidivism Rates***	
Pre-Icarus			
% of residents using P2P prior to Icarus (Spring 2003)	54.67%		
Post-Icarus			
% of total residents commiting a 1st Offense	27.64%		
		% of 1st offenders that commit 2nd Offense	21.01%
% of total residents commiting a 2nd Offense	5.81%		
		% of 2nd-time offenders that commit a 3rd Offense	15.67%
% of total residents commiting a 3rd Offense	0.91%		
		% of 1st offenders that commit a 3rd Offense	3.29%

* Does not include 2005-2006 school year in progress to avoid skewing the percentages to lower values. Based on 12090 unique residents since Fall 2003



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We are pleased to provide you with this information. Housing professionals do have a responsibility to educate resident students on the acceptable use of their computers and the network. There exists numerous opportunities for students to use technology with legitimate purposes. Educating students to these purposes is part of our responsibility and stewardship.

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Mr. SMITH. Thank you, Mr. Dunkel.
Mr. Raduchel.

TESTIMONY OF WILLIAM J. RADUCHEL, CHAIRMAN AND CHIEF EXECUTIVE OFFICER, RUCKUS NETWORK

Mr. RADUCHEL. Thank you, Mr. Chairman, Ranking Member Berman, other Members of the Subcommittee. On behalf of our employees, investors, content and distribution partners, and the creative talent to whom we pay royalties, I thank you for the opportunity to be here today to talk to you about the legal market for music and media services in campuses.

In the last year, we've seen a marked increase in demand from institutions. It's gone from trial to adoption. Schools are buying this as a regular part of their operation. Where the institutional support has included a blanket purchase agreement so that all students have access to the service from the beginning, we've generally been able to get adoption rates over 60 percent, some as high as 85 percent. But where the schools have chosen instead to tell the students that they must opt in for the service on an elective basis, the entire industry has faced significant challenges in getting students to move from what they call the "free model."

Music and movie downloading is not just about an individual activity. It's also a community activity that is very much about sharing and expressing preferences with other students. The experience is therefore a lot richer when all the students are there from the beginning as part of the community; and less rich when the students have to join one by one, and the first students do not see much of a community, obviously, because there aren't many people there.

As you reported in the report that you read in your initial remarks, Mr. Chairman, there has been a great increase in the number of schools.

[Sound of buzzer.]

Mr. SMITH. You can ignore that.

Mr. RADUCHEL. Ignore that? Okay. Our investors have invested more than $20 million in capital. Our students now have access to over 1.2 million tracks of music, which is about what's available legally, and a bouquet of video content that changes daily. Subscribers can take the music on portable players, as long as they are the right form. And we just added an exciting roster of films and TV from Warner Brothers, one of the members from the MPAA.

So we've been getting support from lots of quarters. We found a path to let students share both their experience and their preferences among each other. They want to share their media with friends. They want to use people as the way to find media, because

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in a 1.2 million track library searching for a title isn't nearly as interesting as seeing what you like, or the person next to you likes, or your neighbor down the hall. So we've tried to support that along the line. We've tried to understand student behavior.

But we all face four major obstacles in the legitimate services area. Two years ago, our research showed that students arrived on campus and learned about file sharing in the first week. It happened very quickly, but it happened on campus. Today, with much greater penetration of broadband and with faster computers and bigger hard drives, students frequently arrive on campus today with their music library already built up illegally, and frequently with a portable player already filled with that illegal music. Obviously, that creates a challenge to start selling them a legal service once they arrive on campus.

Secondly, as the report you mentioned in your opening remarks cited, more and more of the file sharing now occurs within the campus, rather than to the campus from the Internet. The Hartford Courant had an editorial recently we think we copied, which was talking about, with anonymous interviews, how students use DirectConnect, myTunes, Redux, and ourTunes to copy music on the campus. We attached an editorial from the Diamondback at the University of Maryland about what students do there. So the copying has moved onto the campus, and it's much less, I think, to and from the Internet.

When subscription music libraries number in the thousands of tracks—and that's what the students have—the only economic option that's viable is a subscription service for $15 a semester. That, students can contemplate. Buying 5,000 tracks is something students are not going to go do. But there are technological restrictions that make subscription services feasible [sic].

At one of our schools, the school mistakenly identified us as the reason that they blocked peer-to-peer with a service similar to Icarus. Our employees on campus that day had to turn their teeshirts inside out and leave the campus, because they were being abused so strongly by other students. The students do not like restrictions. They want this content, you know, for free, without restriction; which I guess anybody could want. But opinion is not yet there.

And finally, as has been discussed at earlier hearings, there's a lot of complexities about getting content. It's very hard to explain to a student why a song is only available for subscription download, is not available for permanent download, or was available last week but isn't there this week. I understand all the reasons for it. I've been there. But the fact is, it makes it very hard to market legitimate services against all of that complexity.

How can Congress help? I think there are two things that Congress can do. The first is, I believe Congress should look at creating a criminal and civil safe harbor for universities that get legitimate services operating on their campus, against the copyright liability they share, for the internal copying that occurs on those networks. This would do two things. This would reward the universities with immunity that are driving for legitimate adoption, and it would put on notice the other institutions that are not.

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And secondly, as you discussed, I believe modernizing the music laws is really critical to making online services successful. It's just to hard now, and there's too much complexity in getting it done.

Thank you very much for the opportunity to be here today.

[The prepared statement of Mr. Raduchel follows:]

PREPARED STATEMENT OF WILLIAM J. RADUCHEL

INTRODUCTION

Mr. Chairman, Representative Berman, and Members of the Subcommittee:

On behalf of Ruckus Network's employees, investors, our content and distribution partners, and the creative talent to whom we pay royalties, thank you for the opportunity to speak with you today about the emerging college and university market for legal online music and media services. Thank you also for your attention to this marketplace, because without the subcommittee's vision I'm not sure that campus leaders and industry would be collaborating so intensively to educate students about the value of America's creativity, and to promote means of simultaneously enjoying and respecting creators and their work.

STATE OF THE LEGAL DIGITAL MEDIA MARKETPLACE

Formed in 2003 by two graduate students, Ruckus quickly developed strong partnerships with media companies of all kinds and attracted top technical talent to put together an innovative product. Like all industries that promote and serve transformative dynamics, Ruckus and our competitors in the industry have hit speed bumps along the path to success, but in the last year we have seen a marked increase in demand from institutions. Where institutional support has included a blanket purchase, we have been able to gain significant adoption, in excess generally of 60%. However, where schools have chosen an "opt-in" model, where the students have to individually adopt and pay for the service, we, and we understand our competitors, have all faced significant challenges in moving students away from what they call the "free" model.

For this demographic, music and movie downloading is not just an individual activity: it's a community activity that is very much about sharing and expressing preferences with other students. To that end, the experience is much richer when there is critical mass of people using the service and getting the full benefit of it (e.g.; legal filesharing and social networking). By definition, we can offer these services only among subscribers. So it becomes clear that where there's critical mass—e.g., at blanket purchase schools where it is available to everyone—there is quicker adoption and therefore a greater experience because there is a real community behind it.

The good news is growing demand from colleges and universities. Last year, our industry served tens of colleges and universities, but mainly on a trial basis. We see more favorable articles about our industry in the media, and perhaps most importantly, administrators from schools are calling us to ask for sales information. I think all of the legal digital media services would agree there has been growing interest in the market over the past year.

Our investors have invested more than $20 million in capital so far and will invest more. Our students have access to over 1.2 million tracks of music and a bouquet of video content that changes daily. Subscribers can take their music with them on any compatible Microsoft *Plays for Sure* subscription music players. We added an exciting roster of films and TV content from Warner Brothers and a unique partnership with Audible, offering price breaks on audio books for our subscribers. In short, there has been significant growth in the content we're offering our customers.

And Ruckus has found a path—technically—to deliver that content in a style that is much more in keeping with the way students want it. Specifically, they want to share their media with friends and use their friends to find media. When you think for a moment about how unrealistic it is to search or browse a million plus track library, you quickly understand why many students prefer searching by people more than by song. Ruckus customers can send playlists to friends, make media recommendations, and broadcast to the campus their personal tastes. This is very motivating for this demographic. Finally, we added the capability to quickly share music inside the dorm on the university network—legally.

Today, I believe the industry is making progress in balancing the needs of consumers with the needs of artists and the respect required of copyright law. And I believe the marketplace is beginning to realize the importance of this balance.

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However, all legitimate services continue to face major obstacles. Two years ago, our research showed that students learned about "file sharing" when they arrived on campus. Today, increased broadband penetration at home and much larger harddrives on ever cheaper computers means that students frequently arrive on campus with their music library already built and often a portable player. Persuading them to change to legitimate service is clearly a greater challenge.

In addition, more and more file sharing now appears to happen inside the university network where it is very difficult to both detect and block. The *Hartford Courant* covered this in depth just a few weeks ago. Software such as DirectConnect, myTunes Redux and ourTunes allows students to easily copy music on their campus network. It is this functionality we recreated legally within our service.

When student music libraries number in the thousands of tracks, only subscription services seem economically feasible as a legitimate alternative for students on student budgets. However, the technological usage restrictions and controls required to make it economically viable for the music owners are greatly disliked. And our usage restrictions can have other unfortunate impacts. At one of our schools last year, when the school mistakenly identified us as the reason for their separate action to block peer-to-peer services on their network, our employees had to turn their t-shirts inside out to avoid further verbal abuse. We have pushed these limits as far as we know how, but we still cannot support all portable players or allow students to mix or mash the music. A June 16 editorial (attached) in the University of Maryland student newspaper complaining about one of our competitors—but in truth they could have same complaints about us—shows well where much, maybe most, student opinion lies.

Finally, all legitimate services face constraints and complexity in obtaining content. It is very difficult to explain to a student why a song is not available at all or is only available for subscription or purchase download but not both, or is not available today but was last week. There are complex legal—or music publishing legal—reasons for all of these, but they confuse students and encourage them to rely on illegal sharing. Moreover, there is a lot of so-called gray content (a recording made by someone at a live concert, for example) that is unavailable on legitimate services. In fact, Congress recently enacted severe criminal penalties for sharing prepublication copies of copyrighted works, precisely the most sought peer-to-peer content.

HOW CAN CONGRESS HELP?

I have been a student, graduate student, teacher and administrator. After leaving the university, in my business career, I have been on both sides of the technological *progress versus copyright protection debate. As a citizen, I find it frightening* that we are raising a generation with so little respect for fundamental intellectual property rights. A friend of mine, a senior university administrator, was widely attacked on his campus for observing that students who illegally acquired media were but a small step away from plagiarism, but he was right.

Congress should consider creating a civil and criminal safeharbor for colleges and universities for filesharing inside their networks for those institutions where 80% or more of the students utilize legitimate music and movie services. No institution can police all of its students all of the time, but institutions that achieve meaningful adoption of legitimate services should be rewarded with immunity. At the same time, those institutions that knowingly tolerate widespread filesharing on their networks should continue to be on notice that it must stop.

Congress must modernize music licensing laws to make it easier for services such as ours to offer students legally what they want. Your hearings have demonstrated this need; it is now time to legislate a solution. And device interoperability, as you know, remains an obstacle for legal digital media subscription services to compete effectively.

On behalf of Ruckus and the many other stakeholders in our industry, we want to express our appreciation to the Committee for your determination to allow legal digital media services to compete fairly in the marketplace.

Thank you.

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ATTACHMENT

Staff Editorial: Digital debacle

The university's decision to extend Cdigix's trial does not offer students a genuine alternative to illegally pirated media.

June 16, 2005

When the university announced in March that Cdigix would provide students with free music downloads for a 90-day free trial, officials hoped it would curb the use of Direct Connect to obtain copywrited music files.

As soon as the trial program was under way, students complained about the service's compatibility issues because it was necessary to employ Internet Explorer and a Windows-based computer to even use the program. Those who met the criteria soon realized that files obtained are only usable during the trial period, and the songs couldn't be downloaded onto most portable media players.

This week, the university decided to extend the trial period beyond the original 90 days and will give students the chance to use it through December. And with the extension of service is Cdigix's pledge to make it compatible for more students. The company is working on making the service Macintosh- and Firefox-friendly so everyone on the campus can judge the program's merits.

But why extend the service at all? With few Cdigix supporters, it seems like a shameful waste of money.

Officials cited hectic schedules during exams as a reason for minimal student use, but what are the use statistics for Direct Connect? Did its thousands of habitual pirates stop logging on and downloading their favorite albums, software and movies?

Some students listen to music while studying, while others plug in during stress-relieving workouts. But students can't bring their Cdigix music to the library or the gym because of the incompatibility with iPod, the media player that dominates the market. However, Direct Connect offers students genuine portability.

The truth is that piracy didn't stop during midterms, and it certainly won't take a backseat to a limited file-sharing program. If a final decision is going to be made for spring 2006, why not give students exposure to more than one file-sharing program? Pick a different program, and if it's well-received the university can present it as a realistic alternative to pirated media.

It's vital for university officials to encourage students to legally share files, especially given the stiff fines students at other universities have been slapped with. But continuing to offer Cdigix — particularly with tepid student support — is downright criminal.

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Mr. SMITH. All right. Thank you, Mr. Raduchel.

Before I begin my questions, let me announce—because it will indicate to our witnesses and to the audience how serious we are about trying to reduce piracy on campuses—and that is that in the next few days Mr. Berman and I will be signing a letter to the Government Accounting Office asking them to conduct a study of all the major universities and colleges in the United States; and not just studying to see what their progress or lack of progress has been in regard to reducing this piracy, but I actually want them to rate the colleges and universities.

I don't know if it will be a letter-grade or if it will be a word rating. But I want to move forward with that, so that we can increase the scrutiny and increase the public attention to the piracy that occurs on campuses today.

As I mentioned earlier, we're making progress, but I want to quantify that progress over the course of the next several months.

Mr. Updegrove, let me direct my first question to you. And this really is a follow-up on our earlier conversation before the hearing began. I had asked you if the University of Texas was able to sort of quantify their progress. You said it had been modest, but at the same time successful. And would you elaborate a little bit on how the University of Texas imposes sanctions? You mentioned the one, two, and three strikes. And just very quickly describe that to us.

Mr. UPDEGROVE. We have a three-strikes policy at UT. In the case of a first offense, a permanent record in the student judicial services; in the case of a second offense, service to the network is automatically disconnected and an in-person visit is required with student judicial services. And frankly, we have never had a third offense. We've had only 8 second offenses in the last 14 months.

Mr. SMITH. It sounds to me that would not be modest progress; it would be substantive progress, if you've had no third infractions.

Mr. UPDEGROVE. Well, I should confess that when I talk to my colleagues around the country, third offenses are very, very rare. We believe that there is a prevailing sense that file sharing on the Internet is anonymous, voluminous, and therefore safe. And I think it comes as quite a surprise to people who've been doing it when their identity is revealed and when it's clear that the Internet is not—the Internet, properly managed, is not an anonymous haven for this kind of behavior.

Mr. SMITH. A quick follow-up question. Are you satisfied with the progress that you're making at UT? Or would you consider an Icarus type program? Or do you think you've got sort of what you need in place that over time is going to yield the results we want?

Mr. UPDEGROVE. We think that we have an appropriate balance between controlling the costs of network provision, the behavior on the network, and respect for the privacy of our users. I mean, we think we could eliminate student parking tickets if we banned cars, but we don't think that we want to go that far. We think that an education program, a very well-enforced policy, and bandwidth management takes us as far as we wish to go.

Mr. SMITH. Okay. Very good. Thank you.

Mr. Taylor, you made it clear what you want universities and college officials to do, as well as students to do. Would you elabo-

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rate a little bit more on what MPAA itself is doing, both in regard to bringing lawsuits, and so forth?

Mr. TAYLOR. Well, as Members of this Subcommittee are aware, we have begun a number of actions against both end-users, individual end-users, as well as entities who are building business models around providing unauthorized access to our copyrighted works. We'll continue to enforce these every step of the way. As I mentioned earlier, we're also looking for better ways to protect our works in technological means, to make it more difficult to rampantly borrow, steal, our material.

But I think it's also worth noting—and I neglected to in my opening remarks—to say that we recognize that by the time students get to the university campus there are some behaviors that are, unfortunately, well ingrained with regards to illegal activity online.

So part of what we're trying to do at the MPAA is work with respected educational organizations to reach kids at an earlier age, trying to modify behavior before they get to the college campus. We're working with "Wired Kids," for example, a well known Internet safety organization which now includes piracy as what they call their four "Ps" of concern in Internet safety: privacy, pornography, predators, and piracy. They all go together.

And we're also working, we'll have an announcement shortly with a nationally known education in-school organization to help bring this topic to the forefront for principals, students, teachers, and parents of younger children.

Mr. SMITH. Mr. Dunkel testified a minute ago that you can download a movie now in 6 seconds. Have you seen an increase or decrease in the illegal downloading of movies just in the last few months? I mean, is there any trend that's evident yet?

Mr. TAYLOR. Well—Well, we have this summer. Thankfully, when folks are not on campus there is a down-tick in the levels we're seeing. We've also adopted increased ability in our ability, however, to monitor the landscape. And we are getting regular reports, and we're about to have a new report internally that we'll be evaluating. But sadly, the trending is up. We're monitoring that landscape very regularly and prioritizing which institutions to go to accordingly.

Mr. SMITH. You'll be able to compare this fall, say, to last spring. How does last spring compare to the fall before that? Do you know?

Mr. TAYLOR. Sadly, it's on the uprise. As it becomes faster and easier to do, unfortunately, the behavior continues.

Mr. SMITH. A lot of work to do.

Mr. TAYLOR. Indeed.

Mr. SMITH. Okay. Very good.

Mr. Dunkel, let me squeeze in a last question for you. I happen to think Icarus is a great technological solution. And either you or your colleague who is here, who developed it, can respond to this question. And that is, it seems like such a great solution; why is it more colleges and universities are not using it? Is it just limited to the University of Florida, or is it more widespread use than that?

Mr. DUNKEL. Certainly. It has everything to do with where the product is in the pipeline, and the availability to private and public entities. The company currently is identifying the last of two Beta

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sites, and we're finalizing venture capital for implementation teams on those sites. So within about 30 to 60 days after those sites have been able to use the Beta, then we'll make that product available. So within a handful of months, it'll be available to the open market.

Mr. SMITH. But it's just not available now.

Mr. DUNKEL. Right.

Mr. SMITH. Authority is almost experimental, then?

Mr. DUNKEL. Correct.

Mr. SMITH. Okay. And you would expect widespread use, or at least greater use?

Mr. DUNKEL. We've had over 200 institutions express a strong interest in the product.

Mr. SMITH. Wonderful. I'm not endorsing it. I can't do that. But it sounds like a great product to me. Thank you all.

Mr. Berman is recognized for his questions.

Mr. BERMAN. Thank you very much, Mr. Chairman.

I wanted to just make sure I understand. It's Mr. Raduchel? I thought I heard you say during your testimony or in response to a question that these days, in terms of college students, most of the music they're obtaining illegally is coming from the universities' own internal networks, rather than the Internet. Did I hear you right?

Mr. RADUCHEL. Correct.

Mr. BERMAN. Thank you. You also mentioned that where institutional support included a blanket purchase, we have been able to gain significant adoption, in excess generally of 60 percent.

Mr. RADUCHEL. Sharing is a community experience. So if you don't have everybody in the group, coming in and selling just one service, you can't share any of that music. But if everybody is in the group, then the kids can share the music among themselves.

Mr. BERMAN. I'm curious why it's only 60 percent in that situation.

Mr. RADUCHEL. Well, this is where it——

Mr. BERMAN. It doesn't cost them, right?

Mr. RADUCHEL. It doesn't cost them. We've gotten as high as 85, at a school were the president committed to ethics and said, "I want my students to be ethical." But some kids cannot be weeded away from illegal, or they've already built up—they've already got their libraries. Freshmen are easier to switch than seniors. But we haven't been able to get above 60 to 70 percent, in general.

Mr. BERMAN. Okay. Mr. Updegrove, what can Internet2 do to prevent the network from being hijacked by pirate services like i2Hub?

Mr. UPDEGROVE. Internet2 is a passive transport, and the end component of Internet2 are the 207 institutions. And so I think it's incumbent upon all of us who share the benefits of Internet2 to adopt the four-part strategies that were outlined here: education; bandwidth management; strong policy enforcement; and when appropriate, offering a sound commercial alternative.

Mr. BERMAN. And that implementation will deter or prevent the hijacking?

Mr. UPDEGROVE. Prevention is a difficult challenge, as I'm sure you know, Congressman. The Internet protocols are open. There's

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an enormous amount of technical innovation occurring monthly, weekly, and daily on the Internet. There is, frankly, a worldwide "whack-a-mole" challenge going on, with new protections built one day and new work-arounds built the next. So it's difficult for us to guarantee that we can prohibit illegal behavior. But we're all committed to working on it.

Mr. BERMAN. Mr. Dunkel, you mentioned that using the Icarus program has saved the University of Florida money in the long run. Would it be difficult or costly for other universities to implement Icarus on their campuses?

Mr. DUNKEL. It would not. First of all, it saved the University of Florida about a half a million dollars in unnecessary infrastructure improvements. It saved our operation——

Mr. BERMAN. Because of the reduction of band using?

Mr. DUNKEL. Right. Absolutely. It saved our operation about $2 million. We were able to delay our infrastructure improvements and, during that delay, the cost of that equipment came down $2 million. That was important.

This is a very easy application for other institutions. It's an application where institutions do not have to buy additional equipment. It can be installed on the equipment that they currently have.

Mr. BERMAN. Thank you. And once again, Mr. Raduchel, your testimony points to issues such as the complex music licensing scheme—ah, yes—as one of the barriers to entry with students. We're working on that, sort of. And what are some of the impediments to providing students with access to movies?

Mr. RADUCHEL. Movies, we just did a deal with Warner Brothers which was truly revolutionary in terms of the pricing, giving students, you know, access to movies. But we have to be—the windows that exist, of course, for movie release force us to 3- and 4-year-old movies, rather than current titles. Again, it's trying to match—we're competing against free. So $20 a semester is all we think we can charge students and get widespread adoption.

So now we have to get the movie industry to believe that $20 a semester, shared with them and with all the other costs along the way, makes for an attractive proposition. We got one studio to go along and believe that that's important, to try to get students attached and attracted to having subscription-based movies. But that's certainly—I mean, the movie industry licensing, as you know, is complex, as music.

Mr. BERMAN. Thank you very much. Thank you.

Mr. SMITH. All right. Thank you, Mr. Berman.

The gentleman from California, Mr. Issa, is recognized for his questions.

Mr. ISSA. Thank you. Mr. Raduchel, I guess, if I heard you correctly, you're trying to compete with free. Because you're saying that when the students have to opt in and pay, they don't choose it; and when the university absorbs substantially the cost, 60 percent participate. Did I hear that right?

Mr. RADUCHEL. Roughly, yes.

Mr. ISSA. Okay. One of my challenges is, I don't think that you compete with free and just shift the cost to somebody else, whether it's the university or not. Because in real life, students are going

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to leave and it's not going to be free any more. So that's one of the challenges that this Member faces.

The other one, I guess, is, although I would love to have a $20-a-quarter, or a $50- or $60-a-year annual cost of unlimited movies, it's not very American to say that the value of "Star Wars"—which, by the way, cost me $2.50 in Russia—in Russian. I know you haven't released it in DVD yet, but it is available. And I think I paid retail. You know, I don't want to tell them what the price is.

So I guess Mr. Taylor, representing the studios, is there a number that we're starting to get to for subscription that could provide substantially all of the catalogue—the backlot catalogue, if you will, not the recent releases, but sort of the basis of everything that's ever been on TV? Is that something that is foreseeable, as you see it, coming out of the industry? And I guess I'd direct it to both of you, because one is a buyer and one represents——

Mr. RADUCHEL. That is what Warner Brothers gave us. So the backlog of titles we have available at a very attractive price. So that they do have—you know, there is that. New movies, cost money. New movies, you're going to have to pay on a pay-per-view basis.

Mr. ISSA. Right. But that's one large studio—and granted, a large library. But I guess, do you expect to see several other major studios able to bring that together to where you'd have the entire library.

Mr. RADUCHEL. We're talking to a second big one now. And we hope, if we get that one, we can get a third, and to get more people onboard.

I want to say that in most of the blanket-purchase schools, the student government has agreed to the charge. So there is a charge. It is a collective charge. But it has been done with the students' support. And so that does go into the student fees. So there is an increase in fees that the students see, and they do vote for it.

This is not something that's been imposed, in general, by the administration. So when I talk about blanket purchase, it's because the students have agreed to go along that way.

Mr. ISSA. I guess I'll follow up before I go to Mr. Taylor. When you have—I don't know—nine libraries put together, if Warner Brothers were the model——

Mr. RADUCHEL. Right.

Mr. ISSA.—and their contract with you is none of my business, but if you were to look at it, the unsubsidized amount, the amount to the public—because although today it's dealing to a great extent with universities and peer-to-peer, ultimately the question is if everybody that wants to be able to both have movies to see, download, and put on their Digix players—which are now going to be very available for Christmas and so on—wanted it, what is the subscription fee that you think we would get to? You know, sort of forecasting your business model to the entire United States.

Mr. RADUCHEL. In range, I would say $10 a month for back title. The rates we pay are approximately the same rates that a broadcast television station would pay per head for putting a movie up to be seen over broadcast television. So it's not that we're way off scale. I mean, we're paying roughly the same that a broadcast television station would pay for that same movie.

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Mr. ISSA. Okay. Mr. Taylor, how do you view this emerging technology, particularly as it gets past the university?

Mr. TAYLOR. Well, I would just note that, as a for-profit enterprise, you know, the MPAA member companies have every incentive in the world to provide and take advantage of these new digital delivery means. And I know our member companies are committed to developing new delivery systems and taking advantage of those that are emerging.

That said, like with any business enterprise, we have to make sure they can operate in a secure environment. So they're making, you know, business decisions studio by studio. We just heard about Warner Brothers' recent development. I have no doubt our other member companies are looking at the landscape and figuring out how best to take advantage of it.

The name of the game, when we make a movie in Hollywood, we don't make it just to show on the studio lot. The more folks who can see it, paying a fair and reasonable price, obviously, the better. So we're as excited as anyone by the new technologies that are emerging. And that's one reason we've established things like Movie Labs and joined up with Internet2, so that we can be at the forefront of that movement.

Mr. ISSA. Okay. And just one follow-up, and this can be done for the record. I mentioned the Digix products that are coming out, players, en masse for Christmas. I mean, this is going to be the first year in which there will be—every Circuit City, every Best Buy, and loads of others will all have a large amount of hand-held products. Do you, Mr. Taylor, think that any of these models are arriving just in time to facilitate the legitimate use of these products? Or are they going to take you where MP3 players such as the iPods and so on took the industry of music?

Mr. TAYLOR. We'll put on our optimistic hat, and know that as we continue to work very hard to secure our works and identify business models as an industry that can work, these are the type of devices as they come on, provided they respect those protections, that can be a great benefit not just to the industry but to the consumer.

I can look back in recent history at the DVD model. The film industry was the leader in the development of the DVD. And there are reasonable content protections on those discs, each of those discs.

And when people hear the term "content protection," a lot of, you know, people's hair stand up. But what did the content protection do? It unleashed an avalanche of titles into the marketplace; it provided a DVD player that respects those protections; and it led to the most successful new product introduced in the consumer electronics enterprise.

And most of all, most importantly, consumers were the great beneficiary of those reasonable protections, because now they're building personal libraries of their favorite films like never before. So reasonable protections, new technologies: When those go together, good things happen. And we'll be leading that charge.

Mr. ISSA. Thank you, Mr. Chairman.

Mr. SMITH. Thank you, Mr. Issa.

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The gentlewoman from California, Ms. Sánchez, is recognized for her questions.

Ms. SÁNCHEZ. Thank you, Mr. Chairman.

Mr. Taylor, one of the concerns that I have with the various subscription services is the impact that they have on the revenues for the creators. And I'm going to give you an example. Yesterday I had some songwriters come visit me in the office that were talking about subscription services that allow people unlimited access to download songs for as little as $5 or $10 a month. And they saw that as a big threat to their income stream. And I know that the business model for the motion picture industry is somewhat different, but I'm wondering if there's been any discussion of any types of safeguards that you might put into place to try to protect the creative talent and their revenue as you move forward, in terms of the new technology and the subscription services.

Mr. TAYLOR. Right. Well, in Hollywood, each of the segments of the creative community—writers, actors, directors, grips, all of them—are represented, and through negotiations these terms are worked out. And as new means of delivery come into the marketplace, when next windows for negotiation take place, those are the type of things that we've worked out in that environment.

Suffice to say, we're an industry that has had a long and productive and fruitful relationship with all elements of our creative talent. And one of the reasons that I consider it such an honor to testify on this subject today is it's not just about the names on the marquee that we stand here trying to speak about and protect. It's those names that scroll and continue to scroll as you walk out of a theater, get in your car, and drive out of the garage at the movie theater.

All of those folks have a stake in this fight, and they're the ones who are really, truly on the front lines of it. So we are most interested, and very interested, in making sure that everyone in our industry is well taken care of and protected. And it begins by making sure that there is some compensation for the works that are available and made.

Ms. SÁNCHEZ. But I mean, have you had meetings with folks, you know, from beginning to end of production that contribute to this process? It seems to me, and this is sort of a follow-up question for—Mr Raduchel; is that correct? You know, who sets the, you know, $20-a-semester, you know, subscription, I mean, for an entire catalogue of movies? Call me crazy, but that seems like—you know, for all the people and all the work that goes into producing these works—very little.

Mr. RADUCHEL. They only get access to a limited number on any given day. It's 50 titles on any given day, and we cycle through the titles over the course of the semester, the course of the month. So it isn't everything.

You know, you have very good questions. I cannot disagree with them at all. The issue that we're trying to do, and the industry is supporting us on, is getting kids to agree to pay anything. And the step one is to get them habituated to paying. And the belief is that if they're habituated to paying something, as they get older, have more money, go on in life, they will be willing to pay more.

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That is the theory. It may be right; it may be wrong. But if kids come out of college habituated to paying nothing, unfortunately, a 24-year-old is not a lot different than a 22-year-old or an 18-year-old, and this habituation to free will go on and persist in life. And I think that threatens all of the creative talent.

I mean, we care a lot about the creative talent. I mean, we want them to earn money. That's what we're trying to go do. But we are competing against free in a very broad catalogue, and so there's a limit to what pricing we can charge and expect we're going to get any adoption at all. But your points are very valid, and I understand them.

Ms. SÁNCHEZ. All right. No further questions, Mr. Chairman.

Mr. SMITH. Okay. The gentleman from South Carolina, Mr. Inglis. Do you have any questions?

Mr. INGLIS. No questions.

Mr. SMITH. Okay. Thank you. Are there any other questions by any other Members who are present?

Mr. BERMAN. Mr. Chairman?

Mr. SMITH. The gentleman from California.

Mr. BERMAN. Just to ask if the record could remain open. I think the gentleman from California, Mr. Schiff, wants an opportunity to put in a written statement on this issue.

Mr. SMITH. Okay. Without objection, his written statement as well as the opening statements of any other Member will be made a part of the record.

Thank you all very much. This has been very informative. And this is going to be one of those hearings which lives on, so to speak. We've had hearings on this subject before; we will have hearings on this subject in the future. I mentioned the GAO report that we will be requesting in the next few days. And so we'll continue to monitor the progress, and you all have been a big part of the progress that has occurred so far. So thank you for your input, and thank you for your testimony.

[Whereupon, at 10:15 a.m., the Subcommittee was adjourned.]

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APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

PREPARED STATEMENT OF THE HONORABLE HOWARD L. BERMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA, AND RANKING MEMBER, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

Mr. Chairman,

Thank you for scheduling this hearing on campus university Peer-to-Peer piracy. The beginning of the academic year is the perfect time to assess what progress has been made by universities to stem the proliferation of illegal file-sharing by students on their campuses.

There is little question of the devastating impact piracy has had on the entertainment industry. The total value for the music industry at retail declined from $14.5 billion in 1999 to $12.1 billion in 2004. In March 2005 alone, 243 million songs were downloaded from illicit peer-to-peer services. (NPD Musicwatch). Furthermore, it is estimated that approximately 400, 000 films are illegally downloaded every day. However, when it comes to downloading content that is not paid for, there seems to be a disconnect that students exhibit between intellectual knowledge and actual behavior. There was a very telling discussion that occurred during a program about P2P file sharing organized by my colleagues, Adam Schiff and Linda Sanchez, and me for students from different colleges who were interning on the Hill. The students all acknowledged that downloading content from P2P networks was possibly morally wrong, probably legally wrong and potentially harmful to their own networks (from spyware or adware). Yet many of them continue to use P2P file sharing as a means of obtaining music, movies, television shows and games.

Last year at this hearing, Graham Spanier, one of the chairs of the joint committee and a visionary in undertaking the Lion's Share project at Penn State testified "I don't think there is any one part of the solution. It has to be a set of variables that universities use to bring about progress in this area."

Awareness of the effects and solutions to the piracy problem can be addressed through:

- Education
- Enforcement
- Technological improvements and
- Affordable legitimate alternatives.

The good news, in no particular order, is that there has been progress on every front. This past June, the Supreme Court, in a unanimous 9–0 opinion in the Grokster case, sent a clear message that companies that encourage theft can be held liable. Immediately after the decision, iMesh, one of the original peer-to-peer (P2P) services announced the transition from a free to commercial-based authorized P2P business model which ensures compensation to creators. Slowly others have begun to follow suit. As late as this week, Grokster is rumored to be attempting to turn "legit."

Since the Grokster decision, there have been other positive impacts on campuses around the country, for example, the University of California and California State University announced a deal with Cdigix Inc. which provides administrators at all 13 UC and 23 Cal State campuses the option of offering online music and movie sales to students. Of course, providing students with legitimate alternatives to the Kazaas and Groksters is a key part to any solution to the piracy problem.

But as the report released yesterday by the Joint Committee of Higher Education and Entertainment Communities indicates, there are miles to go before we sleep. Free is still an option and while the Grokster decision may have stemmed the wave

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of piracy, many continue to ride the wave and persist in illegally downloading music, movies, and software.

We must confront the piracy which takes place on the school's local area networks (LANs) and the increased use of unauthorized hacks of the legitimate online services. We cannot afford to become complacent about ensuring that the creators receive just compensation for the works that students enjoy.

Just this Monday the movie industry announced a concerted effort dedicated to mitigating the effects of piracy. The goal of the new non-profit research and development company, Motion Picture Laboratories, Inc. (Movielabs), will be to create new technologies to protect the distribution of films and other works as well as to protect against electronic theft, particularly on the Internet. Just last week RIAA and MPAA joined Internet 2 as corporate members with the objective of working together on new technologies for secure digital distribution. We must continue to work together to help address the piracy problem.

It is the combination of the many methods and not just one silver bullet that will address the campus peer to peer issue. Perhaps, as more simply put by Aristotle, "in educating the young we use pleasure and pain as rudders to steer their course" (Nichomachean Ethics, Book X.) The Universities and content providers must educate well, as it is this future generation which will educate the next.

I am looking forward to hearing from the witnesses and learning about some of the remaining pitfalls to curbing piracy on campuses.

I yield back.

PREPARED STATEMENT OF THE HONORABLE JOHN CONYERS, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN, AND MEMBER, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

According to a March 2005 PEW Internet & American Life Project survey, young adults continue to be the largest group of Internet users who share files with others online. File sharing among students can provide many beneficial uses in education, research, and professional development. Unfortunately, college students have exploited the intended use of the peer-to-peer network by trafficking in music, movies, software, video games, and other copyrighted material without permission. While the Supreme Court unanimously held this past summer in the *Grokster* case that the file trading companies can be liable for their misconduct, we cannot turn a blind eye to the users of such software.

Aside from the issue of copyright infringement, this illegal use of peer-to-peer networks can lead to invasions of student privacy, viruses, and other potential security threats to the university's network.

The content industry is stepping up its battle against digital copyright piracy on college campuses, encouraging higher education leaders to monitor their students and impose restrictions on violators. On the other hand, monitoring raises privacy concerns and could chill the use of peer-to-peer technology that can otherwise have valuable academic rewards. I also would be concerned that monitoring could turn university officials into spies, thus creating an atmosphere in which the First Amendment and privacy rights of students are significantly devalued.

Because piracy has proven to be a lethal threat to the content industries, we must address the legitimate concerns of creators. One approach to reducing peer-to-peer piracy on university campuses that does not require monitoring seems to be working: providing a legal alternative for students to access music, films, and other media while educating students about the importance of copyright issues. Two major universities in my home state, the University of Michigan and Michigan State University, have taken the lead in this approach.

After the University of Michigan inked an agreement with Cdigix, students were able to choose from a wide variety of media and entertainment services for only a nominal monthly fee. Because of the University's agreement with Cdigix, its acceptable use policy, and its education campaigns on copyright infringement, the Recording Industry Association of America cited the University as a model for how universities should combat illegal file sharing.

At Michigan State University, the University has implemented the multi-tiered approach of information campaigns, an acceptable use policy, and technical measures to prevent illegal file sharing. These measures have led to a 75% reduction in the monthly rate of Digital Millennium Copyright Act violations on campus. In addition, MSU is conducting advanced discussions with venders such as Cdigix to provide a legal avenue for students to access digital entertainment. MSU's strategy strikes the appropriate balance between preventing illegal sharing of copyrighted

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files and respecting the privacy of personal communications over the University network.

By providing legal alternatives to file sharing and through education, universities can and will continue to teach students to make good decisions regarding online entertainment. Furthermore, by becoming familiar with services like Cdigix, students will develop the habit of paying for music that will extend beyond the university setting.

PREPARED STATEMENT OF THE HONORABLE ADAM B. SCHIFF, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA, AND MEMBER, SUBCOMMITTEE ON COURTS, THE INTERNET, AND INTELLECTUAL PROPERTY

I'd like to thank Chairman Smith and Ranking Member Berman for convening this important hearing. The testimony we will receive today demonstrates that peer-to-peer piracy is still out of control, posing a serious threat to the livelihood of copyright creators, many of whom live in my district.

According to some estimates, over 60 percent of all Internet traffic in the U.S. can be attributed to peer-to-peer usage. Over ninety percent of all content on peer-to-peer networks consisting of unauthorized copyrighted files, and an estimated 400,000 films are illegally downloaded every day. Given the prevalence of high speed Internet connections at universities across the country, peer-to-peer piracy of music, television shows, and movies has reached epidemic levels at many institutions.

A few months ago, Ranking Member Berman, Rep. Linda Sánchez, and I hosted a panel discussion for House interns regarding piracy on campus and the availability of legitimate online entertainment choices that are available. At the event, many students acknowledged the continued prevalence of illegally downloading music and movies via peer-to-peer networks on campus.

A number of universities have taken important steps to address this problem. In particular, the University of Florida, with its innovative program targeting unapproved peer-to-peer applications and prohibiting transmission. It is encouraging to hear that this program has reportedly kept the network free from illegal copyright sharing, while faculty and students remain able to share and distribute academic material through secure websites, FTP, and e-mail. This model should serve as an example for other institutions to follow.

Universities in my home state of California have exhibited mixed results. Some campuses in the California system have already worked diligently to address the problem of piracy on campus. I'm pleased to hear that the University of California in collaboration with the California State University system has recently contracted with a number of online entertainment providers to offer discounted subscriptions for music, movies, and other digital entertainment to students. I strongly encourage each of the individual campuses within the system to review the details of the various offerings and work to make one or more of the services available as soon as possible.

In closing, I'm pleased to learn that this will not be the last hearing on this topic and that the Subcommittee will continue to monitor progress in this area. With the proliferation of new peer-to-peer systems such as i2Hub and "local area networks" (or "LANs"), we must continue our vigilant oversight in this area and determine whether a greater degree of congressional intervention is necessary.

PREPARED STATEMENT OF FREDERIC HIRSCH, SENIOR VICE PRESIDENT, INTELLECTUAL PROPERTY ENFORCEMENT, ENTERTAINMENT SOFTWARE ASSOCIATION (ESA)

On behalf of the Entertainment Software Association (ESA) and our member companies, I thank you for this opportunity to add a statement to the record to update you on the impact peer-to-peer (P2P) piracy on university networks is having on the entertainment software industry. In the three years since our President, Douglas Lowenstein, appeared on Chairman Smith's University P2P Piracy Panel at the University of Texas at Austin, our industry has taken a number of significant steps to combat the piracy problem on American college campuses. Nevertheless, campus P2P piracy remains a threat to the economic contributions the computer and video game industry makes to the United States economy.

As ESA's Senior Anti-Piracy Executive, I would like to update you on the progress we have made in addressing college-level P2P piracy over the past few years on the educational and enforcement fronts. In addition, I would like to review the growing challenges we face, including the rapidly increasing use of BitTorrent for infringing

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activities, as well as to highlight what universities need to continue to do to help reduce the P2P piracy threat on the nation's campuses.

As you may know, the ESA is the trade association serving the public affairs needs of the world's leading publishers of video and computer games, including games for video game consoles, personal computers, handheld devices, and the Internet. ESA members produced more than 90 percent of the $7.3 billion in entertainment software sold in the U.S. in 2004. In addition, ESA's member companies produce billions more in exports of American-made entertainment software, driving the $25 billion global game software market. Entertainment Software is a vibrant and growing segment of the American economy, providing highly skilled jobs and ever-increasing exports.

Entertainment software companies invest significant amounts of capital in each of their games and the intellectual property that these represent. Developing and launching a top game often requires a team of more than 100 professionals working for more than three yearst, with development and marketing costs often running at least $5 million and often $10 million and higher. As with any hit-based industry, only a small percentage of these titles actually achieve profitability. Nonetheless, the demands of the game-playing market compel ESA members to continue to work even harder to develop faster and more exciting games, requiring larger investments in the programming and technology that will produce the effects and challenges that game players seek. The new generation of game consoles that will be launched over the next six to nine months will require game publishers to make even more significant levels of investment as the processing power of these new machines will permit more complex and realistic game design, further enhancing the game-playing experience for consumers.

Over the past few years, illegal and unauthorized uses of game software have proliferated rapidly, as the popularity of playing interactive games has commanded an increasing share of Americans' leisure-time activity. Among certain segments of the population, notably college students, the playing of games represents a dominant form of recreation and entertainment, increasingly displacing other forms of diversion such as watching television. The current generations of college students have been playing computer and video games for more than a decade. A Pew study in 2003 revealed that over 65% of college students play interactive games on a regular or occasional basis. Most of them bring to their college campuses the game-playing habits cultivated over many years at home. Thus, it is easy to understand why college campuses continue to be areas of major concern for ESA members, particularly as college students, open and eager to learn and try new things, often fall prey to the temptations of easy access to hundreds of free interactive games over the Internet.

A digital file containing an interactive game consists of, on average, over 650 megabytes of information, a large digital file over 150 times the size of the standard music mp3 file. Downloading such a file over a dial-up connection where the speed of the connection is 56 kilobits per second is a daunting proposition at best and, at more than 24 hours, practically unfeasible for all but the most determined of downloaders. Despite the dramatic increase in broadband access to the Internet among American households, most American homes access the Internet through dial-up connections. Thus, most students, when they first arrive at college, have not had any experience downloading interactive games. However, the broadband systems that exist on most American college campuses offer a dramatically different technological context for the average student, who becomes quickly informed about the many wonderful "facilities" of high-capacity access to the Internet. Indeed, in such a broadband environment, the download time for a full game file can be cut to 3–4 hours and sometimes faster, a much more enticing opportunity than what these students might have found on their home computers. ESA's tracking of online pirate activity confirms that almost all illegal game downloads occur over broadband connections.

The high-speed access offered by such campus broadband systems become problematic when combined with other personal and lifestyle elements found among many student communities: substantial amounts of free time, high levels of technical knowledge and attraction to interactive games, and a close community with a generally high percentage of active game players. On many campuses, this congruence of factors produces environments marked by high rates of illegal copying and distribution of game software. Moreover, the efficiency of peer-to-peer software and networks offering a wide variety of illegal versions of games makes downloads of game software all the more accessible to the average college student. Indeed, ESA's monitoring of Internet piracy of its members' leading games shows that the overwhelming majority of illegal downloads (89%) of such games on college systems are executed through P2P protocols.

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ESA plays a significant enforcement role on behalf of its members by pursuing efforts to reduce the illegal uses of its members' game software. Needless to say, much of ESA's anti-piracy work has been focused on addressing pirate activity on the Internet. The online enforcement program begins with our automated monitoring of the Internet, which detects and identifies infringing activity and sites involving game product. Such detection is followed by ESA's manual verification of the infringing activity and transmittal of notices advising ISPs and MIS managers of the illegal activity detected among users of their systems and requesting their intervention in procuring the termination of such activity. Over the past year, ESA has sent over 173,000 such notices. The ISPs responses to these notices run the gamut of no response, to an automated acknowledgement of receipt of the notice, to an e-mail response, to a phone call or letter describing the action to be taken in response to the notice. Unfortunately, the vast majority of responses sent to ISPs regarding P2P activity fall into the no-response category.

The good news is that college and university MIS administrators have distinguished themselves from the large group of non-responsive ISPs with a high level of response and cooperation in response to our notices. Their responses are generally very informative and go beyond what we normally receive from commercial ISPs in terms of describing their efforts after receiving the notice of infringing activity. Some colleges, notably the University of Oklahoma and Webster University, routinely describe to us in detail the steps they have taken to address the instance of piracy identified in each of the notices we send them. Such steps can range from warning letters to suspension of access to the university network. We have been very encouraged by this level of response and have used the opportunity of our contacts with university administrators to offer them additional support and information that we encounter with respect to game piracy.

Fortunately, universities and colleges across the United States have done more than merely respond to our notices regarding pirate files appearing on their systems. Many of them have taken a pro-active approach to educate their students, faculty and employees about online piracy and have adopted policies governing the use of their systems and networks aimed at establishing clear lines regarding the consequences of students, faculty or employees engaging in illegal copying or transmissions of IP-protected content. We think that these educational efforts are among the most important areas of activity for university administrations. Such educational initiatives over time will do much to dissipate the "anything goes" attitude that permeates many college campuses with respect to Internet usage. Addressing the ethical and legal aspects of infringing activity and abuse of intellectual property is an important function that we think college administrations are ideally suited to perform. We also think that a continuing dialogue between IP industries and college administrations regarding the way these issues are raised and presented to students could serve to further enhance colleges' efforts to educate students about intellectual property abuse and piracy.

We are also aware that many universities have instituted technological measures to reduce the illegal activity resident on their networks. Whether it is the ICARUS system implemented by the University of Florida, the Quarantine Approach initiated by UCLA, or Audible Magic's CopySense, or bandwidth-shaping technologies that limit the amount of data that can be sent over networks, many colleges have availed themselves of technological solutions that serve to either preempt or deter the use of their systems for illegal transmissions of infringing files. In addition, the University of Nevada has installed technology that automatically deletes files saved to communal computers when switched off making it impossible to store illegal files there. We applaud such efforts and believe that wider application of such technologies will ultimately help preserve the college networks for the educational uses which should be their paramount purposes.

Enforcement, education and technology are all critical elements in the effort to reduce piracy on university systems. We think that many universities have stepped up to take on the challenges that this Subcommittee set forth for them last year by taking a pro-active and engaged approach to this problem. While the ESA and its members are gratified by the level of response and communication that we have seen from universities with respect to instances of game piracy found on their systems, we must also point out and caution that Internet piracy is a dynamic and rapidly evolving phenomenon, raising new concerns and issues for those trying to confront it effectively. P2P technologies are changing quickly, and some, such as BitTorrent, have set new benchmarks for the speed and efficiency with which they permit the copying and distribution of digital content. The constant change we see in the pirate Internet environment requires continuing dialogue between the IP industries and university administrators to coordinate and collaborate on the best way to respond to these new challenges.

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In addition to the problem of P2P piracy, ESA members remain equally concerned about another form of illegal activity occurring on some university systems, beyond the knowledge and awareness of their administrators. Federal investigations and enforcement actions against members of Internet piracy rings known as "warez groups" over the past few years have revealed that many members of these groups have surreptitiously used university systems to store their illegal "warez" files, consisting of illegal digital copies of games, movies, software and music. Some of these were cases of intrusion, where one or more members of these groups successfully hacked into a university system and then undertook to quietly hide several thousand files beyond the purview of system administrators. Other cases were "inside jobs", in which a member of the university MIS staff was also a member of one of these groups or was co-opted into permitting the groups' use of university servers and bandwidth capacity for their illegal purposes.

While we understand that such activities were in no way sanctioned by the universities involved and, in fact, consider them also to be victims of such groups, we would like to underscore that such unauthorized uses of university systems remain a major concern for the game software industry and its efforts to curtail the activities of these warez groups. We believe that the college MIS systems that were targeted by these groups in the past must institute technical measures, procedures and internal audits which will serve to prevent any recurrence of such intrusions in the future. We also think that other colleges not yet similarly victimized should take proactive steps to prevent such unauthorized high-jacking of their bandwidth. In short, this Subcommittee should stress to universities that they must maintain a high degree of vigilance with respect to their IT equipment and networks, as the members of these warez groups are constantly on the prowl for the storage and bandwidth facilities that university systems offer.

We applaud the work of this Subcommittee and the outstanding efforts it has made to focus attention on the important issue of P2P piracy and illegal uses of university systems. As noted earlier, the entertainment software industry has a particularly large stake in seeing that college environments are free from the illegal copying and distribution of their game products. We earnestly believe that the interest of this Subcommittee in this area has made a material contribution to the great progress that the university community has made in that direction. For this, we are most grateful.

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SUPPLEMENTARY STATEMENT OF DANIEL A. UPDEGROVE, VICE PRESIDENT FOR INFORMATION TECHNOLOGY, UNIVERSITY OF TEXAS AT AUSTIN

Supplementary statement of Daniel A. Updegrove
Vice President for Information Technology
Adjunct Professor, School of Information
The University of Texas at Austin
Before the Subcommittee on
Courts, the Internet, and Intellectual Property
Committee on the Judiciary
U.S. House of Representatives

Oversight Hearing on
Reducing Peer-to-Peer (P2P) Piracy
On University Campuses: A Progress Update
September 22, 2005

Supplementary statement submitted
September 29, 2005

Chairman Smith, Ranking Democratic Member Berman, Members of the Subcommittee:

In my statement and in my oral testimony of September 22, 2005, I made numerous references to The University of Texas at Austin's compliance with the Digital Millennium Copyright Act of 1998 (DMCA). It is possible that not all stakeholders in discussions of network file sharing are familiar with the provisions of the DMCA.

Title II of the DMCA, the "Online Copyright Infringement Liability Limitation Act," added a new section 512 to the Copyright Act to create four new limitations on liability for copyright infringement by online service providers. The limitations are based on the following four categories of conduct by a service provider:

(1) Transitory communications
(2) System caching
(3) Storage of information on systems or networks at direction of users; and
(4) Information location tools

Universities are considered online service providers under the DMCA with respect to students. This is true for students using university data networks in both residence halls and elsewhere on campus (e.g., in libraries, classrooms, dining halls, or anywhere within reach of our networks' wireless signals). Analogous to commercial providers of DSL and cable broadband services, universities that comply with the DMCA's requirements have no liability for damages for the infringing conduct of student users of our systems.

Reference:
The Digital Millennium Copyright Act of 1998: U.S. Copyright Office Summary, December, 1998 -- http://www.copyright.gov/legislation/dmca.pdf

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