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On behalf of the University of Michigan, I am submitting comments regarding the urgent and essential need to amend the copyright law to ensure that distance education may be promoted through digital technologies while maintaining an appropriate balance between the rights of copyright owners and the interests of users. Thank you for the opportunity to participate in the discussion about this important issue.

## RESPONSES TO SPECIFIC QUESTIONS

### 1. NATURE OF DISTANCE EDUCATION

The world of higher education is undergoing rapid change in response to the emergence of new technologies for storing, retrieving and delivering information. The extensive and growing use of computers in our society will mean that future generations will think and learn differently from previous generations. These changes affect all sectors of the higher education world, including private universities, public universities, liberal arts colleges, community colleges, and corporate educational enterprises. These new technologies offer institutions like the University of Michigan the opportunity to transform, fundamentally, the educational practices we use in face-to-face teaching and to expand the educational mission of the university beyond its physical location. For these transformations and extensions to occur, however, we must have a copyright environment that fully embraces the principle of fair use and that recognizes that education and learning are not confined to a physical space or geographic location.

In at least two important ways, the University of Michigan makes few distinctions between “distance education” and “residential learning.” First, as an institution we are committed to the principle that the quality of learning that occurs in each environment must be equally high. Second, the technologies that enable distance learning (e.g., the web, streaming video, digitized text and images, multi-media content, interactive simulations, and

collaborative technologies) are the very same technologies that can be used to enhance residential learning, especially in large classes where face-to-face interactions between individual students and instructors are rare. In the face of growing consensus that students learn best by doing, the technologies that enable distance education are being used to transform classrooms. Traditional teaching methods are being enhanced by the addition of media-rich, asynchronous, computer-based environments that create learning communities of scholars and students that extend beyond the boundaries of the traditional classroom.

Currently, the University of Michigan has a fairly limited number of formal distance education initiatives. Most of these initiatives are located in the professional schools. A few examples of these programs are listed below:

- The College of Engineering's Center for Professional Development, established in 1996, provides off-campus graduate instruction and non-credit professional development
- The Business School's Global MBA program uses telecommunication technology to deliver approximately 25% of its instruction
- The School of Nursing, uses interactive video to deliver nursing programs to students in Traverse City
- The Medical School's Office of Continuing Medical Education provides community physicians with a series of "live" and distance-independent educational programs

The courses that make up these initiatives rely heavily upon a combination of e-mail, video-conferencing, and electronically delivered course notes. Like the more traditional residential courses offered at Michigan, the distance education courses use a variety of content sources. Most combine traditional texts, purchased by the students, with course specific supplements that might include individual articles, case studies, model data sets, and interactive simulations. Much of the latter material is provided electronically through a system that is password protected and accessible only to registered students.

## 1. ROLE OF LICENSING

Licensing vs Fair Use. For distance education to fulfill the potential made possible by recent technological advances, those institutions offering courses through distance education, primarily colleges and universities, need a set of statutory provisions that define appropriate uses of lawfully acquired material. Statutory language provides important policy guidance that permits reasonable parties to engage in discussions which, ultimately, should complement the law.

Licensing is an important option for defining the terms for use of copyrighted works, but it must not be the sole way in which access to copyrighted material is controlled in the distance education environment. Licensing is not a substitute for a distance education exemption for display and performance of works. Reliance on licensing to the exclusion of a distance education exemption would lead to an imbalance in the rights of copyright owners and those of educators as users of copyrighted works, to the great detriment of the educational mission.

Technology and Licensing. Technology for secure licensing is available and more products are anticipated. This technology will serve to identify principals securely, enabling service providers to accomplish secure and reliable identification of rights holders. This technology will be central to the process of obtaining licenses and the clearance of rights, and may play a role in price differentiation, should the market view that as important.

Issues such as rights clearance, identification of the users, and differentiation between users will require development of identification standards as well as a system of linked data repositories that can be accessed simultaneously by rights holders and users. These data repositories will need to be managed by "trusted third parties" for the public to make use of them. Considerable tension will exist between privacy rights advocates and the organizations promulgating the standards and the production systems needed to implement them.

At the University of Michigan, we rely heavily on commercial distributed file systems, AFS (from a division of IBM) and Novell NetWare, to accomplish secure site-licensing of software products.

However, it must be stressed that licensing, although it may be technologically simple and secure, must not be seen as a substitute for statutory options.

### 3. USE OF TECHNOLOGY

#### Technologies Used to Prepare and Disseminate Digital Distance Education.

Technologies used to prepare and disseminate digital distance education programs include hardware and software video encoding and transmission standards, such as MPEG and H.323. Of course, the internet protocols are central to dissemination of digital information, and web protocols such as HTML and HTTP currently dominate this space. Many proprietary commercial solutions exist; some interoperate with others and some de-facto standards are emerging. The technologies used for the preparation and dissemination of digital distance education programs tend to be developed for the commercial marketplace, although some are "open source" technologies, freely available for a wide range of uses. Most universities use commercially available web page preparation tools that require only basic browser access on the part of students. Web-based Video content can also be distributed using free plug-in clients, although there are many incompatibilities between various vendors. Synchronous video products are also used, and these follow two basic standards for ISDN-based and IP-based distribution. What is missing from this mix is a standards-based instructional management component, although the IMS project is working to fill this gap by promoting the development of commercial products that have broad portability.

#### Technologies Available to Protect the Security of Digital Distance Education

Programs. Technologies to protect the security of distance education programs include cryptographic algorithms such as DES and RSA encryption, and Kerberos and public key infrastructures. These ciphers and protocols are widely available and are incorporated into several research projects, most prominently VIC, available from the University of California at Berkeley. Products that incorporate these technologies are able to prevent the unauthorized use of copyright materials, but do not serve to prevent unauthorized retention or re-use of copyright materials. Digital watermarking technologies provide some level of protection against unauthorized re-use of copyrighted materials, but this is still an active area of research, and the answers are not yet

complete. It can be anticipated that these technologies will mature over the next five years. The parties developing these technologies are generally academic and industrial researchers. The costs of implementing these technologies is moderate, but awaits broad consensus on effective algorithms and protocols for this purpose.

#### 4. APPLICATION OF COPYRIGHT LAW TO DISTANCE EDUCATION

Distance education is here and is quickly becoming a fundamental component of modern pedagogy. Faculty and students across the country are engaging in teaching and learning in ways never imagined by the drafters of the 1976 Copyright Act. More students each year study under the tutelage of faculty in remote, asynchronous, digital, video, or other emerging formats using a variety of new media resources. In this way, educational institutions are bringing higher quality and more accessible instruction to the technology-savvy students who will be responsible for an increasingly complex global community.

Existing law is inadequate to address the forms and pedagogical practices essential to distance education because it makes an irrelevant and detrimental distinction between what is accessible for students and faculty who participate in the traditional classroom and for students and faculty who have access to educational resources in a remotely controlled environment. The law should not differentiate between educational activities traditionally permitted within the classroom context and those same educational activities offered at a distance through the use of multi-media, the internet, and other emergent technologies.

In this spirit, we encourage you to consider the following points in conjunction with the testimony of Professor Laura Gassaway and Dean James Neal:

--All legislation relating to distance education ought to include careful consideration of its educational implications and impact. The goals of education should be a paramount part of the development of all legislation that affects the lifeblood of educational institutions--access to knowledge;

--Legislation, such as section 110(2) of the copyright act, should be expanded to make educational access to resources seamless, whether in the context of the traditional classroom or in the context of the emergent remote, asynchronous, virtual, and digital classroom--or even the unanticipated classrooms of the future;

--In order for distance education to function, students and faculty must have access to resources on and off campus. For educational purposes, remotely controlled resources should be as unencumbered in the remote classroom as they are in the face-to-face environment. Therefore, legislation must be expanded to exempt violation where distributions and reproductions of copyrighted materials are used in the context of distance education.

--Modes of transmission, such as those addressed in Sections 111 and 112, ought to exempt from violation the entire infrastructure supporting distance education when it is conducted appropriately. This does and will likely include service providers such as internet access providers, satellite sources, cable providers, etc.

--Because the educational medium has improved and changed so dramatically, some legislation must be altered to reflect those changes. For instance, the limitation on the number of copies in Section 112(b) does not make sense in the new medium of education, particularly with respect to the internet.

--Sections 110(8) and 121 must not be neglected when updating the Copyright Act. These sections must afford the most expansive exemptions available. The disabled community stands the most to gain from distance education and, access to education, in whatever form, must be unfettered for its members.