Infringement-Suppression Technologies
Summary Observations from a Common Solutions Group Workshop

Unauthorized online sharing of copyrighted material challenges copyright holders, network operators, and media customers alike. To better understand the role current technologies might play in addressing these challenges, the Common Solutions Group (CSG), comprising chief information officers and lead technologists from 28 major research universities plus other technology experts involved with intensively networked communities, invited leading vendors of detection and suppression technologies to present and discuss the architecture and implementation of their products at an intensive workshop held at Virginia Tech on January 9, 2008.

The workshop grew out of earlier discussions sponsored by the Technology Task Force of the Joint Committee of the Higher Education and Entertainment Communities, chaired by Brit Kirwan of the University System of Maryland and Cary Sherman of the RIAA. Three vendors – Audible Magic, Red Lambda, and SafeMedia – each described their technology, participated in a panel discussion, and then answered questions from approximately 100 workshop participants. As a standing policy, CSG endorses neither products nor vendors, but given the current national discussion of online-sharing challenges we thought it useful at least to summarize some key technical observations from the workshop.

Although each of the technologies we discussed works in the narrow technical sense, it is the sense of CSG participants in the discussion that *current products cannot stop all (or even most) unauthorized sharing of copyrighted material without interfering with the efficiency of the networks essential to research and teaching in higher education*.

- Audible Magic's *CopySense* technology can most reliably identify only material that is registered with the vendor. Moreover, encryption can enable peer-to-peer traffic to bypass Audible Magic's detection.
- Red Lambda's *cGrid* technology detects traffic patterns rather than suppresses infringement. It requires considerable administrative expense and specific network architecture and management tools to translate identification of patterns into suppression of infringement.
- SafeMedia's *Clouseau* technology blocks any communications its vendor deems undesirable. Network operators cannot override this blocking locally, even if the vendor blocks important non-infringing communications or otherwise disrupts network operations and effectiveness.

Current technologies can affect unauthorized sharing. However, their effectiveness is very limited, and they can suppress legitimate traffic along with infringing traffic. Fully deployed, they are also expensive. Although new approaches may yield effective, inexpensive, operationally benign infringement-suppression technologies in the future, implementing current technologies simply will increase tuition and research costs in higher education and degrade network performance while yielding only modest effects on unauthorized sharing.

It is important to note that the technology vendors do not necessarily agree with the views of CSG members. The logos below link to comments from the three vendors who participated in the workshop:

Business and policy challenges surrounding online media continue to evolve. So does the technology of online media distribution and sharing – both legal and illegal. Given the limited ability of technology to reduce unauthorized online sharing, which the CSG workshop made clear, effectively mitigating online copyright infringement requires much more than technological solutions. The challenge is fundamentally educational, and it must be addressed throughout formal and continuing education. The educational message will become far more effective as more appealing legal distribution mechanisms emerge. And the educational message must be reinforced by appropriate penalties for non-compliance that are fairly, diligently, and uniformly imposed, as is the case today within most research universities. CSG members remain eager to collaborate with other interested parties in a multi-faceted approach to the challenge.

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The Common Solutions Group

The Common Solutions Group was founded (as the "Stone Soup Group") in 1994 by Ken King, who had earlier served as Chief Information Officer at Cornell University and as President of EDUCOM.

From the CSG Charter:

Intensively networked information technology is uniformly central to the work of major research universities. It therefore serves to advance their overall effectiveness rather than to differentiate them competitively. For this reason, it is critical to the overall efficiency of research universities that they act collaboratively to influence commercial providers of information technology and, where the market fails to provide appropriate technology, work collaboratively to develop and disseminate common solutions to important IT challenges. Collaborative work of this sort requires open, sophisticated interaction within and across two groups, namely the technical staff of key research universities and the senior IT administrators responsible for strategic direction and resource allocation.

The Common Solutions Group works by inviting a small set of research universities to participate regularly in meetings and project work. These universities are the CSG members; they are characterized by strategic technical vision, strong leadership, and the ability and willingness to adopt common solutions on their campuses. CSG meetings comprise leading technical and senior administrative staff from its members, and they are organized to encourage detailed, interactive discussions of strategic technical and policy issues affecting research-university IT across time.

CSG is limited by charter to 30 members. Of these, at least 25 must be research universities. The current members of CSG are as follows:

Brown University
Carnegie Mellon University
Columbia University
Cornell University
Duke University
Georgetown University
Harvard University
Indiana University
Massachusetts Institute of Technology
New York University
Pennsylvania State University
Princeton University
Stanford University
University of California (Berkeley)
University of California (San Diego)

University of Chicago
University of Colorado (Boulder)
University of Michigan (Ann Arbor)
University of Minnesota
University of Southern California
University of Texas (Austin)
University of Virginia
University of Washington
University of Wisconsin (Madison)
Virginia Polytechnic Institute and State University
Yale University

EDUCAUSE (consortial member)
Internet2 (consortial member)