The Digital Debate
Defending the digital rights landscape

BY ROBBY ROBSON

Digital rights management is a hot topic that has been subject to high-profile lawsuits; political gamesmanship in technology, media, and congressional circles; and raging intellectual debate. A lot is at stake, and little of it is specific to e-learning. Nonetheless, the e-learning community must come to grips with how it will manage rights associated with digital content. What are the issues, and what is being done?

Digital rights, rights enforcement, and rights expression
First off, it will help to distinguish among rights, rights enforcement, and rights expression. Digital rights grant or restrict the ability to do specific things with digital content under given conditions. For example, they may grant the right to give away a file but not alter it or to view a document for free but to print it only if you pay a fee. Even though technology is involved, the rights themselves are legal concepts that are outside the scope of technology and standards. Rights can be granted by people but not by software.

Technology starts to play a significant role when digital rights are enforced. Fees for using digital content have little practical meaning if there is no system for tracking and collecting them, and permissions don’t mean much if there is no way to prevent unauthorized access. Digital rights management is largely about digital rights enforcement, specifically by the software that reads, plays, or distributes content. If people (or organizations) are to grant rights and software is to enforce them, the software has to know what the rights are. The solution is to express rights in a digital rights expression language. A rights expressions language is a means of encoding digital rights in standardized ways that can be interpreted by digital technology.

Dozens of digital rights expression languages exist, mostly for specific domains like e-books or streaming media. Many of these are based on extensible markup language (XML) so they can easily be used by components of a networked environment. The typical digital rights expression language uniquely identifies digital assets and lists the rights that are granted, taking rights and conditions from a standardized list. No right exists unless granted. For example, compliant software will not permit you to view or print a document unless the right to view or print is explicitly granted in a digital rights expression.

Surviving the standards battle
Digital rights are a high-stakes game for anyone whose business depends on digital content and that includes virtually all media and information technology companies. In the standards world, this resulted in a call for proposals for a “Rights Data Dictionary and a Rights Expression Language” issued in July 2001 by a working group of the Motion Pictures Expert Group (MPEG), which is developing a set of standards called MPEG-21 under the auspices of the International Organization for Standardization (ISO). Originally, three major contenders were poised to respond to this call: Real Networks, with a specification called extensible media commerce language; IPR Systems, with open digital rights language; and ContentGuard, with extensible rights markup language. During the process, Real Networks agreed to fold its offering into that of IPR Systems. This action left two serious proposals—ODRL (http://odrl.net) and XrML (www.xrml.org)—each one backed by its share of influential technology companies, including AIM and Microsoft.

To add to the drama, ContentGuard disclosed its intention to assert broad patents related to any digital rights expression language.

The MPEG-21 group held a shoot-out in December 2001, and the outcome was a decision to go forward with XrML as the basis for a standard. In addition, a technical committee within the Organization for the Advancement of Structured Information Standards (OASIS)—a key player in the promotion of XML standards for e-commerce—has addressed the further development of XrML.

Patents
A spin-off of Xerox Palo Alto Research Center (Xerox PARC), ContentGuard took with it a portfolio of broad patents that, according to the company, pertains “to the distribution of digital works and to any rights language.” The ContentGuard patents could apply to any method that attaches digital rights to digital assets by means of a digital rights language and, more generally, to any method of digital rights enforcement, depending on the details of the method.

ContentGuard has agreed to permit the royalty-free use of XrML to attach rights to content. This means that you
can build software that created XrML records and associate them to digital assets without paying any license fee. However, if you want to build software that actually interprets the XrML and uses it to enforce rights, then you will need to purchase a license from ContentGuard. The company will grant such licenses on a “reasonable and nondiscriminatory” basis.

**What about e-learning?**
When rights are associated with e-learning content, learning delivery systems will be expected to interpret and enforce those rights. Digital rights also affect the content development process in which the content production workflow is governed by permissions to modify, move, and combine objects. If the workflow is supported by software, permissions must be expressed and enforced throughout the process. As the industry moves toward the use of modular, standards-based e-learning content, digital rights management will play a key role in fostering use and reuse of digital content by content developers.

The existence of patents means that any e-learning system that enforces rights during learning delivery or content development could potentially be subject to license fees. What this means is that vendors producing such systems may need to pay fees, much in the way that producers of tools that create GIF images are subject to license fees because of a Unisys patent on the underlying data compression algorithm. These fees will most likely be passed on to customers in the costs of the products they use.

**Marking is work**
E-learning has its own set of cultural and technological requirements. A digital rights expression language that works well for the media and publishing industries may not be entirely suitable for e-learning. Digital rights management is an area being driven by interests much larger and more powerful than e-learning.

E-learning standards organizations are working together to understand the overall digital rights landscape, to make requirements specific to e-learning known to relevant standardization efforts and to figure out the best way forward for e-learning.

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