Challenges to Digital Rights Management:
An Annotated Bibliography

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Introduction and Scope

The following bibliography covers the current issues relating to Digital Rights Management (DRM). The articles chosen focus on current trends in Digital Rights Management and, more specifically, on two main issues: explaining the challenges and problems with implementing DRM schemes or highlighting what are currently thought of as the best practices when dealing with DRM. Several of the articles frame the discussion in an historical context by looking back at classic copyright issues because “even before digital technology reached out of desktops, developments in office and consumer electronics...were forcing content owners and lawmakers to take note” (Callow, 2008, p. 167). This bibliography puts an emphasis on including articles published in the last ten years. Even articles at the early end of the spectrum can seem dated because of how quickly the attitudes and technology surrounding DRM has been changing.

Description

A Digital Rights Management system is generally “designed to discourage or impede unauthorized—though not necessarily illegal—access to or use of copyright materials” (Herman, 2008, p. 231). Digital Rights Management, often referred to as DRM, is usually implemented in two ways: 1) encryption; and 2) digital marking. Encryption can be explained as “scrambling digital content that requires a digital key to decipher it” (Bailey, 2006, p. 120). Digital markings are “digital fingerprints that uniquely identify a work based on characteristics, simple labels that attach rights information to content, and watermarks that typically hide information that can be used to identify a work” (Bailey, 2006, p. 120). Digital Rights Management has become popular in recent years as content owners attempt to control how digital media is distributed to better protect their copyrighted material.

Summary of Findings

Digital Rights Management has been a hot topic amongst information professional, lawyers, artists and publishers for the last several years. There is no shortage of opinion pieces, blog posts and
newspaper columns for and against it. In the last few years, scholarly writings on Digital Rights Management have increased as the topic has become more important.

Most of the research on Digital Rights Management begins with the logical approach of looking at it from an historical perspective in order to understand the current usage and how it might be used in the future. When approaching Digital Rights Management in this fashion, most of the authors focus on the contentious issue of copyright. According to Callow (2008), the notion of content owners restricting access to users in the United States can be traced back as far as the Copyright Act of 1790. During that period nascent copyright laws did not affect everyday citizens like it impacts us today. This is because there was very little opportunity for the normal citizen to copy material, which was usually a book, without compensating the author or publisher. Then, many years later in the 1980's, the rise of the video recorder set off a vociferous debate over this issue which has really not stopped since. As Bide (2010) points out, the copyright laws were mostly to protect publishers from other publishers and we face a much different situation today with the advent of digital media.

In 1998 Charles Clark wrote his article “The Answer to the Machine is in the Machine” in which he discussed how to control digital copyrighted works. Soon after the Digital Millennium Copyright Act was created, which was the “first in the world to tackle the challenges of digital technology. Yet, for all its thoroughness, we are already past the point where copyright law alone is sufficient for the protection and management of rights in creative works” (Garnett, 2001, p. 2).

In the last several years Digital Rights Management has come to mean different things to different people. The research on the topic mostly falls into two broad categories: those who support strong copyright laws and those who support the idea of free culture. While it may seem reductive put all the research on one side of the other, Bailey (2008) explains that these are the fundamental two sides of the argument. Indeed, for all the nuance that is involved in the issue of Digital Rights Management, most of the writing comes down to this.

According to the research, most of the people who support strong copyright and, therefore, strong Digital Rights Management schemes, are the content owners, though not necessarily the artists. Usually it is the publishers and the vendors who insist on using Digital Rights Management technologies. This worries a lot of the people who fear that it gives them the power to charge users more money for access in a “pay-per-view” (Eschenfelder, 2008, p. 206) style.

Since much of the writing on Digital Rights Management is done by information professionals, a lot of the research attempts to come at the issue from the point of view of the users of the digital
media. Therefore, there are much more scholarly works criticizing the “strong copyright” believers than there are those that are not. However, as Bohner (2008) states, “DRM may be a necessary evil.” In fact, Digital Rights Management will probably be a part of every digital environment in the future (Albin, et al., 2002). However, that does not mean that Digital Rights Management issues should not be vigorously debated and it's usage regulated in a way that benefits everyone involved.

Far and away the most often cited reason against Digital Rights Management is user dissatisfaction. For users, DRM can be confusing, time-consuming and poorly communicated. Many works protected by DRM require users to acquire special downloads or viewers, often at an extra charge, in order to view material, which forces them to jump through “unnecessary hoops” (Albin, et al., 2002). According to most authors, these hoops, while ensuring profits, will eventually turn users to other easier, and possibly illegal, means of getting the material they desire. Moreover, accessing works protected by Digital Rights Management schemes is often not just a matter of paying extra. It can take more time to access and can often be difficult for a lay user to adapt to using.

Another problem Digital Rights Management can create is interoperability. This problem occurs because different vendors have different DRM specifications that may be inaccessible to other entities. This means that many users may not be able to access content on different machines that support different DRM schemes “even if they have legitimately acquired the content and the second machine is a reputable vendor otherwise trusted by the original content provider” (Safavi-Naini, et al. 2004, p. 99).

There are several reasons why DRM interoperability is needed but the main issue is still with creating a “simple and seamless user experience” (Koenen, et al., 2004, p. 884). For Digital Rights Management to be successful, it needs to be flexible and able to work across several platforms. Koenen (2004) elucidates five barriers to current DRM interoperability. They are: overlapping de facto and formal standards; implementation technologies not interoperable; consumer devices cannot locate or connect to needed services; impedance mismatches between different trust and protection models; and no unified content governance.

The research and writings about interoperability are relatively limited. However, this is still a new problem that has evolved surrounding DRM and the research leads us to believe that it will become even more important in the coming years.

Digital Rights Management is also an issue that libraries are forced into dealing with. There is a lot of writing about how DRM affects libraries and what they are doing, or should be doing, about it.
Most of the research accepts that DRM will be a part of libraries for the foreseeable future because in order for libraries to meet users demands by offering the newest, most popular and up-to-date materials, they will have to agree to publishers DRM schemes. Publishers are increasingly seeing libraries as competitors and not mediators, which puts them at a disadvantage in bargaining (Bohner, 2008, p. 604).

Most of the articles that deal with DRM in libraries offer several pieces of advice for librarians, which mostly urge them to resist strong DRM restrictions. The literature on this topic in libraries is overwhelmingly in favor of ease of use and free access fearing that DRM will “undermine libraries' mission of preserving and providing access to knowledge, erode fair use rights and reduce innovation by limiting how information can be used and who can participate in the creation of new works” (Eschenfelder, 2008, p. 206). Libraries are meant to be a place of information and not a place where information is limited or restricted based on publishers preferences.

While the DRM is mostly looked at negatively in libraries, it does not necessarily have to be all bad. There are tentative examples throughout the research that suggests it can help them manage large numbers of rights associated with journals or other materials. Digital Rights Management could also be used to enhance their offerings, though with this option it is vitally important that there is full disclosure and transparency about the rights.

Even with all the issues surrounding Digital Rights Management, much of the research and writings have an overall positive tone to them. There is a definite theme to many of the writings whether they focus on one specific problem such as interoperability or whether they view DRM as a whole: they all want to make Digital Rights Management work in order to protect and serve everyone involved. Digital Rights Management is not good or bad; rather, it is how it is implemented that will determine the future of information. Artists and vendors need to be compensated fairly for their work while at the same time not restricting the free-flow of ideas, information and culture. Right now there is a need for a “novel approach” (Frattolillo, 2009, p. 492) to DRM and the research is headed in that direction. Though the ideas behind it are old, Digital Rights Management is still in the infancy stages. The research on it is growing and will no doubt improve it in the future.
Entry 1:


**Abstract:** “Purpose – The purpose of this paper is to answer the question of whether digital rights management (DRM) can be useful to libraries.

Design/methodology/approach – The paper provides a legal and technical description of DRM and its current and future opportunities.

Findings – The paper finds that digital rights management has possibilities that can be useful for libraries. But it is important that librarians become more active in the standardization and development of new ideas. Some examples are given.

Originality/value – The paper offers a realistic approach to DRM for libraries.”

**Annotation:** This paper is an excellent place to start for those wishing to learn more about DRM and libraries. It gives a description of all that is involved and, though critical of DRM, does call for it on a limited basis, especially if the library wants to stay current. Dr. Bohner gives many examples of how a librarian should view DRM and how libraries should inform their patrons on the issue.

**Search Strategy:** I selected the ArticleFirst, ECO and WilsonSelect databases in FirstSearch because of their relevance and wide scope of materials on the subject.

**Database:** ECO (FirstSearch)

**Method of Searching:** Since this was part of my initial search, I used a keyword search method.

**Search String:** (digital rights management or drm) and (challenge or best practice)

Entry 2:


**Abstract:** “In the current debate over copyright law, those who support maximum copyright
protections have advanced their agenda largely via the metaphor of ownership in physical property. As part of this metaphorical system, they have successfully argued that digital rights management (DRM) systems deserve legal protections befitting locked doors. This article is a discourse analysis of this related system of metaphors and of opponents’ metaphorical and non-metaphorical responses. Scholars who oppose the maximalist vision of copyright have devoted considerable thought to the problem of metaphors, including especially the search for metaphors that can challenge the metaphor of property. The article concludes there is work yet to be done on this count. As an incremental contribution to this conversation, the article suggests additional arguments, including additional metaphors in search of a new means to conceptualize copyright law.”

**Annotation:** This article is a good and in-depth source for understanding how the copyright debate is framed and how it extends itself to DRM. The author is clearly in favor of the “free culture” movement and focuses a lot of time on how to make their argument stronger. Though biased against the strong copyright movement, this article does an excellent job in explaining the underlying philosophical theories behind each side and is extensively footnoted.

**Search Strategy:** I selected the ArticleFirst, ECO and WilsonSelect databases in FirstSearch because of their relevance and wide scope of materials on the subject.

**Database:** ECO (FirstSearch)

**Method of Searching:** Since this was part of my initial search, I used a keyword search method.

**Search String:** (digital rights management or drm) and (challenge or best practice)

**Entry 3:**


**Abstract:** “Examines legal issues in relation to the digitization of media. Looks at the nature of digitization of content and its implications for copyright and libraries. Investigates exceptions to copyright protection, aspects of the extension of copyright protection and protection of rights
management of information and technology. Concludes with a possible agenda to the digital challenge.”

**Annotation:** This article does not focus as directly on DRM as the others in this bibliography. However, it contains an excellent discussion about copyright and libraries, which is easily extrapolated to DRM. The author mostly cites law cases and writings in this paper.

**Search Strategy:** I selected the ArticleFirst, ECO and WilsonSelect databases in FirstSearch because of their relevance and wide scope of materials on the subject.

**Database:** ECO (FirstSearch)

**Method of Searching:** Since this was part of my initial search, I used a keyword search method.

**Search String:** (digital rights management or drm) and (challenge or best practice)

**Entry 4:**


**Abstract:** “This study explored use restrictions found in licensed scholarly resources from the fields of history/art history, engineering, and health sciences. The analysis developed a framework of use restrictions that distinguishes between soft restrictions-which discourage use-and hard restrictions which strictly prevent use. Soft restrictions include: extent of use, obfuscation, omission, amalgamation, frustration, and warning. The study concludes that these soft restrictions are relatively common in licensed scholarly resources. Further, while hard restrictions are less common, they are not unknown. The study questions whether librarians should be doing more to challenge use restrictions.”

**Annotation:** This paper is unique in that it strongly urges librarians to resist DRM schemes and finds no redeeming values in them for anyone except publishers and vendors. The author is unapologetic in calling out librarians for not resisting what he calls “soft restrictions” and claims that DRM “hard restrictions” are going to be a serious problem soon. The focus here is mostly on academic libraries.
Search Strategy: I selected Social SciSearch because of the number of articles that relate to this topic. I began by using a controlled vocabulary search.

**Database:** Social SciSearch (Dialog)

**Method of Searching:** Controlled Vocabulary

**Search String:**

s challenge? Or best(practic)?

ss digital(rights)management or drm

s s1 and s2

**Entry 5:**


**Abstract:** “Has the challenge of unauthorized digital reproduction and distribution of copyright works been met by the use of so-called 'digital rights management' (DRM) technology - and what role will DRM play in publishing, including scholarly journal and learned publishing? This article explores the legal and commercial issues surrounding DRM from its analogue origins through to the latest market developments. It argues that the implementation of DRM in other media sectors provides valuable lessons to publishers. Acknowledging the practical challenges that DRM has faced, the article suggests that whilst DRM will offer an answer to 'the machine', it must form part of a flexible solution that adapts to the requirements of electronic publishing.”

**Annotation:** This authors begin by looking back at the influential paper by Charles Clark and attempt a response ten years later. The article is unique in that it is written from the perspective of the publishing industry yet still advocates for a “flexible” DRM solution. The author draws upon a lot of references and writes a paper in which both sides of the debate could find some merit.

**Search Strategy:** I selected Social SciSearch because of the number of articles that relate to this topic. I used a controlled vocabulary search.

**Database:** Social SciSearch (Dialog)
Method of Searching: Controlled Vocabulary

Search String: s challenge? Or best(practic?)
    ss digital()rights()management or drm
    s s1 and s2

Entry 6:


Abstract: “Current studies on Digital Rights Management (DRM) have focused on controlling access to and copies of contents, centered exclusively on the end of the value chain (end users). This focus has been oriented towards security and encryption as a means of solving the issue of illegal copying by purchasers. In this paper, we propose End-to-End Digital Rights Management (E2E DRM) that involves the protection of the content throughout the entire value chain. This concept is given form in the new technologies for representing intellectual property (IP) which, in a secure and unequivocal manner, identify the content at each point in the value chain: from the author to the end user, the content is identifiable in any of the transactions and statuses through which it passes. The key concept which E2E DRM must provide is not only the governability of access and copying, but also that of all the processes associated with the content business. We establish an E2E DRM model and architecture, and propose the R&D management of its design and implementation that makes it possible to protect content from content creator to purchaser. Finally, the paper also analyzes their impact from a global perspective.”

Annotation: This paper is only one with the particular scope of protecting content so strongly during it's movement from owner to user. The authors are clearly in favor of a strong DRM scheme and though they write with no thought towards how their E2E DRM might be used negatively, they do offer some unique ideas. They also look at the issue from a global perspective, which not many authors have done.

Search Strategy: I selected Social SciSearch because of the number of articles that relate to this topic.
I used a keyword search.

**Database:** Social SciSearch (Dialog)

**Method of Searching:** Controlled Vocabulary

**Search String:** s challeng? Or best()practic?

- ss digital()rights()management or drm
- s s1 and s2

**Entry 7:**


**Abstract:** “The answer to the machine is in the machine' - but what is the answer? At the end of the first decade of the 21st century we are seeing an explosion of rights management issues, as well as the emergence of many products and services that may provide all - or at least some - of the solution for publishers. International standards are also in place. Strong intellectual property protection is the cornerstone of an orderly digital marketplace. That market is for content + rights. Are our rights management practices fit for purpose? In this paper we provide an overview of rights management in publishing at the start of the 21st century, a summary of what is at stake, and an overview of the challenges and opportunities that await publishers.”

**Annotation:** This paper is another response to Charles Clark's paper on DRM from 1998. Taking the publishers perspective the author writes a sobering paper on DRM and what it does (and does not) look like today. The paper does not specifically answer any questions; however, it clearly lays out what the author views as serious challenges and problems for publishers concerning DRM in the future.

**Search Strategy:** I searched the Web of Science database because the wealth of content there and the ability to refine your search strategy precisely.

**Database:** Web of Science

**Method:** I began with topic and document type searching and then refined by subject area, publication year and document type again.
Search String: (digital rights management or drm) and challenges

Entry 8:


Abstract: “Three critical issues--a dramatic expansion of the scope, duration, and punitive nature of copyright laws; the ability of Digital Rights Management (DRM) systems to lock-down digital content in an unprecedented fashion; and the erosion of Net neutrality, which ensures that all Internet traffic is treated equally--are examined in detail and their potential impact on libraries is assessed. How legislatures, the courts, and the commercial marketplace treat these issues will strongly influence the future of digital information for good or ill.”

Annotation: This article is unique in that it examines DRM in the context of the weaker net neutrality laws and the implications that stem from it. There is a large discussion on how this affects libraries and the conclusion that it is not “good news.” This article makes no pretense at representing any side of the argument except that DRM should be abolished.

Search Strategy: I found this article citation searching the previous article.

Database: Web of Science

Method: Citation searching

Search String: N/A

Entry 9:


Abstract: “Since digital content can be perfectly replicated and distributed infinitely, publishers and other content originators are employing DRM and persistent protection to prevent the abuse of their
intellectual property. However, locking the content and controlling operations on the content have presented interesting challenges in supporting fair use in the digital world. Not only are libraries purchasing intellectual property, but they are also producing and maintaining it. Libraries are publishers. Presents the core components of DRM and the value the technology presents for libraries, and also scenarios to demonstrate where DRM may have improved content delivery to libraries, where library operations may be improved by the use of DRM, and offers critical information against which to ask publishers and content aggregators about their use of DRM with the content they sell to libraries.”

Annotation: This article is excellent for librarians or anyone interested in the information profession because it focuses on DRM and how it affects them. The authors are both well-known and respected in their fields of Library Science and DRM consulting. Their unique perspectives and different backgrounds make the paper and it's arguments strong.

Search Strategy: I used Google Scholar because I wanted to include some web-based searching techniques.

Database: Google Scholar

Method: Browsing

Search String: “digital rights management” or “drm” and “challenges” or “best practice”

Entry 10:


Abstract: “In the wake of the Digital Millennium Copyright Act of 1998, Digital Rights Management (DRM) systems are beginning to provide copyright protection for digital content placed online by magazine and book publishers, music companies, software and game producers and business-to-business companies. Creators and providers of digital content are increasingly able to control end users’ use of, and accessibility to, their products, and stand to gain huge profits from this capability. However, as DRM technologies evolve and develop, so does end user concern about restrictions to
their access to, and use of, information. The DRM industry must provide a balance between fair compensation for the creators of digital content and the rights of end users to access and use information.”

**Annotation:** This article is particularly good because it takes a logical approach and focuses on how DRM can be made useful for both content owners and users. The authors acknowledge that DRM is part of every digital environment and attempt to parse the challenges and uncertainties surrounding it in order to find a balance. This article also contains a valuable list of examples of existing DRM.

**Search Strategy:** I used Google Scholar because I wanted to include some web-based searching techniques.

**Database:** Google Scholar

**Method:** Browsing

**Search String:** “digital rights management” or “drm” and “challenges” or “best practice”

**Entry 11:**


**Abstract:** “Discusses how publishers improve digital document delivery while ensuring the protection of digital rights. Licensing models of electronic publishers; Usage and information management; Risks of digital document delivery; Examples of digital rights management technologies.”

**Annotation:** This article is mostly for the content owners and there is little discussion of any of the challenges that users face. Though short, it is informative and helps make the position of content owners clear.

**Search Strategy:** I used Google Scholar because I wanted to include some web-based searching techniques.

**Database:** Google Scholar
Method: Browsing

Search String: “digital rights management” or “drm” and “challenges” or “best practice”

Entry 12:


Abstract: “At the centre of the protection of intellectual property rights (IPRs) is a long history of political bargains struck between private rights to reward and the social benefit of information/knowledge diffusion. The historical dynamic of politics in this policy area has been to expand the rights of owners while circumscribing the public realm of information and knowledge. In recent decades the public domain has become merely a residual, all that is left when all other rights (as constructed by IPRs) have been exercised. The advent of digital rights management (DRM) technologies has disturbed a reasonably legitimate politico-legal settlement over "fair use," challenging the existing balance between the rights of "creators" and the interests of users. The breakdown of the norms underpinning IPRs has prompted renewed debate regarding their legitimacy. Although it is technological change that has enhanced not only the ability to copy but also the potential to control the distribution of content, this paper suggests that this argument will not be won or lost in the realm of technology. Rather, new technologies return the question of the control of knowledge and information (content) to the realm of politics.”

Annotation: This paper is important because it takes a political viewpoint of the issues surrounding DRM. The author is writing for an online, peer-reviewed journal that anyone can access. Therefore, the writing is a bit more accessible but also more radical. This is the only paper I have found that is so purely political in scope, which makes it unique and important to read.

Search Strategy: I used Google Scholar because I wanted to include some web-based searching techniques.

Database: Google Scholar

Method: I used the “related” search strategy in Google Scholar to find articles similar to what I had already found useful.
Entry 13:


Abstract: “The inherently controlled nature of digital rights management systems does little to promote inter-operability of systems provided by different vendors. In this paper, we consider import and export functionality by which multimedia protected by one digital rights management regime can be made available to a multimedia device that supports a different digital rights management regime, without compromising the protection afforded to the content under the original regime. We first identify specific issues to be addressed by developers of digital rights management import/export regimes and outline a variety of methods by which these regimes may be implemented. We then apply our observations to the specific example of import and export of content between the digital rights management regimes defined by the Motion Picture Exports Group and the Open Mobile Alliance.”

Annotation: This is another important paper dealing with the issue of interoperability in DRM. Realizing that interoperability is a major problem, they seek to fix that while still maintaining control of the content. This is a good article to read in conjunction with Entry 15.

Search Strategy: I searched the AMC Digital Library because it has excellent search features and many full-text articles dating back to 1985.

Database: AMC Digital Library

Method: Word/Phrase search

Search String: All – digital rights management, drm; Any – challenges, best practices; Pushished since – 1998; Required: full text

Entry 14:

Abstract: “Digital Rights Management technologies in the field of copyright protection should meet four objectives: • give consumers new freedom to enjoy music and other forms of content; • give copyright owners and other value chain participants the means to manage and protect their rights in published works; • implement elements of law, such as copyright exceptions, that ensure that rights are managed in accordance with the public interest; • provide users with the means to manage their legitimate personal rights and interests. We sketch how these goals can be achieved with current technology for peer-to-peer Digital Rights Management (DRM). This technology can ensure the neutrality, security, commercial reliability, and trusted interoperability of applications and services used to protect and manage rights in all forms of information, including creative works protected by copyright. The rapidly evolving area of digital commerce in information requires a framework of commercial trust comparable in scope, and at least as reliable, as the systems of trust that underpin commerce in the physical world.”

Annotation: Though this article is older it is no less valuable. It gives a great framework of where the DRM debate has been and is going and offers four specific criteria the author thinks will make DRM a useful tool that enhances communication without creating problems. When read in conjunction with newer articles it gives a good feel for how the debate has changed and, more importantly, how it has stayed the same.

Search Strategy: I searched the AMC Digital Library because it has excellent search features and many full-text articles dating back to 1985.

Database: AMC Digital Library

Method: Word/Phrase search

Search String: All – digital rights management, drm; Any – challenges, best practices; Pushished since – 1998; Required: full text

Entry 15:

Abstract: “This paper discusses interoperability of digital rights management (DRM) systems. We start by describing a basic reference model for DRM. The cause of interoperability is served by understanding and circumscribing what DRM is "in the whole." Then we outline and contrast three different approaches to achieving interoperability. One approach relies on flexible network services to provide functionality where it is needed, perhaps by bridging different systems. We describe an experimental service orchestration system (NEMO) that enables such an approach.”

Annotation: This article is important in DRM research because it deals with interoperability. This is an issue that is mentioned in a lot of the research as a critique of DRM but never given much ink. The authors attempt to evaluate three types of DRM interoperability in order to understand how to get the best practice. This article is best read in conjunction with Entry 13.

Search Strategy: I chose to search IEEE Xplore because of all the available information on the topic.

Database: IEEE Xplore Digital Library

Method: I performed a metadata search.

Search String: “digital rights management or drm” in title

Entry 16:


Abstract: “Modern digital rights management (DRM) systems are often developed as Web software platforms designed as service oriented architectures composed of a federation of coordinated Web entities that play distinct roles and dynamically interact within a trusted environment. Such a design approach requires that trust relationships have to be dynamically established across multiple and heterogeneous organizational boundaries so as to facilitate an "on-the-fly" resource sharing. This introduces non-trivial security architectural requirements concerning with the mechanisms that allow different security realms of Web entities to be federated. This paper presents a DRM system developed as a Web software platform designed to give a specific support both to the interaction of the Web
entities involved in the platform and to the development of the trusted relationships among them, in a much more flexible way than before, dynamically and with minimal overheads and shared infrastructure.”

Annotation: This article is more technical than the others included here. However, it still offers valuable information on web-based DRM. The authors are more interested in designing quality DRM than in the debate over copyright and legality issues because they come from an engineering background. This paper is a good balance to the others included in this bibliography.

Search Strategy: I chose to search IEEE Xplore because of all the available information on the topic.
Database: IEEE Xplore Digital Library
Method: I found this article by following the author keywords from the Entry 15.
Search String: N/A

Entry 17:


Abstract: “This effort has focused on digital rights expression languages, i.e., languages in which rights can be expressed and communicated among cooperating technologies. Digital rights themselves exist as policy or law and are therefore not within the scope of a standards development organization.”

Annotation: This paper is important because it brings together many leading experts to examine DRM from many perspectives. The authors focus a lot of time on how it is expressed and how it affects education. They make several good recommendations at the end.

Search Strategy: I chose to search IEEE Xplore because of all the available information on the topic.
Database: IEEE Xplore Digital Library
Method: Footnote Chasing on Entry 16.
Entry 18:


**Abstract:** “As authentication and access management systems and procedures in libraries have transitioned from paper to digital and have become more ubiquitous, new considerations regarding the ethical implications of these systems have arisen. Digital authentication and access management raises concerns about privacy, identifiability, and disclosure of patron-related data. Library patron confidentiality is protected by law in a number of states. But privacy considerations have often been missing from technical and other authentication discussions, possibly due to a general lack of best practice guidelines addressing these challenging issues. This article analyzes the privacy and ethics issues that authentication and access management in libraries raise, reviews applicability of the canon of Fair Information Practices for ethical guidance in library policies, and discusses best practices for libraries.”

**Annotation:** This article is unique because it is one of the few that looks at privacy-related issues, a topic that is not as well researched yet. The author is a well-known researcher and writes extensively about privacy.

**Search Strategy:** I selected INFOSCI in Dialog because of the number of articles that relate to this topic. I used a keyword search.

**Database:** 438 Library Literature and Information Science (Dialog)

**Method of Searching:** Controlled Vocabulary

**Search String:** s challeng? Or best()practic?  
  ss digital()rights()management/de or drm/de  
  s s1 and s2
Conclusion

For the last several months Digital Rights Management has been a topic of interest for me. I had heard and read about some of the issues surrounding it but never gave it much thought until I began looking into purchasing an eReader. When I began to learn about some of the problems that DRM posed for users, I became quite disillusioned with the notion. Working on this annotated bibliography has been extremely beneficial in helping me form a stronger and more informed opinion on the topic. Most of my previous knowledge was gathered from blog post or editorials. I had not read any scholarly research on the topic at all and now realize that I knew much less about DRM than there is to know.

After reading all these articles, I better able to explain my position on DRM issues. I have always agreed with the “free culture” argument against DRM and copyright. While all of my research has not changed my mind in a drastic way, I am more open to the idea of rational DRM in order to protect content. I still think that, as many articles pointed out, DRM is not even close to ideal yet. There are too many interoperability issues, too many problems with digital preservation and it's still much easier for people who need digital media to open up a torrent site and download it for free than to go through the hassle that DRM can create. However, I also am quite impressed by all the good
Lainhart

scholarly work that has been dedicated to this topic and to making DRM an useful tool rather than a roadblock.

Gathering together materials for the bibliography was difficult at first. However, as I became better at searching for what I wanted, articles began to flow and I found myself actually forced to exclude some. When I first began my search, I would never have imagined that would be the case. I thought I might have trouble finding enough sources. Nevertheless, as I got better and more comfortable searching my topic and using all the different methods, I found myself worrying more about how to choose what articles to include in order to have a well-rounded bibliography that would include relevant information.

After working on this project I have learned how important note-taking is during this process. I kept a notebook with my searches, methods and strings used. This allowed me to duplicate them in other databases or tweak them to find more sources later. Randomly searching databases without any method in mind is a sure way to get a poorly formed bibliography with articles that do not work well together or are not entirely on topic.

I feel that after this assignment I am able to find information from a variety of different sources. It is so valuable to be forced into learning for yourself how to best go about gathering information. I actually look forward to doing more research like this in the future and know that my next bibliography will be so much better because I will not be figuring it out along the way and will be able to give myself enough time and organization to succeed.