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WHERE WEB 2.0 AND LEGAL INFORMATION INTERSECT: ADJUSTING COURSE WITHOUT GETTING LOST

Matthew M. Morrison

INTRODUCTION

Coined but a few years ago, the term “Web 2.0” is heard almost daily by all but those who are living “off the grid.” The term has even invaded the lexicon of the conservative world of law. But what is the impact of Web 2.0 on the law, on how legal information is created, disseminated, and accessed? Moreover, can Web 2.0 change the very nature of legal information and authority thus changing the definition of law and the process of legal research?

This article proceeds in four parts. In part I, the traditional model of legal information is reviewed to set the foundation of the complex legal information environment that exists today. Part II discusses specific technologies included within Web 2.0 and considers their impact upon the evolution of legal information. In part III, studies of current and future law students and other Web 2.0 users are reviewed. Web 2.0 technologies present a participatory phenomenon; thus, a better understanding of the actual and potential participants is necessary. Finally, in part IV, the implications for legal research education are considered.

I. THE TRADITIONAL MODEL

A. When Information was Ink on Paper

Traditionally, legal information was disseminated within an established structure. This structure provided the authoritative information used within the legal system and the structure itself was given warrant.¹ The sources that constituted this structure were recognized as stable legal authorities.² The sources created a “container” of information

and this container became synonymous with the law and even shaped the substance of the law.³

Private publishers, most notably the West Publishing Company, created this structure and produced the most important sources: the West case reporters and the West Key Number Digest.⁴ Annotated codes, treatises, encyclopedias, and law reviews were the other main components of the container of authority.⁵ In addition to these primary sources was the Shepard's Citator system. This private publication was an essential item in the container because it validated judicial authority.⁶

The singular role held by these privately published sources is quite remarkable. As Robert Berring has stated, it "allowed government to abdicate its natural role as the provider and authenticator of legal information."⁷ Moreover, legal research courses instructed students in using the container without any attention to how the information was produced, or why or how the container held its authoritative status.⁸

The traditional model of legal information provided the context in which members of the legal profession and academy did their work.⁹ This shared context allowed lawyers¹⁰ to communicate effectively and efficiently.¹¹ The traditional container of authority, in setting this context, provided the vehicle for communicating and transmitting the legal paradigm to law students and scholars, and to the bench and bar.¹² Barbara Bintliff has noted that the sources that constituted the traditional model of legal authority held information assembled by lawyers working "in a shared context gained through education and practice in the prevailing paradigm."¹³ She argued that this context was essential to effective legal research as "it allowed legal researchers to

investigate and experiment, to find and use information, within the paradigm defined by legal professionals.”¹⁴

To access needed material within the traditional container of authority, researchers had a few principal tools at their disposal. Indexes and tables of contents, as well as organizing devices such as topics and sections, provided materials with a visually accessible structure.¹⁵ The most significant access tool was the West Digest System. After developing the regional reporters, West needed to provide a systematic means of access to relevant cases.¹⁶ West then developed a system of headnotes and indexing to enable researchers to locate specific points of law within the growing volume of written precedent,¹⁷ this system being the West Key Number Digest. As a sophisticated means of classifying legal concepts, the Digest became a part of the established container of cognitive legal authority by setting the boundaries of that container.¹⁸ With the endorsement of the American Bar Association, the Key Number Digest gained recognition as an essential part of established legal authority.¹⁹

The Digest System has not been without criticism while it has been the subject of much debate. In its powerful role in defining the boundaries of legal authority, the Digest, some would argue, is a “cage into which the law itself [must] fit.”²⁰ Spencer L. Simons has explicated well the critical debate of the Digest System that has been conducted in the scholarly literature.²¹ Scholars Richard Delgado and Jean Stefancic, Steven Barkan, and Robert Berring have leveled criticism against the Digest System, while Barbara Bintliff, Fritz Snyder, and Peter Schanck have found great utility in the organizational power of the Digest.²²

As Simons explains, Delgado and Stefancic see the Digest combined with the Library of Congress Subject Headings and the standard legal periodical indexes (Index to Legal Periodicals and Current Law Index) as forming a “triple-helix.”²³ Because of the triple-helix minorities and disfavored groups cannot find voice in the legal system: the helix causes the existing structure to replicate itself thus shutting out novel thought.²⁴ Delgado and Stefancic have written that the classification tools of the established container of authority “function like eyeglasses that we have worn for a long time,” which “enable us to see better, but conceal the possibility that we might be able to see even better with a different pair.”²⁵ Yet, even this new pair of glasses becomes a limitation itself; we never break from the inherent confines of the established classification tools.²⁶

As Simons notes, Steven Barkan has also criticized the Digest System as conservative.²⁷ For Barkan, the established container of authority has reinforced dominant ideologies.²⁸ The Digest System and the other standard access tools limit the field of inquiry, while the established categories that define legal thought maintain the law’s conservative nature.²⁹ Similarly, as Simons explains, Robert Berring has argued that the taxonomy of the Digest System set the categories of legal concepts available to advocates, while judicial attempts to accommodate new legal theories were reduced to anomaly by the “normalizing process of editorial assignment.”³⁰

On the opposing side of the Digest debate, Barbara Bintliff has argued that legal analysis is enhanced by the Digest System, with Fritz Snyder in agreement, contending that the Digest reveals the meaning of cases by providing a substantive context for them.³¹ For Bintliff, the Digest structure is a part of a shared context that is

essential to effective legal understanding.³² The Digest establishes a framework within which lawyers can be flexible, creative, and effective without foundering in a sea of legal concepts.³³

Peter Schanck, another defender of the Digest System, has argued that lawyers recognize a role for precedent and that a standard classification scheme provides an efficient means for finding that precedent.³⁴ While some critics of the Digest System are troubled by its formalist element, Schanck has responded that lawyers are well-versed in Legal Realism³⁵ and know that judicial decision-making is not deterministic.³⁶ Moreover, a formalist approach is appropriate for teaching legal research to uninitiated first-year law students.³⁷ Schanck also minimizes the claim that the Digest System is conservative and reinforces the status quo by arguing that the system has little to no impact on the content or understanding of the law and the American legal system.³⁸

Simons has stated that Schanck's contentions "accord with [his] experiences and observations."³⁹ Counter to the critics, Simons does not find the Digest and its categories to be a threat to the development of the law; in fact, outdated topics fall out of use.⁴⁰ The Digest continues to be a powerfully effective case-finding tool with its continued utility perhaps explaining the resistance of some to the "centrifugal forces of computerization."⁴¹ Ultimately, the Digest offers practicality to a pragmatic academy and profession by providing an effective classification system for ordering concepts.⁴²

For Simons, the Digest offers a path across uncertain terrain. Students must use an established classification system to navigate through a world of indeterminacy.⁴³ The classification schemes of the traditional model of legal information may be flawed, but they offer a method for mastering indeterminacy.⁴⁴

B. The Advent of CALR

Long before the emergence of Web 2.0, the traditional print-based model of legal information was confronted with computer-assisted legal research (CALR). The development of Lexis, Westlaw, and Internet-based legal materials dramatically altered how the law is accessed and researched. In 2001, Carol M. Bast and Ransford C. Pyle wrote that CALR would precipitate a shift to a new legal research paradigm—this new paradigm would be the computer code that underlies CALR.⁴⁵ Many scholars would agree that computers and computer databases fundamentally altered the container of legal sources and dissolved the boundaries of the established classification scheme. Other commentators are less convinced of such a development.

Did CALR challenge the established role of the traditional model of legal information by providing lawyers the opportunity to conceive anew the shape and contours of legal authority? Or, was it merely the same book in a new cover? It pays to consider these questions before discussing the impact of Web 2.0.

Allan Hanson contends that CALR eroded boundaries both within law and between law and non-law disciplines.⁴⁶ Hanson echoes Bast and Pyle finding that the paradigm shift has led to a new conception of law as a loosely organized collection of facts and doctrines.⁴⁷ For these scholars, electronic research allows a move from formalism to realism leading to an evolution in legal authority itself as legal research practice abandons the traditional model.⁴⁸

In contrast, Delgado and Stefancic contend that computer-based research has not freed us from the constraints of the traditional model.⁴⁹ These scholars have gone so far to say that CALR “may in fact impede the search for new legal ideas, slow the pace of

law reform, and make the legal system less, not more, just.”⁵⁰ Certainly, CALR is easy to perform without leaving one’s office, but it provides no advantage in cases that do not fit into existing categories or that call for novel thought.⁵¹ While computers handle fact-specific queries quite well, the advantage is lost when working in the abstract.⁵² Harkening back to their concern with the triple-helix,⁵³ Delgado and Stefancic contend that CALR is at its worst when tackling a new legal issue.⁵⁴ Ultimately, online searching is hampered by remnants of the traditional model, which simply reappear in the electronic medium.⁵⁵

Expressing a mix of views is Robert Berring. According to Berring, CALR was not a catalyst for a radical transformation of the legal information system.⁵⁶ Lexis and Westlaw were built on the old foundations: the text from cases was simply transferred from print pages to the online environment, while Shepard’s was similarly reproduced.⁵⁷ Indeed, the conservative nature of the new systems helped them to gain acceptance; however, the established cognitive authority survived.⁵⁸ Yet, in previous commentary, Berring opined that with the advent of CALR, things were no longer the same.⁵⁹ CALR was a significant advance because case law could be mined free from the standard classification system.⁶⁰ Even though practitioners continued to use the traditional categorical structure, this “old system” was effectively gone.⁶¹ Perhaps the most intriguing passage from his 1987 article is this:

The last stage is before us. We are at the point where the ability to search without an imposed structure will nakedly expose the myth of the common law and the beauty of the seamless web to the general legal world. There is no underlying rational structure to the law other than what the positivists give it. Allowing people to go online in free text liberates them from any requirement to fit their thoughts into a pre-existing structure. Individual researchers are able to order legal doctrine as it suits their needs, but in doing so they must concentrate on narrower areas of law in order to develop the expertise and sophisticated vocabulary free text searching requires. As a result, law is likely to atomize and specialize even further.

This could create a crisis in legal thinking. . . . As new generations of lawyers find themselves practicing law without the old conceptual constraints, they will take law into more positivist, specialized categories. This could be the signal for a new examination of the meaning of law in our society, or it could be the final stage in our devolution into plumbers.⁶²

Remarkably, while Berring was opining about relatively rudimentary CALR systems, he could just as easily have been addressing the implications of Web 2.0 applications and how they may impact the structure and conception of legal information and authority.

II. WEB 2.0 AND ITS IMPLICATIONS

The term is heard regularly in the news and popular media, and it is seen on the web and in scholarly literature, but what is “Web 2.0”? While Web 2.0 may elude precise definition, it is possible to posit a useful working definition. The term was coined in 2004 by Dale Dougherty and made popular by Tim O’Reilly of O’Reilly Media.⁶³ The term was used to describe the various trends and business models left standing following the technology market implosion of the late 1990s.⁶⁴ These trends and businesses centered on applications that form the “participatory web”⁶⁵ and are “collaborative in nature, interactive, dynamic,” and blur the line “between the creation and consumption of content.”⁶⁶ As Chris Dede has stated, Web 2.0 encompasses “a shift from the presentation of material by website providers to the active co-construction of resources by communities of contributors.”⁶⁷

A. Applications that are “Web 2.0”

Web 2.0 includes a range of interactive technologies including, blogs, wikis, podcasts, social bookmarking or “tagging,” syndication, multimedia sharing, and social networking software.⁶⁸ Specific applications include Wikipedia, Technorati, MySpace, Facebook, LinkedIn, RSS, del.icio.us, Digg, and YouTube. To focus the discussion, wikis, blogs, tagging, and social networking will be reviewed individually. This is done

to distill the aspects of collaboration and user-generated and organized content that are most significant to understanding the potential impact of Web 2.0 on the traditional model of legal information and cognitive authority.

Wikis. Embodying the open collaboration of Web 2.0 is the wiki. A wiki is one or more web pages that can be edited by anyone allowed access, and this editing is accomplished without sophisticated web authoring skills, but instead with an easily used online editing tool.⁶⁹ Features include hypertext linking that allows users to easily navigate multiple pages; a history function so that users may access previous versions of pages; and components that allow for commentary on or discussion of the content of specific pages. While openness makes wikis vulnerable to mischief, the built in self-moderation enables mistakes and vandalism to be quickly rectified.⁷⁰

An example of a wiki that is familiar to most is Wikipedia. This comprehensive online resource calls itself “the free encyclopedia that anyone can edit.”⁷¹ Thus, it represents the essence of the open and collaborative nature of Web 2.0 applications. The popularity of Wikipedia is clear. According to a 2007 survey done by the Pew Internet & American Life Project, thirty-six per cent of American adult internet users consult Wikipedia.⁷² Interestingly, the resource is more popular with the well-educated: those with college degrees use Wikipedia at more than twice the rate of those with a high school education.⁷³ The acceptance of this wiki resource is quite remarkable and is attributable to three factors. First, Wikipedia’s scope and volume are both enormous; second, Wikipedia pages rank near the top in Google search results;⁷⁴ finally, finding information online is simply quite convenient for people.⁷⁵

Blogs. The blog (web-log) is another technology that is “fundamentally 2.0.”⁷⁶ The term “blog” was coined in 1997 and refers to a web page consisting of chronologically displayed posts—the posts are paragraphs of opinion, news and information, personal stories, or links to other sites.⁷⁷ According to Technorati,⁷⁸ there are 175,000 new blogs created each day, and bloggers make 1.6 million posts per day.⁷⁹ A recent survey conducted by the Joint Information Systems Committee (JISC) found that approximately twenty-five to sixty per cent of respondents read blogs depending upon their age with the under 18 and the 18-24 age groups having the most blog readers.⁸⁰ As the surveyors conclude, “writing and reading blogs is no longer a niche activity.”⁸¹

The popularity of blogs is attributable to both the conversational and immediacy aspects. Blogging brings “journalism time” to web authoring combined with the opportunity for readers to respond to the original author.⁸² As well, extensive linking creates a larger, while still immediate, online conversation.⁸³ However, in his JISC report on Web 2.0, Paul Anderson notes that there are inherent problems with two types of blog linking: the “permalink” and the “trackback.”⁸⁴ The permalink allows a user to access a post if it is moved within the blog database, but also if the post is re-named or even if its content has changed.⁸⁵ Version control is therefore lacking, so there is no guarantee of stable content.⁸⁶ Trackback enriches the connectivity of blogging by notifying a blogger when another blog has referenced one of his posts, while a permalink is created on the referred blog post back to the referring post.⁸⁷ This is a highly useful tool, but it does not work unless it is enabled on both blogs.⁸⁸

Social bookmarking/“tagging.” A tag is a keyword assigned by a user to a web page, image, video, or other item online.⁸⁹ Tags allow a user to describe an object as they wish with as many keywords as they wish, thus creating a user-generated organizational structure for online content. As Jack Maness has said, tagging “enables users to create subject headings for the object at hand.”⁹⁰ While tagging has not yet seen the usage levels of other Web 2.0 applications,⁹¹ significant growth potential exists.⁹² Major organizations are now exploring tagging as a tool for knowledge management that is conceptually accessible to users.⁹³

Tagging went large-scale when the del.icio.us web site was launched.⁹⁴ Deli.icio.us., a social bookmarking service, allows users to centrally store their web bookmarks while tagging each bookmark with one or more keywords, thus freeing bookmarking from the folder-based organization available on web browsers.⁹⁵ So, a user can tag a web page about Thoroughbred horses with “horse,” “Thoroughbred,” and “racing” rather than storing it in a folder simply labeled “Horses.” The collection of tags a user generates for their individual use is known as a “folksonomy.”⁹⁶

Tagging now includes “tag clouds.” Tag clouds provide a way to display the tags applied to an object by multiple users. A tagging service gathers the data on the frequency with which tags are used to describe an object and collates the tags into a “cloud” that graphically represents the more frequently used tags in larger text.⁹⁷ The collected vocabulary found in a tag cloud is sometimes referred to as a “collabulary.”⁹⁸

Social networking. Social networking applications are perhaps the best known of the Web 2.0 technologies. Facebook and MySpace have been splashed over the media as examples of the online lives of today’s younger generations. The recent JISC survey⁹⁹

found that over sixty per cent of the respondents in the under 18 age group and half of those in the 18-24 age group used MySpace, while approximately a quarter of those in the 18-24 age group used Facebook.¹⁰⁰ These services allow users to create profiles to share interests, personalities, and the details of daily life with other users and let them engage in various Web 2.0 activities, such as messaging, tagging, blogging, and media sharing.¹⁰¹ Both Facebook and MySpace are free and useful for finding friends, colleagues, and former classmates.¹⁰² They also allow users to express their social identity. However, the degree to which an online identity comports with reality is unknown.

A social networking service that is targeted to professionals is LinkedIn. On LinkedIn, users create profiles with the purpose of connecting to former and potential clients, colleagues, and partners.¹⁰³ The service lets users have both “second degree connections” and “third degree connections.”¹⁰⁴ A user has direct connections and these connections have direct connections, who, in turn, have direct connections.¹⁰⁵ Thus, LinkedIn provides a way for users to connect to people of interest through a mutual contact rather than resorting to making a “cold call.” LinkedIn has proven to be a successful service boasting 23 million members in 150 countries and projected 2008 revenues of \$100 million.¹⁰⁶

The Web 2.0 technologies described above are significant to the evolution of legal information and authority for two reasons. First, they are either already well-accepted by users, especially more-educated ones, or they show significant potential for greater acceptance. Second, they emphasize participation by and collaboration among individuals operating outside of traditional modes of creating, organizing, and communicating information. As these technologies intersect with the dissemination and

use of legal information both in practice and academically, the implications of such intersection must be considered.

B. Implications of the Applications

Expansion of expertise. The collaborative aspect of Web 2.0 applications facilitates an explosion in content creation.¹⁰⁷ With the ease of online publishing, anyone with a computer and an Internet connection can put their ideas and opinions on the Web for anyone to read. Social networking allows individuals to shed anonymity and be recognized. Law is not exempt from these phenomena. Blogs, wikis, and social networking combine to open the pool of legal experts to many more participants.¹⁰⁸ These new “experts” have channels through which to disseminate their expertise and spaces in which to develop and expand their expertise.

Web 2.0 redefines “knowledge.” Knowledge is no longer rooted in authenticated materials that transmit findings compiled by recognized experts; instead, it is based on a consensus that combines facts with opinions, values, and beliefs.¹⁰⁹ In a Web 2.0 world, valid knowledge that underpins expertise is not obtained from established texts holding the writings of properly credentialed individuals; rather, it comes from “education, experience, rhetorical fluency, reputation, or perceived spiritual authority” that is recognized as valuable by the community.¹¹⁰ Kate Wittenberg underscores these ideas when writing about student use of networked environments, saying that “it may be the case that the status of being admitted into a community by its members exceeds the credibility gained through “outside” peer review.”¹¹¹

In Web 2.0, the community—the “crowd”—decides the what, why, and by whom of content creation. The authority held by established institutions is usurped by “the

surging wisdom of crowds.”¹¹² The news media provide an interesting example. The Sun newspaper and other media outlets now accept copy and photos from members of the public who use various devices to engage in “citizen journalism.”¹¹³ This interaction between the public and the media transforms news into a “conversation” that has the effect of altering the perception of how the authority to “know” is established and by whom.¹¹⁴ Thus, an obvious conclusion is that if the established media titans no longer have exclusive authority in determining what “the news” is, then traditional sources of legal information and authority can be similarly altered.

Evolution in access. Perhaps more important than the expanded scale of content creation is the question of how the content is accessed. The fundamental role played by the West Digest and other access tools is undeniable. What then is the future of information access in the Web 2.0 environment?

The Web provides a low-cost alternative for the mass dissemination of information and this includes legal information. Government entities have made use of web sites to broadly distribute cases, statutes, and administrative materials. It is also clear that secondary source material is proliferating online and Web 2.0 applications will have a greater impact upon the definition and scope of secondary legal authority than on primary authority.

Blogs and wikis impact access to legal information simply by enhancing availability.¹¹⁵ In an article on the changing standard of competence for legal research in the online environment, Ellie Margolis posits that the sheer availability of non-legal materials on the Internet may soon alter the standard of research to encompass such materials.¹¹⁶ Moreover, blogs are increasingly popular in the legal academy: the

American Bar Association lists 1000 plus blogs written by lawyers.¹¹⁷ Also, Margolis notes that judges, especially in federal courts, are increasingly citing Wikipedia.¹¹⁸

Access to web sources is increasingly facilitated by tagging. For retrieval of web-based information, systems like Google have their limitations. Google has a basic set of search options, its ranking method is influenced by commercial factors, and it automatically searches web pages indexing almost every word found on them.¹¹⁹ While Google is more than satisfactory for most searchers, indexing experts are critical of both its recall and precision.¹²⁰

Tagging can help to overcome the limitations of search engines by reintroducing human involvement in indexing. Of course, the humans involved are not professional indexers applying terms found in highly refined controlled vocabularies. The taggers are members of the online community describing objects found on the web with keywords that make sense to them.

More significant is the social dimension of tagging. Through tagging sites such as del.icio.us, tags are seen by others and shared across the community; thus, an object on the web acquires an evolving set of tags that ultimately define that object.¹²¹ No longer does one person fit a resource into a specific category; rather, the resource is described through a process of “consensual classification” so that it acquires a democratically created identity.¹²² Tag “clouds” exemplify this process by taking an object’s most-often used tags and featuring them prominently.¹²³

Traditionalists question the value of tagging’s consensual classification process. Applying additional descriptive keywords to an object does not necessarily improve retrieval.¹²⁴ As Johncocks writes, “simply throwing more keywords at documents is

faintly reminiscent of giving typewriters to monkeys.”¹²⁵ Tags, operating outside the defined world of a controlled vocabulary, can cause misunderstanding by being ambiguous, while causing incomplete understanding due to poor recall.¹²⁶ Moreover, the social aspect of tagging, represented well by tag “clouds,” risks silencing minority opinion,¹²⁷ while arriving at what is perceived to be the “true” description of an object through user consensus.¹²⁸

What then does it mean when Web 2.0 collides with legal information and authority? What happens to the conception of legal authority when the traditional structure erodes giving way to a model based on an expanding base of user-generated content featuring easy physical access and intellectual access enabled by user-created and community-assigned descriptors that operate beyond a closed, controlled organization? Is authority itself redefined?

As described above, materials in the traditional legal information system were found in reporters, annotated codes, legal encyclopedias and the like. The publishers, in their quasi-official role, limited content to that created by persons with recognized authority or expertise, and packaged the content in a container that itself was warranted as the source of law. Now, Web 2.0 applications, while neither eliminating nor subsuming the container, provide a significant alternative to it. As members of the bench and bar access and, in turn, rely upon community-created content, this content will gain recognition as legal authority thus reducing the role of the traditional information model.

In a Web 2.0 world, accepted authority does not have to be created by a small cadre of experts publishing in an established set of books and CALR databases. Instead, the range of information that is “the law” is broad, diverse, and dynamic and is proffered

by individuals whose expertise may be based upon unorthodox criteria, but is nevertheless recognized by a broad range of community participants.

In a Web 2.0 environment, legal information is not constrained by the traditional publishing channels, and access to the information is freed from a structured classification scheme. In fact, the categorization is informal and dynamic. Tags replace a controlled vocabulary—created by a cadre of legal indexers—with colloquialisms. This is remarkable: if the Digest classification actually shapes what law is by forcing both the law and its conception into predetermined categories, then what shape will law take when access is based upon user-assigned keywords?

Of course, it remains to be seen if tagging will take hold in the legal environment. However, as the volume of user-generated content continues to grow, a means of access other than search engines will likely arise. Moreover, lawyers are already Web 2.0 users: law professors are blogging, practicing attorneys are members of LinkedIn, and judges are turning to Wikipedia. As lawyers have grown more comfortable with Lexis and Westlaw, the vendors have added features to enhance access and organization of online material.¹²⁹ Similarly, as lawyers continue to grow comfortable with Web 2.0 they will need and desire additional access and organization tools with tagging being a convenient option.

To be sure, the Web 2.0 vision of legal information will be comfort to some while troublesome to others. For Delgado and Stefancic, the traditional container of legal authority works to exclude minorities and disfavored groups from the legal system.¹³⁰ Moreover, CALR is no panacea—it does not necessarily improve upon the limitations of print research.¹³¹ However, exposure to diverse points of view can be enhanced by Web

2.0. If folksonomy replaces taxonomy as a means of organizing legal information, then judges and attorneys will encounter a broader range of legal ideas and theories that exist beyond the decades-old classification schemes built upon the traditional conceptions of Anglo-American law.

On the other hand, commentators such as Bintliff may find problems with the Web 2.0 world. For Bintliff, the traditional container of legal information provides a safe framework within which lawyers can explore theories while also providing the shared context necessary for effective communication and understanding of the law.¹³² While community-based organizing of information is better than no order at all, such organization is far from the hierarchical structure of the Digest. Moreover, an open classification-by-consensus process does not ameliorate the issue of different researchers accessing content with different protocols; when researchers operate outside a closed universe of sources that are accessed with an established, singular classification scheme, then context is lost and communication suffers.¹³³ An environment based on free and open discovery not only fails to address these concerns, but actually exacerbates them.

III. CURRENT AND FUTURE LAW STUDENTS

Web 2.0 embodies a participatory environment. But, what do we know about these participants? Specifically, what can studies of current law students, undergraduates, and high school students tell us about the Web 2.0 orientation of future lawyers?

A recent study was conducted of the information literacy of incoming law students.¹³⁴ The results are interesting and present some important contrasts. As may be expected, the students were avid readers,¹³⁵ but were not avid gamers—they spent little to

no time playing computer or video games.¹³⁶ However, these students are not averse to technology: The majority found online sources most important for news information, and they made extensive use of written electronic communication, including e-mail, instant messaging, and texting.¹³⁷

When researching, a majority of respondents used the Internet finding it to be valuable for legal research.¹³⁸ Yet, unlike students generally, the law students made significantly greater use of the physical library finding that it remains relevant to their studies.¹³⁹ While this belief in the physical library is comfort to many, these same law students relied heavily upon Internet search engines expressing confidence in the obtained results.¹⁴⁰ Interestingly, study respondents believed that they could obtain *relevant* material from the Internet, but were less sure of the information's *accuracy* and *authority*.¹⁴¹ Thus, it seems that, for these students, relevancy outweighs accuracy and authority so much so that they will rely extensively upon the Internet despite the perceived shortcomings. Does this mean that the ease of use of Web 2.0 will trump concerns with the accuracy and authority of sources thus speeding the evolution of the concept of authority?¹⁴²

The information we have about current law student use of information technologies is limited, although the Gallacher study reveals both contrasts and concerns that perhaps confirm widely-held views of law students. For undergraduates and high-school students, there is more data available. Various studies have been conducted over the past several years and the findings are telling.

The recent SPIRE¹⁴³ study, which was funded by the Joint Information Systems Committee (JISC), looked at participatory web services for the years 2005-2007. The

findings confirm generally-held beliefs about young people. The study found that blogs, Wikipedia and wikis, social bookmarking (tagging), and social networks are all more commonly used by people under the age of twenty-five, with the under-eighteen set using Web 2.0 applications the most.¹⁴⁴ Overall Web 2.0 engagement is greatest among these same age groups, and the study projects that use of Web 2.0 applications will remain strong among young people with the effect that levels of overall engagement among 18-34 year olds will be approximately the same in the future.¹⁴⁵ The study concludes that institutions will have to link their services to Web 2.0 to continue to engage users with the institution.¹⁴⁶

Recent studies by the Pew Internet and American Life Project present findings that accord with the SPIRE study. Wikipedia use provides an example. In the summer of 2006, 18-34 year olds accounted for over 47% of Wikipedia traffic during a four-week period.¹⁴⁷ A study done the following winter found that 44% of 18-29 year olds used Wikipedia for information.¹⁴⁸ Tagging behavior also skews toward the young. A December 2006 Pew survey found that 28% of Internet users have tagged online content and that 18-29 year olds account for approximately one third of these taggers.¹⁴⁹

Another recent study presents findings that comport with the Pew and SPIRE studies while offering some important contrasts. The British Library and JISC sponsored a comprehensive examination of literature spanning the 1980s to 2007 to determine what differences exist between Generation X, Generation Y, and the “Google Generation.”¹⁵⁰ Several findings of the study contradict popular belief: 1) not all young people participate in social networking;¹⁵¹ 2) young persons’ searching expertise has not improved with exposure to online technologies (ironically, this may be because of the perception that

digital sources are easily searched);¹⁵² 3) the young still find text important and do not emphasize visual media as much as expected;¹⁵³ and 4) young people do not see peers as the most credible source of information while teachers and textbooks are valued above the Internet.¹⁵⁴

In a recent review of The British Library study, Carol Tenopir and Don King highlighted several significant findings that they find troubling. First, youngsters' Internet competence is "patchy" and their information seeking is superficial, at best.¹⁵⁵ Second, young people do not understand what they need when researching and spend too little time evaluating for relevance, accuracy, and authority.¹⁵⁶ Finally, younger researchers associate the search engine they use with the content it retrieves ignoring actual sources; thus, Google becomes an information brand.¹⁵⁷

What do these studies tell us about the future of Web 2.0 and legal information as young people foray into the world? As the old saying goes, "it's as clear as mud." Certainly, students, law or otherwise, regularly obtain information from the Internet whether it be the news of the day or looking up something on Wikipedia and the use of Web 2.0 applications will grow as the younger generations age. However, there are two important points to take away from the studies. First, students are less immersed in the online world than is typically portrayed. They still read, use physical libraries, use text as much or more than visual sources, and do not automatically look to peer networks for authoritative information. Second, they are researching online, but have far less sophistication in dealing with online information than perhaps was thought. They deal with the online environment superficially and equate information retrieval with research success while ignoring accuracy and authority.

Thus, an interesting educational challenge lies ahead. Younger generations will turn increasingly to Web 2.0 for information, including legal information. The traditional model of legal information will evolve by popular demand. However, without adequate attention to evaluation, and the skills to do so, younger generations will be left with a legal information system that is seriously degraded and the conception of authority will degrade with it. An open and fluid concept of legal authority may be desirable, but lawyers must also possess the ability and motivation to discern quality legal information. Not everything can be “the law” nor would society want it to be.

IV. IMPLICATIONS FOR LEGAL RESEARCH EDUCATION

Evolution toward a Web 2.0-based model of legal information and authority presents challenges to the legal academy. How should students be prepared to handle an open and participatory way of creating and accessing information while developing the ability to find solutions to legal problems and to advocate effectively for clients? It seems that a synthesized approach is best: emphasize the skills and attributes underlying Web 2.0 while instilling the judgment and analytical skills necessary to assess and solve legal problems.

Chris Dede recommends a synthesized approach to bridging the epistemological conflict between Classical and Web 2.0 perspectives of pedagogy.¹⁵⁸ Dede recognizes the opportunities, challenges, and difficult problems presented by Web 2.0.¹⁵⁹ Yet he is critical of teaching faculty who resist any use of new technologies in teaching, noting the value of folksonomies in understanding students’ conceptual frameworks.¹⁶⁰ Ultimately, a synthesis that leverages the strengths while offsetting the weaknesses of the two views of knowledge is needed.¹⁶¹

Exactly what a synthesized approach to legal research instruction looks like is an open question. Bintliff argues for new “textbooks” to replace the Digest System.¹⁶² These new texts would reflect the subject specialization of law and enable users to find the broad range of legal resources that are needed while operating in an electronically interconnected environment.¹⁶³ Moreover, they must “provide shared context for legal research and for the communication of legal information.”¹⁶⁴

New “textbooks” could certainly be part of the foundation of a synthesized legal research course. However, that foundation must be broader and deeper. As the paradigms of legal information and legal research shift, the following are six goals for which any legal research curriculum should strive:

1. Students should understand the traditional model of legal information and how it evolved to what we have currently;
2. Students must recognize that the legal information model will continue to evolve as Web 2.0 technologies take greater hold, but with the understanding that how quickly and to what degree this evolution will occur is uncertain;
3. Curricula must develop students’ collaboration skills and their recognition that peers are a source of information that is both useful and sometimes necessary in the work of lawyering;
4. Students must understand that information retrieval can and will utilize both structured and unstructured methods of access;
5. Curricula must instill in students an obligation to carefully assess each source, including a) distinguishing between search engines and the sources the engines retrieve, b) evaluating each source for relevance, accuracy, and authority, and c)

recognizing one's own shortcomings when using online technologies and that obtaining quality information online is not only convenient but a skill to be mastered;

6. Students must grasp that the nature of authority is dependent upon how legal information is disseminated and organized and that the nature of authority will continue to evolve.

CONCLUSION

It is amazing to consider how long the traditional model was in place and how quickly new models have evolved in its place. The humble and conservative beginnings of CALR would have led few to predict the current legal information environment. Yet, it seems unlikely that Web 2.0 will fundamentally alter legal information and authority at breakneck speed. Certainly, the questions presented here call for empirical research into the uses and perceptions of Web 2.0 technologies both in law schools and legal practice.

Meanwhile, legal education will continue to be transformed by technology.¹⁶⁵ This includes the various participatory, user-driven, community-oriented online spaces that constitute Web 2.0. However, that does not mean that law students must be blogging, writing wiki entries, and tagging web content referred to them by someone on Facebook. What is critical is for law students to understand how information is created and accessed, to be open to a diverse range of sources, and to be able to critically evaluate sources within the context of a legal system that continues to be governed by rules and standards.

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¹ Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL L. REV. 15, 20-21 (1987).

² Robert C. Berring, *Legal Information and the Search for Cognitive Authority*, 88 CAL. L. REV. 1675, 1676-77 (2000).

³ Berring, *supra* note 1, at 25.

⁴ Berring, *supra* note 1 at 24-25; *see also* Barbara Bintliff, *Context and Legal Research*, 99 LAW LIBR. J. 249, 251 (2007).

⁵ Bintliff, *supra* note 4, at 258.

⁶ Berring, *supra* note 2, at 1680.

⁷ *Id.* at 1681.

⁸ *Id.*

⁹ Bintliff, *supra* note 4, at 254.

¹⁰ The term is used to mean both practicing professionals and legal academics.

¹¹ Bintliff, *supra* note 4, at 252-53.

¹² *Id.* at 254-55 (explaining the theories of scientific study of Thomas S. Kuhn).

¹³ *Id.* at 258.

¹⁴ *Id.* at 258-59.

¹⁵ *Id.* at 258.

¹⁶ Richard Delgado & Jean Stefancic, *Why Do We Ask the Same Questions? The Triple Helix Dilemma Revisited*, 99 LAW LIBR. J. 307, 313 (2007).

¹⁷ *Id.*

¹⁸ Berring, *supra* note 2, at 1680.

¹⁹ Delgado, *supra* note 16, at 313 (citing WILLIAM MARVIN, WEST PUBLISHING COMPANY: ORIGIN, GROWTH, LEADERSHIP 39 (St. Paul, Minn., 1969)).

²⁰ *Id.*

²¹ *See* Spencer L. Simons, *Navigating Through the Fog: Teaching Legal Research and Writing Students to Master Indeterminacy through Structure and Process*, 56 J. LEGAL EDUC. 356, 359-63 (2006).

²² *See id.* at 359-62.

²³ *Id.* at 359 (citing Richard Delgado & Jean Stefancic, *Why Do We Tell the Same Stories?: Law Reform, Critical Librarianship, and the Triple Helix Dilemma*, 42 STAN. L. REV. 207 (1989)).

²⁴ *Id.*; *see also* Delgado, *supra* note 16, at 308.

²⁵ Delgado, *supra* note 16, at 308-09.

²⁶ *Id.* at 309.

²⁷ Simons, *supra* note 21, at 359.

²⁸ Steven M. Barkan, *Deconstructing Legal Research: A Law Librarian's Commentary on Critical Legal Studies*, 79 LAW LIBR. J. 617, 632 (1987).

²⁹ *Id.* at 632-34.

³⁰ Simons, *supra* note 21, at 360 (citing Robert C. Berring, *Legal Research and the World of Thinkable Thoughts*, 2 J. APP. PRAC. & PROCESS 305 (2000)).

³¹ *Id.* at 360-61.

³² Bintliff, *supra* note 4, at 251-52.

³³ *Id.* at 258-60.

³⁴ *See* Simons, *supra* note 21, at 361.

³⁵ Schanck contends that the legal academy is heavily influenced by Legal Realism. *See* Peter C. Schanck, *Taking Up Barkan's Challenge: Looking at the Judicial Process and Legal Research*, 82 LAW LIBR. J. 1, 11-12 (1990).

³⁶ *Id.*

³⁷ *Id.* at 14.

³⁸ *Id.* at 17. Schanck contends that the realities of research and legal analysis in practice mitigate the reinforcing and normalizing effects of the categorization function of the Digest. *See id.* at 17-19.

³⁹ Simons, *supra* note 21, at 362.
⁴⁰ *Id.* at 363.
⁴¹ *Id.*
⁴² *Id.* at 363-64.
⁴³ *Id.* at 364.
⁴⁴ *Id.*
⁴⁵ Carol M. Bast & Ranford C. Pyle, *Legal Research in the Computer Age: A Paradigm Shift?*, 93 LAW LIBR. J. 285, 286 (2001).
⁴⁶ F. Allan Hanson, *From Key Numbers to Keywords: How Automation Has Transformed the Law*, 94 LAW LIBR. J. 563, 587-90 (2002).
⁴⁷ *Id.* at 564.
⁴⁸ *Id.* at 581-82; Bast, *supra* note 45, at 285-88.
⁴⁹ Delgado, *supra* note 16, at 310.
⁵⁰ *Id.*
⁵¹ *Id.* at 315.
⁵² *Id.* at 318.
⁵³ See *supra* note 24 and accompanying text.
⁵⁴ Delgado, *supra* note 16, at 318.
⁵⁵ *Id.* Delgado and Stefancic contend that the terms and concepts of the traditional model's classification scheme are reinforced in researcher's minds by law school curricula, bar examination requirements, and daily work, thus limiting the questions researchers ask when performing CALR. *Id.*
⁵⁶ Berring, *supra* note 2, at 1696.
⁵⁷ *Id.*
⁵⁸ *Id.*
⁵⁹ Berring, *supra* note 1, at 25.
⁶⁰ *Id.* at 26.
⁶¹ *Id.*
⁶² *Id.* at 26-27.
⁶³ MARY MADDEN & SUSANNAH FOX, PEW INTERNET & AM. LIFE PROJECT, RIDING THE WAVES OF "WEB 2.0": MORE THAN A BUZZWORD, BUT STILL NOT EASILY DEFINED 1 (Wash., D.C., 2006).
⁶⁴ Jack M. Maness, *Library 2.0 Theory: Web 2.0 and Its Implications for Libraries*, 3 WEBOLOGY ¶ 1 (2006), <http://www.webology.ir/2006/v3n2/a25.html>.
⁶⁵ MADDEN, *supra* note 63, at 1.
⁶⁶ Maness, *supra* note 64, ¶ 1.
⁶⁷ Chris Dede, *A Seismic Shift in Epistemology*, EDUCAUSE REV., May-June 2008, at 80, 80.
⁶⁸ It is perhaps more accurate to refer to these technologies as "services" or "user processes" constructed from existing technologies and open standards that are fundamental to the Internet and the World Wide Web. PAUL ANDERSON, JOINT INFORMATION SYSTEMS COMMITTEE, WHAT IS WEB 2.0? IDEAS, TECHNOLOGIES AND IMPLICATIONS FOR EDUCATION 7 (Bristol, Eng., 2007). Some experts would argue that there may be no such thing as Web 2.0, or, at minimum, agree that Web 2.0 does not encompass any new technology; rather, it is built upon old technology used in new ways that exploits our ancient desires for human connection and pecuniary gain. Lance Hayden, Assistant Instructor and Ph.D. Candidate, University of Texas School of Information, *From Books to Facebook: Can We Energize Privacy as Library 2.0 Services Evolve?*, Presentation, as part of panel, Annual Meeting and Conference of the American Association of Law Libraries (July 13, 2008).
⁶⁹ ANDERSON, *supra* note 68, at 8.
⁷⁰ *Id.* at 8-9.
⁷¹ Wikipedia Main Page, http://en.wikipedia.org/wiki/Main_Page Last visited July 18, 2008.
⁷² LEE RAINIE & BILL TANCER, PEW INTERNET & AM. LIFE PROJECT, DATA MEMO 1 (Wash., D.C., 2007). At the time of the study, Hitwise ranked Wikipedia in the top 10 of popular sites on the web. *Id.* at 2.
⁷³ *Id.* at 1.
⁷⁴ This is due to Google's search algorithm that heavily weights the number of links to a given web page. *Id.* at 3.
⁷⁵ *Id.* at 2-4.
⁷⁶ Maness, *supra* note 64, ¶ 20.

⁷⁷ ANDERSON, *supra* note 68, at 7.

⁷⁸ Technorati is an aggregation service: it tracks millions of blogs and other social media and indexes postings for organized access to the mass of information. A recent survey indicates that aggregators are less popular than blogs themselves leading to the conclusion that blogs are accessed individually rather than via “feed aggregation services.” DAVID WHITE, U. OF OXFORD, SECURE PERSONAL INSTITUTIONAL AND INTER-INSTITUTIONAL REPOSITORY ENVIRONMENT PROJECT, RESULTS AND ANALYSIS OF THE WEB 2.0 SERVICES SURVEY 7 (Oxford, Eng., 2007).

⁷⁹ Technorati About Us Page, <http://technorati.com/about/> Last visited July 18, 2008.

⁸⁰ WHITE, *supra* note 78, at 4. Blogs include personal, institutional, and commercial blogs.

⁸¹ *Id.* at 7.

⁸² ANDERSON, *supra* note 68, at 7.

⁸³ *Id.*

⁸⁴ *Id.* at 7-8.

⁸⁵ *Id.*

⁸⁶ *Id.* at 8.

⁸⁷ *Id.*

⁸⁸ *Id.* Some bloggers disable trackback deliberately as a way to prevent spam. *Id.*

⁸⁹ *Id.* at 9.

⁹⁰ Maness, *supra* note 64, ¶ 29.

⁹¹ WHITE, *supra* note 78, at 4-5.

⁹² See LEE RAINIE, PEW INTERNET AND AM. LIFE PROJECT, 28% OF ONLINE AMERICANS HAVE USED THE INTERNET TO TAG CONTENT: FORGET DEWEY AND HIS DECIMALS, INTERNET USERS ARE REVOLUTIONIZING THE WAY WE CLASSIFY INFORMATION—AND MAKE SENSE OF IT 2 (Wash., D.C., 2007) (noting that taggers are more likely to be under 40 and have higher income and education levels).

⁹³ ANDERSON, *supra* note 68, at 9.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ WHITE, *supra* note 78.

¹⁰⁰ *Id.* at 4. It has been posited that there is a class divide between MySpace and Facebook with Facebook the choice for middle to upper class college students and MySpace being inhabited by lower class or marginalized teenagers. Meg Kribble & Debbie Ginsberg, *The Social Networking Titans: Facebook and MySpace*, LLRX.COM, Apr. 4, 2008, ¶ 19, <http://www.llrx.com/node/2051/>.

¹⁰¹ Maness, *supra* note 64, ¶ 25.

¹⁰² Kribble, *supra* note 100, ¶ 2. It should be noted that although Facebook and MySpace are ostensibly free, there are costs to users, including online security risks and the bartering away of one’s privacy. Hayden, *supra* note 68.

¹⁰³ LinkedIn, About LinkedIn Page, http://www.linkedin.com/static?key=company_info&trk=hb_ft_abtli Last visited July 18, 2008.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Jessica Guynn, *Investors Value LinkedIn at \$1 Billion*, L. A. TIMES, June 18, 2008, at C1, available at 2008 WLNR 11462729.

¹⁰⁷ See *supra* notes 72, 79 and accompanying text.

¹⁰⁸ Consider LinkedIn, which allows users to pose questions to the entire network thus drawing on the collected wisdom of millions of LinkedIn members. Lawrence M. Friedman, *The Land of LinkedIn*, CBA REC., Jan. 2008, at 48, 48. LinkedIn members are rewarded for answering questions with “expert points” thus fostering an expanded pool of perceived legal experts. *Id.*

¹⁰⁹ Dede, *supra* note 67, at 80.

¹¹⁰ *Id.* at 81.

¹¹¹ Kate Wittenberg, *Credibility of Content and the Future of Research, Learning, and Publishing in the Digital Environment*, 10 J. ELECTRONIC PUB. ¶ 6 (2007), <http://hdl.handle.net/2027/spo.3336451.0010.101>.

¹¹² MADDEN, *supra* note 63, at 2. A Web 2.0 application that illustrates this phenomenon is Digg, <http://digg.com/>. Digg allows members to share content available on the web. In turn, “Digg surfaces the best stuff as voted on by our users.” Digg About Us Page, <http://digg.com/about> Last visited July 18, 2008. If a user likes an item, they “Digg” it; if an item receives enough diggs, then it is moved to the front page of the site. *Id.* An example of a legal site that interacts with the online “crowd” using Digg is The Lessig 2.0 blawg. <http://www.lessig.org/blog/> Last visited July 18, 2008.

¹¹³ ANDERSON, *supra* note 68, at 15.

¹¹⁴ *Id.*

¹¹⁵ See *supra* notes 75, 81 and accompanying text.

¹¹⁶ Ellie Margolis, *Surfin’ Safari—Why Competent Lawyers Should Research on the Web*, 10 YALE J.L. & TECH. 82, 115 (2007).

¹¹⁷ *Id.* at 116. The Blawg web site currently tracks more than 1300 active legal blogs. See Blawg Main Page, <http://www.blawg.com/> Last visited July 20, 2008.

¹¹⁸ Margolis, *supra* note 116, at 117-18.

¹¹⁹ Bill Johncocks, *Web 2.0 and Users’ Expectations of Indexes*, 26 INDEXER 18, 20 (2008).

¹²⁰ *Id.* at 20-21.

¹²¹ Robert Godwin-Jones, *Tag Clouds in the Blogosphere: Electronic Literacy and Social Networking*, LANGUAGE LEARNING & TECH., May 2006, at 8, 10.

¹²² *Id.*

¹²³ See *supra* note 97 and accompanying text.

¹²⁴ Johncocks, *supra* note 119, at 21.

¹²⁵ *Id.*

¹²⁶ RAINIE, *supra* note 92, at 6 (interviewing David Weinberger).

¹²⁷ *Id.*

¹²⁸ See Johncocks, *supra* note 119, at 21.

¹²⁹ Consider the addition of tables of contents and indexes, database wizards, topical searching tools, tabs, and current awareness services.

¹³⁰ See *supra* note 24 and accompanying text.

¹³¹ Delgado, *supra* note 16, at 310, 328.

¹³² See *supra* notes 32-33 and accompanying text.

¹³³ See Bintliff, *supra* note 4, at 259-60.

¹³⁴ Ian Gallacher, “Who Are Those Guys?”: *The Results of a Survey Studying the Information Literacy of Incoming Law Students*, 44 CAL. W. L. REV. 151, 154 (2007). The study, conducted in summer 2006, surveyed 740 students from seven different law schools. *Id.* at 155-57.

¹³⁵ *Id.* at 163. A majority of respondents ranked reading as important or very important. *Id.*

¹³⁶ *Id.* at 167.

¹³⁷ *Id.* at 167-68, 173-74.

¹³⁸ *Id.* at 178-79.

¹³⁹ *Id.* (citing STEVE JONES, PEW INTERNET & AM. LIFE PROJECT, THE INTERNET GOES TO COLLEGE 12 (Wash., D.C., 2002)).

¹⁴⁰ *Id.* at 179.

¹⁴¹ *Id.* at 180.

¹⁴² The issue may be that students can easily find information online, but do not understand what it is they have obtained. *Id.* at 192. It may be that students equate downloading information from the web with actually understanding it. *Id.* (quoting Molly Warner Lien, *Technocentrism and the Soul of the Common Law Lawyer*, 48 AM. U.L. REV. 85, 118 (1998)).

¹⁴³ Secure Personal Institutional and Inter-Institutional Repository Environment.

¹⁴⁴ WHITE, *supra* note 78, at 4.

¹⁴⁵ *Id.* at 9.

¹⁴⁶ *Id.* at 11.

¹⁴⁷ MADDEN, *supra* note 63, at 4.

¹⁴⁸ RAINIE, *supra* note 72, at 1.

¹⁴⁹ RAINIE, *supra* note 92, at 1, 3. As with Wikipedia users, taggers skew toward the college-educated. *Id.* at 3.

¹⁵⁰ PETER WILLIAMS & IAN ROWLANDS, *THE BRITISH LIBRARY, INFORMATION BEHAVIOUR OF THE RESEARCHER OF THE FUTURE* 3-4 (London, 2007).

¹⁵¹ *Id.* at 8-9.

¹⁵² *Id.* at 9-10.

¹⁵³ *Id.* at 19-20.

¹⁵⁴ *Id.* at 17.

¹⁵⁵ Carol Tenopir & Don King, *Online Generational Myths Debunked*, *LIBR. & INFO. UPDATE*, Jan.-Feb. 2008, at 4, 4.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ Dede, *supra* note 67, at 81.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² Bintliff, *supra* note 4, at 264.

¹⁶³ *Id.* at 264-65.

¹⁶⁴ *Id.* at 265.

¹⁶⁵ See Peter W. Martin, *Information Technology and U.S. Legal Education: Opportunities, Challenges, and Threats*, 52 *J. LEGAL EDUC.* 506 (2002).