

Law Libraries in the Cloud**

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Ms. Murley provides an overview of the meanings of “cloud computing” and “software as a service,” discusses benefits and concerns, and lists some of the ways that law libraries provide resources and services using these tools. She suggests that cloud computing is nothing new for law librarians, because law libraries have been using such tools for many years.

¶1 I noticed recently that “cloud computing” was being mentioned with increasing frequency in the news, so I decided to investigate just what cloud computing was all about and how it might be used in law libraries. I discovered that, as with many tech buzzwords, the definition of cloud computing varies depending upon who you ask.

What Is Cloud Computing?

¶2 First, what is the cloud to which the term “cloud computing” refers? According to PC Magazine’s Tech Encyclopedia, “Clouds generally refer to wide area networks (WANs) such as the Internet, but can also be used to depict local networks (LANs).”¹ The cloud in a network diagram represents the shared part of the network where data may follow any one of many paths in the transmission from one end point to another. The cloud symbol indicates that this uncertainty about the path traveled does not affect our understanding of the process.²

¶3 So cloud computing involves networks, but how does it differ from ordinary computing on networked computers? On this point, there are a variety of opinions. A recent Pew Internet survey defined cloud computing as “an emerging architecture by which data and applications reside in cyberspace, allowing users to access

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1. PCMag.com, Cloud Definition, http://www.pcmag.com/encyclopedia_term/0,2542,t=cloud&i=39847,00.asp (last visited Jan. 13, 2009).

2. *Id.*; Webopedia, What is Cloud?, <http://www.webopedia.com/TERM/c/cloud.html> (last visited Jan. 13, 2009).

them through any web-connected device.”³ The Pew report explained that because these resources do not exist on the user’s personal computer, but “at an ill-defined elsewhere,” they appear to “come from a cloud.”⁴

¶4 There are other definitions of cloud computing as well. Researchers in data-intensive disciplines use the term to refer to networks of thousands of ordinary computers that together function as supercomputers.⁵ The term has also been used to describe web-based operating systems,⁶ IT infrastructure as a service,⁷ and the sharing of data via the web.⁸ For purposes of this column, I will focus on the Pew survey’s definition of cloud computing as online applications and data storage. This definition of cloud computing is also known as “software as a service” or SaaS.⁹

Benefits of Cloud Computing

¶5 The Pew survey mentioned above asked Internet users about six common online activities: storing personal photos online, storing personal videos online, using online applications, using webmail services, paying to store computer files online, and backing up hard drives to an online site.¹⁰ The list is not inclusive of all cloud-computing activities, but the survey was only intended to provide an overview of how many Internet users perform selected online activities.¹¹ In addition to the activities covered in the Pew survey, there are many helpful collaborative tools in the cloud, including tools for sharing large files, mind-mapping, scheduling meetings, and sharing computer screens.¹²

3. Memorandum from John B. Horrigan, Associate Director, Pew Internet & American Life Project, Use of Cloud Computing Applications and Services 1 (Sept. 2008), available at http://www.pewinternet.org/pdfs/PIP_Cloud.Memo.pdf. [hereinafter Horrigan Memo]

4. *Id.* at 3.

5. See Stephen Baker, *Google and the Wisdom of the Clouds*, BUS. WK., Dec. 24, 2007, at 48, 50; Jeffrey R. Young, *3 Ways Web-Based Computing Will Change Colleges*, CHRONICLE.COM, Oct. 24, 2008, <http://chronicle.com/free/2008/10/5611n.htm>.

6. See Steven Levy, *Inside Chrome: The Secret Project to Crush IE and Remake the Web*, WIRED, Oct. 2008, at 144, 148; Erica Naone, *Computer in the Cloud*, TECH. REV., Sept. 18, 2007, <http://www.technologyreview.com/infotech/19397>.

7. See Robyn Peterson, *What You Need to Know About Cloud Computing*, PCMAG.COM, Sept. 11, 2008, <http://www.pcmag.com/article2/0,2817,2330238,00.asp>.

8. See Cloud Computing Is More Than a Computer in the Cloud, Posting of Paul Miller to ReadWriteWeb, http://www.readwriteweb.com/archives/cloud_computing_is_more_than_a_computer_in_the_cloud.php (Dec. 14, 2008, 10:45 A.M.).

9. See The New Stack: SaaS, Cloud Computing, Core Technology, Posting of Bernard Nunn to ReadWriteWeb, http://www.readwriteweb.com/archives/new_technology_stack.php (Oct. 29, 2008, 9:15 P.M.).

10. Horrigan Memo, *supra* note 3 at 8.

11. *Id.* at 1.

12. Tom Mighell, *Collaboration “in the Cloud,”* LEGAL TECH., June 26, 2008, <http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=1202422543832>. See also Lucie Olejnikova & Jessica de Perio Wittman, *The Case for Collaborative Tools: Long-Distance Teamwork on a Shoestring Budget*, AALL SPECTRUM, Dec. 2008, at 8, 9.

¶6 The survey found that 69% of online users had performed at least one of the listed activities, and 40% had performed two or more.¹³ Respondents to the Pew survey said that ease, convenience, and flexibility were major reasons for their use of cloud computing. In particular, they liked being able to access their information from any computer and to share information easily with others.¹⁴ Individual subscriptions to many of these online applications are free,¹⁵ another advantage over software installed on a personal computer.

¶7 Web-based software sold to law firms and other enterprises is more likely to be called “software as a service” (SaaS) rather than “cloud computing.” According to Webopedia, “SaaS is a software delivery method that provides access to software and its functions remotely as a Web-based service.”¹⁶ SaaS applications used by law firms include practice management, document management, payroll, human resources, tax systems, accounting, timekeeping, e-mail spam filtering, litigation support, data hosting, and office productivity.¹⁷

¶8 Law firms and other businesses use SaaS for many of the same reasons that individuals use cloud computing. Firms save money because SaaS applications are hosted on the provider’s servers and accessed using a web browser, so the firm does not have to purchase and maintain its own servers or license and install software on each work station.¹⁸ And since SaaS is typically based on a monthly fee, the firm avoids large up-front costs of new hardware and software.¹⁹ Firms save time because the SaaS provider maintains and upgrades the equipment and software and provides technical support, usually 24/7/365.²⁰ The SaaS provider may also be in a better position to ensure continuity than an individual business if the provider backs up data in multiple locations and can shift to another part of its system when the equipment at one location goes down.²¹

¶9 Software as a service can also give firms more flexibility. With SaaS, lawyers can access their data and applications from any web-connected computer,²² and they can collaborate with colleagues regardless of their locations.²³ Because SaaS applications are usually operating-system neutral, it is possible for individuals with Windows, Mac, and Linux operating systems to use the same applications.²⁴

13. Horrigan Memo, *supra* note 3, at 1.

14. *Id.* at 2, 5.

15. See Nerino Petro Jr., *Software as a Service*, GP SOLO, June 2007, at 29, 30.

16. Webopedia, What Is SaaS?, <http://www.webopedia.com/TERM/S/SaaS.html> (last visited Jan. 22, 2009).

17. See Brett Burney, *Can Software Be a Service?*, LJN’S LEGAL TECH NEWSL., July 2008, at 1, 2; Petro, *supra* note 15, at 30–31.

18. Burney, *supra* note 17, at 6.

19. Webopedia, SaaS, <http://www.webopedia.com/TERM/S/SaaS.html> (last visited Jan. 19, 2009).

20. Burney, *supra* note 17, at 6.

21. See Am. Bar Ass’n Legal Technology Resource Center, FYI: Software as a Service (SaaS) for Lawyers, <http://www.abanet.org/tech/ltrc/fyidocs/saas.html> (last visited Jan. 22, 2009); Alan Cohen, *Cloud Computing: Is It Safe?*, LEGAL TECH., Oct. 31, 2008, <http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=1202425665205>.

22. See Burney, *supra* note 17, at 6.

23. See Mighell, *supra* note 12.

24. See Aaron J. Rittmaster, *Mediating a Holy War: Windows vs. Mac vs. Linux*, GP SOLO, June 2008, at 26, 27, 28.

Concerns and Cautions

¶10 Which online tools librarians can use at work depends on decisions of the larger organization of which the library is a part. Any organization that is contemplating a move to cloud computing needs to consider usability, reliability, security, and cost; but lawyers and law firms have special concerns because of their ethical duties to their clients. Fortunately, guides are available online to help lawyers ask the right questions of SaaS vendors and include the necessary provisions in any service agreements.²⁵

¶11 If you are in a position to recommend SaaS applications for your organization, here are some questions to consider:

- Will the application do everything you want it to do?
- Will it be easy for all users to learn?
- Will it work with other applications you are using, including your web browser? (If the application only works in Internet Explorer and your firm uses Firefox, you will have problems.²⁶)
- What guarantees does the provider give for accessibility and customer service, and does it offer a Service Level Agreement (SLA) to back up its promises?
- What procedures does the provider follow to protect your data from unauthorized access, both digitally and physically?
- How is your data backed up, and what provisions does the provider make for business continuity in case of disaster?
- Who owns the data you store on the SaaS provider's servers, and how easy will it be to move to another system? What will happen to your data on the provider's servers if you cancel your subscription?
- What is the provider's experience in working with lawyers?
- What will it cost, including monthly fees, incidental costs, and price increases, and for what period must you contract?

Client Confidentiality

¶12 In addition to the business concerns that must be taken into account before choosing any SaaS application, the ethical duty to protect client confidentiality must be considered if client information will be stored remotely. Rule 1.6(a) of the Model Rules of Professional Conduct states: "A lawyer shall not reveal information relating to the representation of a client unless the client gives informed consent, the disclosure is impliedly authorized in order to carry out the representation or the disclosure is permitted by paragraph (b)."²⁷ None of the exceptions included in (b) are relevant to storing client information on a third-party server.

¶13 The American Bar Association has not yet issued any ethics opinions on the permissibility of storing client files on servers controlled by a third party.²⁸ The

25. See, e.g., Am. Bar Ass'n Legal Technology Resource Center, *supra* note 21; Cohen, *supra* note 21.

26. See Petro, *supra* note 15, at 31.

27. MODEL RULES OF PROF'L CONDUCT R. 1.6(a) (2008).

28. See Nerino J. Petro, Jr., *The Ethical Implications of Online Software*, GP SOLO, June 2008, at 30, 32 (citing Timothy J. Pierce, *Maintaining Electronic Client Files*, WIS. LAWYER, Sept. 2006, at 24).

closest ABA opinion seems to be A.B.A. Formal Opinion 99-413, which says that the transmission of client information via unencrypted e-mail does not violate the Model Rules of Professional Conduct because there is “a reasonable expectation of privacy from a technological and legal standpoint.”²⁹

¶14 At least two state bars, Nevada and New Jersey, have issued ethics opinions permitting the use of an outside service provider to store client files in digital format, provided the attorney exercises reasonable care.³⁰ The New Jersey opinion states that the standard is met if “(1) the lawyer has entrusted such documents to an outside provider under circumstances in which there is an enforceable obligation to preserve confidentiality and security, and (2) use is made of available technology to guard against reasonably foreseeable attempts to infiltrate the data.”³¹

¶15 The Nevada opinion states:

[A]n attorney [is not] responsible for a breach of client confidentiality . . . so long as the attorney:

1. Exercises reasonable care in the selection of the third party contractor, such that the contractor can be reasonably relied upon to keep the information confidential; and
2. Has a reasonable expectation that the information will be kept confidential; and
3. Instructs and requires the third party contractor to keep the information confidential and inaccessible.³²

¶16 These ethics opinions suggest that to meet the standard of reasonable care attorneys must be knowledgeable about how the SaaS provider will handle data entrusted to it, and they must include terms in any agreement with the provider requiring the provider to preserve the confidentiality and security of the data.³³

How Law Librarians Use Cloud Computing

¶17 When I started researching this topic, I wondered if cloud computing was a tool that law libraries could use to deliver library services. Once I understood what it was, I knew that law librarians are already taking advantage of cloud computing. Law librarians use online applications and data storage to collaborate with colleagues and to provide library services.³⁴ Many of these tools also fall within the definition of Web 2.0, social software, and probably other terms. But whatever the name, if a tool can be used to help legal researchers access information, law librarians will help them use it.³⁵

¶18 In addition to all the new online applications, law libraries have been using the cloud to provide access to information for more than a decade,³⁶ even though

29. See *id.* at 32–33 (quoting ABA Formal Opinion 99-413).

30. See *id.* at 33.

31. N.J. Supreme Court Advisory Comm. on Prof'l Ethics, Op. 701 (2006).

32. Nev. State Bar Standing Comm. on Ethics & Prof'l Responsibility, Formal Op. 33 (2006).

33. See Petro, *supra* note 28, at 33.

34. See generally, e.g., Diane Murley, *What Is All the Fuss about Library 2.0?*, 100 LAW LIBR. J. 197, 2008 LAW LIBR. J. 10; Olejnikova & Wittman, *supra* note 12.

35. See Robert C. Berring, *Deconstructing the Law Library: The Wisdom of Meredith Willson*, 89 MINN. L. REV. 1381, 1402–04 (2005).

36. See Robert Berring, *Chaos, Cyberspace and Tradition: Legal Information Transmogrified*, 12

we haven't called it cloud computing. By the mid-1990s, libraries were cutting back on subscriptions to print sets;³⁷ Dedicated Westlaw and LexisNexis terminals in law libraries had given way to free software for home computers;³⁸ and the legal researcher could "gain access to the databases over any modem."³⁹

¶19 Although the technology was slightly different—modem instead of Internet connection—this sounds very much like cloud computing. Researchers could access legal information sources that resided on distant computers from any computer with a modem and the free software. When Westlaw and Lexis switched to a web-based interface a few years later, they moved the search application to their servers and eliminated the need for software to be installed and updated on every computer used for research.

¶20 These days law libraries provide access to many online resources, and most of those resources are accessed via web browser rather than software loaded on the local computer. As a result law librarians have been able to provide users with access to much more information than would have been possible in a physical library. Law librarians also use online applications to deliver library services. The law library is no longer just a physical place or a physical collection;⁴⁰ it is also in the clouds.

More Resources on Cloud Computing

¶21 The following books provide more in-depth discussions of cloud computing than I could manage here:

- *Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online*⁴¹ explains cloud computing and its potential benefits, and reviews a wide variety of cloud-computing and other web-based collaboration tools.
- *The Big Switch: Rewiring the World, from Edison to Google*⁴² compares the development of cloud computing to the shift a century ago from locally generated electrical power to electric utilities.
- *The Tower and the Cloud: Higher Education in the Age of Cloud Computing*⁴³ compiles articles by educators and technologists from different areas of higher education, including three by librarians: "From the Library to the Laboratory: A New Future for the Science Librarian"; "Scholarship: The Wave of the Future in the Digital Age"; and "University 2.0."

BERKELEY TECH. L.J. 189, 190 (1997) ("For old models of legal information, 1996 was the year the music died.")

37. *Id.* at 203.

38. *Id.* at 208.

39. *Id.*

40. See Berring, *supra* note 35, at 1402.

41. MICHAEL MILLER, CLOUD COMPUTING: WEB-BASED APPLICATIONS THAT CHANGE THE WAY YOU WORK AND COLLABORATE ONLINE (2008).

42. NICHOLAS CARR, THE BIG SWITCH: REWIRING THE WORLD, FROM EDISON TO GOOGLE (2008).

43. THE TOWER AND THE CLOUD: HIGHER EDUCATION IN THE AGE OF CLOUD COMPUTING (Richard N. Katz ed., 2008), available at <http://www.educause.edu/thetowerandthecloud/133998>.