

## **A Selective History of Technology in Law Libraries\*\***

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*Ms. Murley examines definitions of technology and reviews some of the early technological issues that law libraries addressed. She also provides an overview of some of the ways technology has been used by libraries to better serve their users. She concludes by encouraging law librarians to be willing to try new technology in order to increase or improve law library services.*

¶1 I am in my third year of writing the “Technology for Everyone” column, yet I have not yet defined what I mean by technology for purposes of this column. Because this is a journal for law librarians, I decided to begin my search for a definition in legal resources. None of the law dictionaries on the shelf in our reference section defined technology, although one defined technophobia as an “[i]rrational fear of technology,” including “such devices as alarm clocks, automatic teller machines, calculators, videocassette recorders, and computers.”<sup>1</sup> A legal thesaurus suggested the following terms for technology: “best technical knowledge, know-how, latest scientific knowledge, scientific advancement, state of the art, state of the industry, updated scientific knowledge.”<sup>2</sup>

¶2 Turning to nonlegal dictionaries, I found more helpful definitions: “the science of the application of knowledge to practical purposes,”<sup>3</sup> “the application of scientific knowledge to practical purposes in a particular field,”<sup>4</sup> and “a technical method of achieving a practical purpose.”<sup>5</sup> These definitions embrace the importance of technology to law libraries—its potential for achieving practical results. Definitions in *The Oxford English Dictionary* also focus on the practical, including “the scientific study of the practical or industrial arts” and “practical arts collectively.”<sup>6</sup>

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\* *Editor’s Note:* “Technology for Everyone” is a regular feature of *Law Library Journal*. In each article, author Diane Murley reviews a tool that can help law librarians do their jobs even better.

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1. GERRY W. BEYER, *MODERN DICTIONARY FOR THE LEGAL PROFESSION* 894 (4th ed. 2008).

2. WILLIAM C. BURTON, *BURTON’S LEGAL THESAURUS* 564 (4th ed. 2007).

3. WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE, UNABRIDGED 2348 (1993).

4. *Id.*

5. *Id.*

6. 17 *THE OXFORD ENGLISH DICTIONARY* 705 (2d ed. 1989).

¶3 In the columns I have written, I have focused on computer-related tools, which is probably what most people think of as technology these days. But computers were not always the newest technology for law libraries. Many technological solutions are so commonplace today that we no longer think of them as technology.

### Technology in Law Libraries

¶4 Reviewing the law library literature, I found discussions of two general areas in which law librarians applied technology to improve law library collections and services: microfilm and microfiche; and bibliography, indexing, classification, and subject headings. Although none of these innovations seems radical today, they were the subject of some controversy before they were adopted.

#### Microfilm and Microfiche

¶5 For an article he wrote to commemorate the Centennial of the American Association of Law Libraries, Frank Houdek asked AALL's past presidents to respond to a number of questions about the issues that have been important to AALL and law librarianship during their careers.<sup>7</sup> Two past presidents mentioned microformats: Morris L. Cohen, AALL president from 1970 to 1971, listed "integrating microfacsimiles into the collections of law libraries" as one of the issues and challenges facing AALL during his year as president;<sup>8</sup> and in discussing how collection development had changed during her career, Jane L. Hammond, AALL president from 1975 to 1976, said: "The pros and cons of microfilm and microfiche were extensively debated."<sup>9</sup>

¶6 Microphotography was invented in the nineteenth century but did not become popular until the 1930s.<sup>10</sup> One of the featured programs at the 1938 AALL Annual Meeting was "The Use of Microfilm in a Law Library."<sup>11</sup> Although microfilm and microfiche don't seem like technology today, just think of the impact this application of scientific knowledge had on law libraries—microformats have made it possible for newer law libraries to fill in their collections with important works that are no longer in print. and for law libraries with limited space to provide access to a richer collection.

7. Frank G. Houdek, *AALL History Through the Eyes of Its Presidents*, 98 LAW LIBR. J. 299, 302, 2006 LAW LIBR. J. 17, ¶ 5.

8. *Id.* at 304 & n.20, ¶ 13.

9. *Id.* at 306 & n.23, ¶ 19.

10. Alistair Black, *Mechanization in Libraries and Information Retrieval: Punched Cards and Microfilm Before the Widespread Adoption of Computer Technology in Libraries*, 23 LIBR. HIST. 291, 295–96 (2007).

11. FRANK G. HOUDEK, *THE FIRST CENTURY: ONE HUNDRED YEARS OF AALL HISTORY, 1906–2005*, at 33 (AALL Publ'ns Series no. 75, 2008). See also the discussion of *Law Library Journal* articles about microformats in Patricia K. Turpening, *From Sheepskin Binding to Born Digital: One Hundred Years of Preservation in Law Library Journal*, 101 LAW LIBR. J. 71, 76–78, 2009 LAW LIBR. J. 4, ¶¶ 21–30.

## Bibliography, Indexing, Classification, and Subject Headings

¶7 In another Centennial feature article, Kasia Solon wrote about technology in the early years of AALL.<sup>12</sup> Using a definition of technology as “the body of knowledge available to a civilization that is of use in fashioning implements, practicing manual arts and skills, and extracting and collecting materials,” she noted that objects we take for granted today, including books and bookshelves, are actually works of technology.<sup>13</sup>

¶8 Solon goes on to review how early law librarians applied technology to help legal researchers cope with overwhelming quantities of information.<sup>14</sup> A.J. Small, in his first presidential address to AALL, called for development of legal bibliography, indexing of legal periodicals, and law classification.<sup>15</sup> Creating these tools required law librarians to apply their body of knowledge in order to fashion implements and to extract and collect materials—the definition of technology.<sup>16</sup>

¶9 In the early years of AALL, bibliographies were shared among members by publishing them in *Law Library Journal*.<sup>17</sup> The *Index to Legal Periodicals and Law Library Journal*, originally published together, also served as the vehicle by which the first indexing of legal periodicals was distributed.<sup>18</sup> AALL has also been instrumental in the creation of two other indexes: the *Index to Foreign Legal Periodicals*,<sup>19</sup> and the dually named *Legal Resources Index* and *Current Law Index*.<sup>20</sup>

¶10 While legal bibliography and indexing of legal periodicals were developed early in AALL’s history, A.J. Small’s third technological initiative, law classification, took much longer. Small was an advocate of subject classification, an arrangement he described as a “self-guide,” and which he argued would be more convenient for librarians and lawyers and “a shorter cut to a practical use of the law library.”<sup>21</sup> However, the early preference among law librarians was for author classification,<sup>22</sup> and many law librarians were adamantly opposed to subject classification.<sup>23</sup> It wasn’t until the late 1960s, when the Library of Congress made the KF subclass available for “Law of the United States,” that AALL adopted a standardized subject classification system.<sup>24</sup> The time for a subject classification of law had arrived and, once issued, the KF subclass was quickly adopted by law libraries.<sup>25</sup>

12. Kasia Solon, *Present in Its Absence: Law Librarians and Technology at the Founding of AALL*, 98 LAW LIBR. J. 515, 2006 LAW LIBR. J. 29.

13. *Id.* at 516, ¶ 2 (quoting AMERICAN HERITAGE DICTIONARY 1843 (3d ed. 1993)).

14. *See generally id.*

15. A.J. Small, *President’s Address*, 1 LAW LIBR. J. 4, 5 (1908).

16. *See Solon, supra* note 12, at 519, ¶ 10.

17. *See id.* at 520, ¶ 12; HOUDEK, *supra* note 11, at 4.

18. Solon, *supra* note 12, at 520, ¶¶ 13–14; Houdek, *supra* note 11, at 4.

19. *See HOUDEK, supra* note 11, at 58, 64–65.

20. *See id.* at 90.

21. *Classification of Law Textbooks*, 1 LAW LIBR. J. 11, 16, 18 (1908).

22. Solon, *supra* note 12, at 522–23, ¶ 20.

23. Christine A. Brock, *Law Libraries and Librarians: A Revisionist History; or More than you ever wanted to know*, 67 LAW LIBR. J. 325, 360 (1974). *See also Classification of Law Textbooks, supra* note 21, at 12–14 (remarks of L.E. Hewitt).

24. Solon, *supra* note 12, at 526–27, ¶¶ 28–29.

25. Brock, *supra* note 23, at 361.

¶11 A related issue for AALL was the need for subject headings and library catalogs. Although a “tentative list of subject headings for a law library catalogue” from the Library of Congress was discussed at the 1912 annual meeting of AALL,<sup>26</sup> a generally accepted list would not be developed for another fifty years. The attitude among early librarians toward cataloging was described by one writer as hostile,<sup>27</sup> and a review of comments printed in *Law Library Journal* certainly supports that characterization.<sup>28</sup> However, law librarians continued to work with the Library of Congress to adapt its subject headings to law catalogs, and a generally accepted subject heading list applicable to law was made available in 1963.<sup>29</sup>

¶12 By developing legal bibliography, indexing of legal periodicals, and law classification and subject headings, early law librarians applied their body of knowledge to the practical purpose of helping researchers find the information they needed in a constantly growing body of law.

### Other Library Technology

¶13 Many technological innovations in libraries in general have also had an impact on law libraries. These innovations applied the current body of knowledge to the practical purpose of providing access to information in the years before computer technology.

#### Card Catalog

¶14 The card catalog was a nineteenth-century innovation.<sup>30</sup> Subject, title, and author information for each item in the library’s collection was written or typed on index cards that were then filed in specially designed cabinet drawers or other devices for access by library users. The card catalog was easier to keep up to date and provided access to the library collection through more access points than its predecessor, the book catalog, could manage.<sup>31</sup>

¶15 However, the book catalog had its advantages, and the transition to the card catalog was controversial.<sup>32</sup> Two limitations of the card catalog were that it was impractical to move or to make copies of the catalog. It was possible to have many copies of a library book catalog, allowing multiple users to consult it at the same time.<sup>33</sup> The book catalog was portable, so library users could use the catalog in any part of the library.<sup>34</sup> Libraries could also keep copies of the book catalogs from nearby libraries in order to direct researchers to resources at those other libraries.<sup>35</sup> Despite the advantages of the book catalog, its use became impractical as publish-

26. HOUDEK, *supra* note 11, at 7.

27. Brock, *supra* note 23, at 359.

28. *Id.*

29. *Id.* at 360.

30. Michael Stuart Freeman, *Pen, Ink, Keys, and Cards: Some Reflections on Library Technology*, 52 C. & RES. LIBR. 328, 329 (1991).

31. *Id.*

32. *Id.* at 330–31.

33. *Id.* at 331.

34. *Id.* at 330.

35. *See id.* at 331–32.

ing output increased and library collections grew.<sup>36</sup> A century after they were introduced, card catalogs had also become impractical and were replaced by online catalogs that were easier to update and provided more access points to library resources.

### Punched Cards

¶16 The punched-card machine was invented by Herman Hollerith in the 1880s.<sup>37</sup> Hollerith machines were designed for large-scale data-processing operations of government bureaucracies, public utilities, and industry.<sup>38</sup> Punched cards were essentially index cards through which holes were punched to represent specific data.<sup>39</sup> The cards could then be read by machines with mechanical feelers, photoelectric cells, or electric wire brushes.<sup>40</sup> Punched cards were used in libraries for circulation, serials, and cataloging,<sup>41</sup> functions that are now performed by computers.

¶17 In the 1930s and 1940s, punched cards were used together with microfilm for information retrieval.<sup>42</sup> Descriptions of the Rapid Selector machine, which used punched-card and microfilm technologies to enable libraries to share resources, sound like early descriptions of the potential of the Internet.<sup>43</sup> However, the Rapid Selector machine was soon replaced by computers, which became available commercially in 1951.<sup>44</sup>

### Non-Library Technology

¶18 Many generally available technologies have also found applications in libraries. While these technologies no longer seem innovative, it is easy to see how their absence would affect library services.

- The telephone was invented in 1876.<sup>45</sup> In the beginning, telephones were used in libraries for communication between branches.<sup>46</sup> By the mid-1950s, telephone reference services were being offered by libraries.<sup>47</sup>
- Fax machines have been around since the 1920s, but they only became widely used in libraries in the 1980s.<sup>48</sup> Like the teletype machines they replaced, fax machines were used primarily for interlibrary loan transactions.<sup>49</sup>
- Typewriters began to be purchased by libraries in the 1880s, but many library

36. *See id.* at 331.

37. Black, *supra* note 10, at 292.

38. *Id.* at 292–93.

39. *Id.* at 292.

40. *Id.*

41. *Id.* at 293.

42. *Id.* at 295.

43. *See id.* at 295–97.

44. *Id.* at 297.

45. Bell, *Alexander Graham*, in 2 THE NEW ENCYCLOPÆDIA BRITANNICA 67 (15th ed. 2002).

46. M. Kathleen Kern, *Have(n't) We Been Here Before? Lessons from Telephone Reference*, REFERENCE LIBR., June 2004, at 1, 10.

47. *See id.* at 2.

48. *Id.* at 11.

49. *Id.*

cataloging departments were still handwriting catalog cards forty years later.<sup>50</sup> Like the card catalog, discussed above, typewritten catalog cards were controversial because librarians feared they were not as legible, would not last as long as handwriting, and because the size of catalog cards made them hard to use in typewriters.<sup>51</sup>

¶19 As part of my research for this article, I polled the librarians and staff at my library and asked them what tools they used to do their jobs that are (or were) technology. Office products were popular responses, including staplers (patented in 1878<sup>52</sup>), rubber stamps (patented in 1883<sup>53</sup>), correction fluid (invented in 1951<sup>54</sup>), copy machines (xerography patented in 1942<sup>55</sup>), sticky notes (invented in 1968<sup>56</sup>), highlighters (introduced in the 1970s<sup>57</sup>), and dry-erase markers (introduced in 1996<sup>58</sup>).

¶20 Two colleagues mentioned movable compact shelving and barcodes. Movable compact shelving was invented and patented in Switzerland in 1947 and was available in the United States by the early 1960s.<sup>59</sup> Compact shelving has made it possible for libraries with limited space to maintain larger collections, provided the floors are adequately reinforced.

¶21 The first bar code scanner was used commercially in 1961.<sup>60</sup> Bar codes changed circulation procedures dramatically, made statistics tracking easier, and enabled self-checkout.

## Conclusion

¶22 All of the items mentioned above meet the definition of technology as the application of knowledge to practical purposes. Yet they are (or were) so commonly used that we no longer think of them as technology. Several that were radical in their time have since been replaced by even newer technology.

¶23 We are living in a time when new technological tools seem to be introduced almost daily. Whether you tend to love or fear technology, it helps to view these new tools in an historical context. Librarians have always found ways to apply the latest technology to practical purposes. And although not all of these applications were successful, the use of technology has frequently improved library services. If you are interested in increasing or improving the services your library provides, give that new technology a try. It just might be the tool you need.

50. Freeman, *supra* note 30, at 332.

51. *See id.* at 332–33.

52. Mary Bellis, The Office—History of Office Machines, <http://inventors.about.com/library/inventors/bloffice.htm> (last visited Apr. 27, 2009).

53. *Id.*

54. JOSEPH NATHAN KANE ET AL., FAMOUS FIRST FACTS 66 (6th ed. 2006).

55. *Id.* at 95.

56. *Id.*

57. Mary Bellis, History of Pens and Writing Instruments, <http://inventors.about.com/library/inventors/blpen.htm> (last visited Apr. 27, 2009).

58. *See id.*

59. *See* Robert H. Muller, *Economics of Compact Book Shelving*, 13 LIBR. TRENDS 433, 436 (1965).

60. KANE, *supra* note 54, at 66.