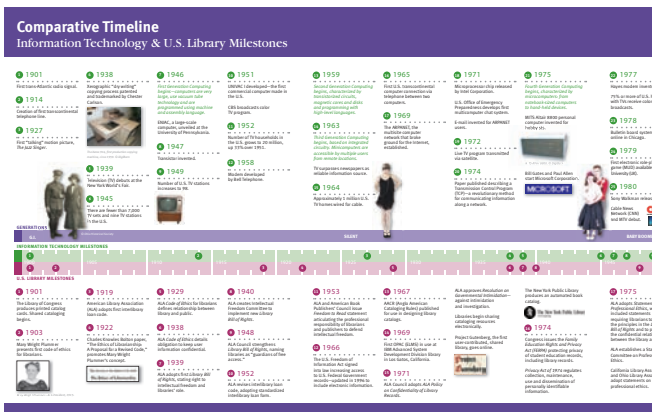




## Appendix F: Comparative Timeline



## Library and Information Technology

Today’s virtual communities and social networking software represent the natural progression of communication and community-building technology that started more than a century ago with the telegraph and telephone.

Libraries have been at the forefront of adopting collaborative technology and delivering content and services on emerging community platforms to better serve users and streamline operations. Below are a few U.S. highlights. For more information, see the “Comparative Timeline on Information Technology and U.S. Library Milestones” insert.

- 1901** The U.S. Library of Congress produces printed catalog cards. Shared cataloging begins.
- 1919** American Library Association (ALA) adopts its first resource sharing code.
- 1952** ALA revises interlibrary loan code, adopting standardized interlibrary loan form.
- 1969** The first online public access catalog is in use at the IBM Advanced System Development Division library.
- 1971** Libraries begin sharing cataloging resources electronically.
- 1979** Libraries begin lending and borrowing resources using a computer-driven interlibrary loan system.
- 1992** Librarian Jean Armour Polly coins the phrase “surfing the Internet.”
- 1994** Library Web sites launch at Virginia Tech University, the University of Michigan and the U.S. Naval Research library.
- 1995** Jenny Levine creates the first library technology blog.
- 1998** Bill Drew at the State University of New York at Morrisville offers real-time reference service using instant messaging (IM).
- 2006** Libraries start providing services in Second Life, an online, 3D virtual world.
- 2006** Launch of WorldCat.org—sharing the library holdings of more than 10,000 libraries on the Web.
- 2007** More than 25,000 videos on YouTube tagged or described with the term “library” or “librarian” as of September 2007.

## Appendix F: Comparative Timeline

## CREDITS

First Generation iPod (http://en.wikipedia.org/wiki/Image:Lightmatter\_ipod\_1G.jpg) by Aaron Logan. Use authorized under the Creative Commons Attribution 2.5 License (http://creativecommons.org/licenses/by/2.5/legalcode).

Photo of Edward Eyre Hunt and Gladys Hunt Ball in WWI uniforms, ca. 1917, from the Ohio Historical Society.

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Photo of Mary Wright Plummer, from *ALA Ex-Presidents at Council Meeting in Squirrel Inn—Catskill Mountains, New York*, used courtesy of American Library Association Archives Digital Collections, University of Illinois Library Collections.

Bolton, C.K. "The Ethics of Librarianship: A Proposal for a Revised Code." *Annals of the American Academy of Political and Social Science* 101:138—46.

Photos of the Xerox 914 photocopier, MITS Altair 8800, IBM PC and Osborne 1 laptop computer used by permission of The DigiBarn Computer Museum (http://www.digibarn.com)

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Please refer to the *Sharing Privacy and Trust in Our Networked World* bibliography, "Readings and Sources," for a complete list of sources.



## Comparative Timeline Information Technology & U.S. Library Milestones

In 1901, collaborative cataloging began when the Library of Congress first implemented a new technology: printed cards. This medium was used to store and share information about available library materials. Just two years later, Mary Wright Plummer—who would go on to be President of the American Library Association in 1915—presented the first code of ethics for librarians.

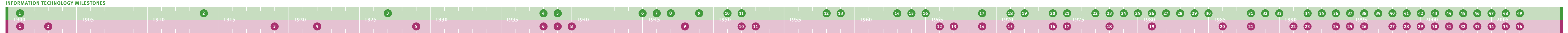
Since then, issues of technology, professional ethics, privacy and trust have often proceeded hand-in-hand. Mary Wright Plummer's suggested code reflected the landscape and technology of her time and helped prepare the profession for the future.



# Comparative Timeline

## Information Technology & U.S. Library Milestones

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| <p><b>1 1901</b><br/>First trans-Atlantic radio signal.</p> <p><b>2 1914</b><br/>Creation of first transcontinental telephone line.</p> <p><b>3 1927</b><br/>First "talking" motion picture, <i>The Jazz Singer</i>.</p> <p><b>4 1938</b><br/>Xerographic "dry writing" copying process patented and trademarked by Chester Carlson.</p> <p><b>5 1939</b><br/>Television (TV) debuts at the New York World's Fair.</p> <p><b>6 1945</b><br/>There are fewer than 7,000 TV sets and nine TV stations in the U.S.</p> | <p><b>7 1946</b><br/><i>First Generation Computing begins—computers are very large, use vacuum tube technology and are programmed using machine and assembly language.</i></p> <p>ENIAC, a large-scale computer, unveiled at the University of Pennsylvania.</p> <p><b>8 1947</b><br/>Transistor invented.</p> <p><b>9 1949</b><br/>Number of U.S. TV stations increases to 98.</p> | <p><b>10 1951</b><br/>UNIVAC I developed—the first commercial computer made in the U.S.</p> <p>CBS broadcasts color TV program.</p> <p><b>11 1952</b><br/>Number of TV households in the U.S. grows to 20 million, up 33% over 1951.</p> <p><b>12 1958</b><br/>Modem developed by Bell Telephone.</p> | <p><b>13 1959</b><br/><i>Second Generation Computing begins, characterized by transistorized circuits, magnetic cores and disks and programming with high-level languages.</i></p> <p><b>14 1963</b><br/><i>Third Generation Computing begins, based on integrated circuitry. Minicomputers are accessible by multiple users from remote locations.</i></p> <p>TV surpasses newspapers as reliable information source.</p> <p><b>15 1964</b><br/>Approximately 1 million U.S. TV homes wired for cable.</p> | <p><b>16 1965</b><br/>First U.S. transcontinental computer connection via telephone between two computers.</p> <p><b>17 1969</b><br/>The ARPANET, the multisite computer network that broke ground for the Internet, established.</p> | <p><b>18 1971</b><br/>Microprocessor chip released by Intel Corporation.</p> <p>U.S. Office of Emergency Preparedness develops first multicomputer chat system.</p> <p>E-mail invented for ARPANET users.</p> <p><b>19 1972</b><br/>Live TV program transmitted via satellite.</p> <p><b>20 1974</b><br/>Paper published describing a Transmission Control Program (TCP)—a revolutionary method for communicating information along a network.</p> | <p><b>21 1975</b><br/><i>Fourth Generation Computing begins, characterized by microcomputers: from notebook-sized computers to hand-held devices.</i></p> <p>MITS Altair 8800 personal computer invented for hobbyists.</p> <p>Bill Gates and Paul Allen start Microsoft Corporation.</p> | <p><b>22 1977</b><br/>Hayes modem invented.</p> <p>75% or more of U.S. homes with TVs receive color broadcasts.</p> <p><b>23 1978</b><br/>Bulletin board system goes online in Chicago.</p> <p><b>24 1979</b><br/>First electronic role-playing game (MUD) available at Essex University (UK).</p> <p><b>25 1980</b><br/>Sony Walkman released.</p> <p>Cable News Network (CNN) and MTV debut.</p> | <p><b>26 1981</b><br/>Laptop computer introduced.</p> <p>IBM releases the personal computer (PC).</p> <p><b>27 1982</b><br/>The Federal Communications Commission (FCC) authorizes commercial cellular service for the U.S.</p> | <p><b>28 1983</b><br/>Compact discs (CDs) sold.</p> <p>AT&amp;T sells mobile phones commercially.</p> <p><b>29 1984</b><br/>Apple Macintosh introduces personal computer with a graphical user interface.</p> <p>The 3.5" disk drive available.</p> <p><b>30 1985</b><br/>America Online founded as Quantum Computer Services.</p> <p>The WELL (Whole Earth 'Lectronic Link) online community begins.</p> <p>Microsoft releases MS Windows 1.0.</p> | <p><b>31 1988</b><br/>Approximately 60% of U.S. TV households have a VCR—up from 4% in 1982.</p> <p>Jarkko Oikarinen creates Internet Relay Chat (IRC)—enabling realtime chat.</p> <p><b>32 1989</b><br/>Time, Inc. and Warner Communications merge.</p> <p>Nintendo introduces Gameboy.</p> <p>MP3 music format patented in Germany.</p> <p><b>33 1990</b><br/>The World Wide Web developed by Tim Berners-Lee.</p> | <p><b>34 1992</b><br/>Text messaging introduced by Nokia.</p> <p>Commercial traffic allowed on the Internet.</p> <p><b>35 1993</b><br/>98% of U.S. households have at least one TV; 64% have two or more.</p> <p>Mosaic Web browser launches.</p> <p><b>36 1994</b><br/>Netscape Navigator browser introduced.</p> <p>The U.S. NCCII Act provides universal access to the Internet.</p> <p>Yahoo! search engine developed by Jerry Yang and David Filo.</p> | <p><b>37 1995</b><br/>Amazon, eBay and Classmates.com launch.</p> <p>Microsoft releases the Internet Explorer Web Browser (IE), and launches MSN Web Portal.</p> <p><b>38 1996</b><br/>45 million people use the Internet.</p> <p>Hotmail.com begins viral marketing—piggy-backing advertising onto users' e-mail.</p> <p>One-to-one and group chat instant-messaging (IM) system released.</p> <p>DVD players for sale in Japan.</p> <p>Web TV debuts.</p> <p>Palm Pilot—personal data assistant (PDA)—introduced.</p> | <p><b>39 1997</b><br/>Jorn Barger coins the term <i>Weblog</i>.</p> <p><b>40 1998</b><br/>Test version of Google launched by Larry Page and Sergey Brin.</p> <p>America Online buys Netscape Communications for \$4.21 billion USD.</p> <p>Major technology companies support the Linux open-source operating system.</p> <p>Open Diary launches, becoming the first blog to allow readers to comment on other writers' blogs.</p> <p>Wikipedia and Snapfish launch.</p> | <p><b>41 1999</b><br/>150 million people worldwide use the Internet.</p> <p>Napster launches and has 32 million users in 18 months.</p> <p>LiveJournal starts, offering blogging, journaling and social networking features.</p> <p><b>42 2000</b><br/>40 countries have passed data protection legislation.</p> <p>Sharp releases camera cell phone.</p> <p><b>43 2001</b><br/>About 9.8 billion e-messages sent daily.</p> <p>Wikipedia and Snapfish launch.</p> | <p><b>44 2002</b><br/>Internet has more than 544 million users worldwide.</p> <p>1 billion computers sold worldwide.</p> <p><b>45 2003</b><br/>Spam accounts for about half of all e-mails. The CAN-SPAM Act is signed—regulating commercial e-mail.</p> <p>Friendster, MySpace, LinkedIn, Skype and Photobucket launch.</p> <p>Second Life, a 3-D virtual world, opens to the public.</p> | <p><b>46 2004</b><br/>Facebook, Mixi and MSN Spaces launch.</p> <p>Google begins digitizing library books.</p> <p>95% of U.S. libraries offer access to the Internet.</p> <p><b>47 2005</b><br/>Over 2 billion cell phone subscribers worldwide.</p> <p>del.icio.us, a social bookmarking Web service, launches.</p> <p>Flat screen TVs and HDTV are the "hot" items for the year.</p> <p>YouTube.com launches.</p> | <p><b>48 2006</b><br/>More than 92 million Web sites.</p> <p>Majority of visitors to U.S. Web sites Yahoo!, Time Warner, Microsoft, Google and eBay are non-U.S.</p> <p>NewsCorp buys MySpace for \$580 million USD. Google buys YouTube for \$1.65 billion USD.</p> <p>Social Web site users increase: MySpace—over 100 million; Classmates.com—40 million; Photobucket—25 million; Snapfish—19 million; Mixi—5.7 million; and 100 million clips are viewed and 65,000 new videos are created daily on YouTube.</p> | <p>Approximately 80% of the world's population covered by mobile phones. 68% of the U.S. population subscribes to mobile phones.</p> <p>Amazon.com posts user-submitted recommendations.</p> <p><b>49 2007</b><br/>More than 1.1 billion people worldwide use the Internet.</p> <p>Apple's iPhone introduced.</p> <p>Technorati tracks more than 94 million blogs.</p> <p>Skype, an Internet telephony system, has 171 million registered users.</p> <p>iTunes hits 2 billion sold.</p> <p>An estimated 97 billion e-mails sent daily worldwide, 40 billion of which are spam.</p> |
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| <p><b>1 1901</b><br/>The Library of Congress produces printed catalog cards. Shared cataloging begins.</p> <p><b>2 1903</b><br/>Mary Wright Plummer presents first code of ethics for librarians.</p> | <p><b>3 1919</b><br/>American Library Association (ALA) adopts first interlibrary loan code.</p> <p><b>4 1922</b><br/>Charles Knowles Bolton paper, "The Ethics of Librarianship: A Proposal for a Revised Code," promotes Mary Wright Plummer's concept.</p> | <p><b>5 1929</b><br/>ALA <i>Code of Ethics</i> for librarians defines relationship between library and public.</p> <p><b>6 1938</b><br/>ALA <i>Code of Ethics</i> details obligation to keep user information confidential.</p> <p><b>7 1939</b><br/>ALA adopts first <i>Library Bill of Rights</i>, stating right to intellectual freedom and libraries' role.</p> | <p><b>8 1940</b><br/>ALA creates Intellectual Freedom Committee to implement new <i>Library Bill of Rights</i>.</p> <p><b>9 1948</b><br/>ALA Council strengthens <i>Library Bill of Rights</i>, naming libraries as "guardians of free access."</p> <p><b>10 1952</b><br/>ALA revises interlibrary loan code, adopting standardized interlibrary loan form.</p> | <p><b>11 1953</b><br/>ALA and American Book Publishers' Council issue <i>Freedom to Read</i> statement articulating the professional responsibility of librarians and publishers to defend intellectual freedom.</p> <p><b>12 1966</b><br/>The U.S. Freedom of Information Act signed into law increasing access to U.S. Federal Government records—updated in 1996 to include electronic information.</p> | <p><b>13 1967</b><br/>AACR (Anglo American Cataloging Rules) published for use in designing library catalogs.</p> <p><b>14 1969</b><br/>First OPAC (ELMS) in use at IBM Advanced System Development Division library in Los Gatos, California.</p> <p><b>15 1971</b><br/>ALA Council adopts <i>ALA Policy on Confidentiality of Library Records</i>.</p> | <p>ALA approves <i>Resolution on Governmental Intimidation</i>—against intimidation and investigation.</p> <p>Libraries begin sharing cataloging resources electronically.</p> <p>Project Gutenberg, the first user-contributed, shared library, goes online.</p> | <p>The New York Public Library produces an automated book catalog.</p> <p><b>16 1974</b><br/>Congress issues the <i>Family Education Rights and Privacy Act (FERPA)</i> protecting privacy of student education records, including library records.</p> <p><i>Privacy Act of 1974</i> regulates collection, maintenance, use and dissemination of personally identifiable information.</p> | <p><b>17 1975</b><br/>ALA adopts <i>Statement on Professional Ethics</i>, which included statements requiring librarians to maintain the principles in the <i>Library Bill of Rights</i> and to protect the confidential relationship between the library and user.</p> <p>ALA establishes a Standing Committee on Professional Ethics.</p> <p>California Library Association and Ohio Library Association adopt statements on professional ethics.</p> | <p><b>18 1978</b><br/>AACR2 (Anglo American Cataloging Rules, Second Edition) issued.</p> <p><b>19 1981</b><br/>ALA adopts an amended <i>Statement on Professional Ethics</i>, which included more specific information regarding censorship.</p> | <p><b>20 1986</b><br/>ALA Council adopts revised <i>Policy on Confidentiality of Library Records</i>.</p> <p><b>21 1988</b><br/>Several library associations pass resolutions opposing the FBI Library Awareness Program.</p> | <p><b>22 1991</b><br/>ALA Council adopts <i>Policy Concerning Confidentiality of Personally Identifiable Information about Library Users</i>, outlining the role librarians play in supporting the First Amendment.</p> <p><b>23 1992</b><br/>Librarian Jean Armour Polly coins the phrase "surfing the Internet."</p> | <p><b>24 1994</b><br/>Library Web sites launch at Virginia Tech University, the University of Michigan and the U.S. Naval Research Library.</p> <p><b>25 1995</b><br/>ALA revises the <i>Code of Ethics</i> to encompass all library staff, not just professional librarians.</p> | <p>Jenny Levine creates and operates the first library technology blog, <i>Librarian's Site Du Jour</i>.</p> <p><b>26 1996</b><br/>ALA's <i>Library Bill of Rights</i> reaffirmed to include "age" in its scope.</p> <p><b>27 1998</b><br/>Bill Drew offers real-time reference service via instant messaging, while at the State University of New York at Morrisville.</p> | <p><b>28 1999</b><br/>American Association of School Librarians adopts <i>Position Statement on the Confidentiality of Library Records</i>.</p> <p><b>29 2000</b><br/>Children's Internet Protection Act (CIPA) and Neighborhood Children's Internet Protection Act (NCIPA) enacted.</p> | <p><b>30 2001</b><br/>USA PATRIOT Act signed into law.</p> <p><b>31 2002</b><br/>ALA Office for Intellectual Freedom publishes <i>The USA PATRIOT Act in the Library: Analysis of the USA PATRIOT Act Related to Libraries</i>.</p> <p>ALA Council approves <i>Privacy: An Interpretation of the Library Bill of Rights</i>.</p> | <p>ALA Council approves <i>Resolution Reaffirming the Principles of Intellectual Freedom in the Aftermath of Terrorist Attacks</i>.</p> <p>Minnesota enacts the first cyberspace privacy law in the U.S.</p> <p><b>32 2003</b><br/>ALA Council issues <i>Resolution on the USA PATRIOT Act and Related Measures That Infringe on the Rights of Library Users</i>.</p> | <p>Every state has statutes or a state attorney general opinion protecting library user confidentiality.</p> <p><b>33 2004</b><br/>ALA issues <i>What to Do If Served with a Search Warrant under USA PATRIOT Act</i>.</p> <p>ALA Council adopts revised <i>Policy Concerning Confidentiality of Personally Identifiable Information about Library Users</i>.</p> | <p>The <i>Campaign for Reader Privacy</i> launches as a measure to restore the safeguards for reader privacy eliminated by USA PATRIOT Act.</p> <p><b>34 2005</b><br/>ALA Council passes <i>Resolution on Radio Frequency Identification (RFID) Technology and Privacy Principles</i>.</p> <p><b>35 2006</b><br/>Cybrary City opens in Info Island/Second Life Library Service.</p> | <p>USA PATRIOT Act reauthorized.</p> <p>WorldCat.org debuts.</p> <p><b>36 2007</b><br/>More than 25,000 videos available on YouTube related to libraries or librarians.</p> <p>22% and 36% of U.S. library directors participate in social networking and social media, respectively.</p> |
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