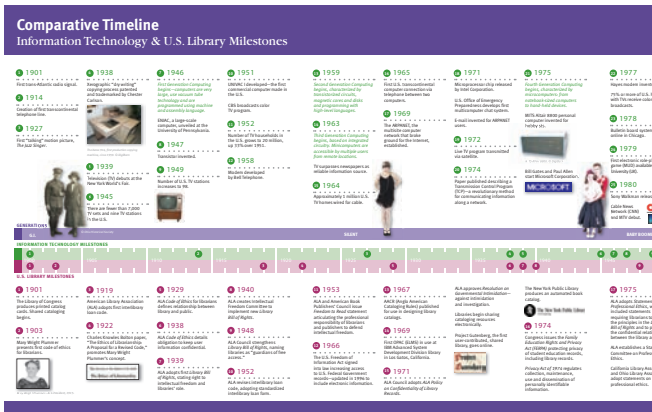




Appendix F: Comparative Timeline



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.

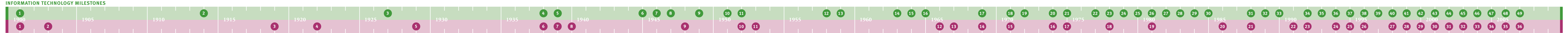
- 1901** The U.S. Library of Congress produces printed catalog cards. Shared cataloging begins.
- 1919** American Library Association (ALA) adopts its first resource sharing code.
- 1952** ALA revises interlibrary loan code, adopting standardized interlibrary loan form.
- 1969** The first online public 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 Polly Jean Armour 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

Comparative Timeline

Information Technology & U.S. Library Milestones

<p>1 1901 First trans-Atlantic radio signal.</p> <p>2 1914 Creation of first transcontinental telephone line.</p> <p>3 1927 First "talking" motion picture, <i>The Jazz Singer</i>.</p> <p>4 1938 Xerographic "dry writing" copying process patented and trademarked by Chester Carlson.</p> <p>5 1939 Television (TV) debuts at the New York World's Fair.</p> <p>6 1945 There are fewer than 7,000 TV sets and nine TV stations in the U.S.</p>	<p>7 1946 <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>8 1947 Transistor invented.</p> <p>9 1949 Number of U.S. TV stations increases to 98.</p>	<p>10 1951 UNIVAC I developed—the first commercial computer made in the U.S.</p> <p>CBS broadcasts color TV program.</p> <p>11 1952 Number of TV households in the U.S. grows to 20 million, up 33% over 1951.</p> <p>12 1958 Modem developed by Bell Telephone.</p>	<p>13 1959 <i>Second Generation Computing begins, characterized by transistorized circuits, magnetic cores and disks and programming with high-level languages.</i></p> <p>14 1963 <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>15 1964 Approximately 1 million U.S. TV homes wired for cable.</p>	<p>16 1965 First U.S. transcontinental computer connection via telephone between two computers.</p> <p>17 1969 The ARPANET, the multisite computer network that broke ground for the Internet, established.</p>	<p>18 1971 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>19 1972 Live TV program transmitted via satellite.</p> <p>20 1974 Paper published describing a Transmission Control Program (TCP)—a revolutionary method for communicating information along a network.</p>	<p>21 1975 <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>22 1977 Hayes modem invented.</p> <p>75% or more of U.S. homes with TVs receive color broadcasts.</p> <p>23 1978 Bulletin board system goes online in Chicago.</p> <p>24 1979 First electronic role-playing game (MUD) available at Essex University (UK).</p> <p>25 1980 Sony Walkman released.</p> <p>Cable News Network (CNN) and MTV debut.</p>	<p>26 1981 Laptop computer introduced.</p> <p>IBM releases the personal computer (PC).</p> <p>27 1982 The Federal Communications Commission (FCC) authorizes commercial cellular service for the U.S.</p>	<p>28 1983 Compact discs (CDs) sold.</p> <p>AT&T sells mobile phones commercially.</p> <p>29 1984 Apple Macintosh introduces personal computer with a graphical user interface.</p> <p>The 3.5" disk drive available.</p> <p>30 1985 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>31 1988 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>32 1989 Time, Inc. and Warner Communications merge.</p> <p>Nintendo introduces Gameboy.</p> <p>MP3 music format patented in Germany.</p> <p>33 1990 The World Wide Web developed by Tim Berners-Lee.</p>	<p>34 1992 Text messaging introduced by Nokia.</p> <p>Commercial traffic allowed on the Internet.</p> <p>35 1993 98% of U.S. households have at least one TV; 64% have two or more.</p> <p>Mosaic Web browser launches.</p> <p>36 1994 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>37 1995 Amazon, eBay and Classmates.com launch.</p> <p>Microsoft releases the Internet Explorer Web Browser (IE), and launches MSN Web Portal.</p> <p>38 1996 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>39 1997 Jorn Barger coins the term <i>Weblog</i>.</p> <p>40 1998 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>41 1999 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>42 2000 40 countries have passed data protection legislation.</p> <p>Sharp releases camera cell phone.</p> <p>43 2001 About 9.8 billion e-messages sent daily.</p> <p>Wikipedia and Snapfish launch.</p>	<p>44 2002 Internet has more than 544 million users worldwide.</p> <p>1 billion computers sold worldwide.</p> <p>45 2003 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>46 2004 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>47 2005 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>48 2006 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>Second Life, a 3-D virtual world, opens to the public.</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>49 2007 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>1 1901 The Library of Congress produces printed catalog cards. Shared cataloging begins.</p> <p>2 1903 Mary Wright Plummer presents first code of ethics for librarians.</p>	<p>3 1919 American Library Association (ALA) adopts first interlibrary loan code.</p> <p>4 1922 Charles Knowles Bolton paper, "The Ethics of Librarianship: A Proposal for a Revised Code," promotes Mary Wright Plummer's concept.</p>	<p>5 1929 ALA <i>Code of Ethics</i> for librarians defines relationship between library and public.</p> <p>6 1938 ALA <i>Code of Ethics</i> details obligation to keep user information confidential.</p> <p>7 1939 ALA adopts first <i>Library Bill of Rights</i>, stating right to intellectual freedom and libraries' role.</p>	<p>8 1940 ALA creates Intellectual Freedom Committee to implement new <i>Library Bill of Rights</i>.</p> <p>9 1948 ALA Council strengthens <i>Library Bill of Rights</i>, naming librarians as "guardians of free access."</p> <p>10 1952 ALA revises interlibrary loan code, adopting standardized interlibrary loan form.</p>	<p>11 1953 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>12 1966 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>13 1967 AACR (Anglo American Cataloging Rules) published for use in designing library catalogs.</p> <p>14 1969 First OPAC (ELMS) in use at IBM Advanced System Development Division library in Los Gatos, California.</p> <p>15 1971 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>16 1974 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>17 1975 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>18 1978 AACR2 (Anglo American Cataloging Rules, Second Edition) issued.</p> <p>19 1981 ALA adopts an amended <i>Statement on Professional Ethics</i>, which included more specific information regarding censorship.</p> <p>20 1986 ALA Council adopts revised <i>Policy on Confidentiality of Library Records</i>.</p> <p>21 1988 Several library associations pass resolutions opposing the FBI Library Awareness Program.</p>	<p>22 1991 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>23 1992 Librarian Polly Jean Armour coins the phrase "surfing the Internet."</p>	<p>24 1994 Library Web sites launch at Virginia Tech University, the University of Michigan and the U.S. Naval Research Library.</p> <p>25 1995 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>26 1996 ALA's <i>Library Bill of Rights</i> reaffirmed to include "age" in its scope.</p> <p>27 1998 Bill Drew offers real-time reference service via instant messaging, while at the State University of New York at Morrisville.</p>	<p>28 1999 American Association of School Librarians adopts <i>Position Statement on the Confidentiality of Library Records</i>.</p> <p>29 2000 Children's Internet Protection Act (CIPA) and Neighborhood Children's Internet Protection Act (NCIPA) enacted.</p> <p>30 2001 USA PATRIOT Act signed into law.</p> <p>31 2002 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>32 2003 ALA Council issues <i>Resolution on the USA PATRIOT Act and Related Measures That Infringe on the Rights of Library Users</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>33 2004 ALA issues <i>What to Do If Served with a Search Warrant under USA PATRIOT Act</i>.</p> <p>34 2005 ALA Council passes <i>Resolution on Radio Frequency Identification (RFID) Technology and Privacy Principles</i>.</p> <p>35 2006 Cybrary City opens in Info Island/Second Life Library Service.</p>	<p>Every state has statutes or a state attorney general opinion protecting library user confidentiality.</p> <p>36 2007 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>	<p>USA PATRIOT Act reauthorized.</p> <p>WorldCat.org debuts.</p> <p>36 2007 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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