

## Chapter 5

# Technology

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Technology is ubiquitous and permeates most aspects of our lives, environments, and expectations. Twenty-first century libraries are no exception. Libraries are challenged to cope with the integration of technology solutions for all library services as well as to plan for and assess the impact of technology based on user's expectations. Technology, however, is only a tool that is interwoven into all aspects of library services, programs, and operations. The significant keys that serve as the catalyst to unlock technology, the tool, include:

- an informed, qualified, and trained staff whose direct interaction, insight, and instruction in the provision of quality patron services are imperative;
- an adequate budget to maintain and improve all aspects of the library's technological environment and services; and,
- a long-range technology plan that embraces integration of new technologies into library services, programs, and operations.

**The multifaceted roles for technology in the library environment include but are not limited to:**

- telecommunications conduit(s): telephone, fax, Internet, e-mail, library network;
- in-library technology service for patron use (workstations, printers, use of software, Internet access, e-mail);
- access to resources within and beyond the local library's resources;
- expedited and enhanced patron services (automated circulation systems, self-checkout, e-commerce solutions);
- 24/7 library access (via the library's Web site); and
- improved staff efficiency in both serving patrons and in handling day-to-day routine library functions/operations.

**Applicable Core Standards**—Please see Core Standards 11, 13, 16, 17, 18, 19, 22, 23, and 24 in Chapter 1.

### Technology Standards

1. Based on local technology planning, the library ensures adequate technological access and maintains appropriate hardware/software that effectively accommodates both library operations and patron needs.
2. The library must have a(n):
  - telephone, with the listing included in both the white and yellow pages;
  - telephone voice mail and/or answering machine;
  - fax;
  - photocopier;
  - effective Internet access, preferably broadband, for both the staff and the public;
  - library e-mail account for patron communication with the library (this e-mail account must be reviewed daily);
  - an *Americans with Disabilities Act* (ADA) compliant library Web site that is updated monthly;
  - up-to-date computers for staff and public access;
  - up-to-date printers for staff and public access;
  - up-to-date anti-virus protection installed on every library computer;

- telephone access for deaf/hearing impaired patrons: TTY (text telephone), TDD (Telecommunications Devices for the Deaf), TRS (Telecommunications Relay Service), or other relevant technologies; and,
  - a valid e-mail address, accessible via the library's Web site, for the library director.
3. The library provides a sufficient number of patron accessible workstations to meet patron demand. The wait time for patron accessible workstations is minimal and does not exceed 15 to 30 minutes.
  4. The library annually evaluates its Internet connectivity options for service impact and cost-effectiveness. Illinois libraries participate in the Illinois telecommunications network/backbone, i.e., the Illinois Century Network [<http://www.illinois.net/>] when such participation is economically feasible.
  5. The library provides 24/7 remote access to library services and resources through:
    - a Web-accessible library catalog;
    - an *Americans with Disabilities Act* (ADA) compliant library Web site that is updated monthly;
    - appropriate regional, state, national, and international bibliographic databases;
    - other statewide electronic resources that are available for direct patron use; and,
    - virtual reference service, and/or instant messaging, and/or a library e-mail account.
  6. The library staff must be:
    - computer literate;
    - trained to use and assist patrons in the use of electronic resources and materials; and,
    - accessible via e-mail either through a unique e-mail address or a library generic e-mail address.
  7. The library provides or partners with other community agencies to offer its patrons instruction (workshops, classes) in the use of computers, e-mail, and the Internet.
  8. The library provides Web links and access to regional and/or statewide initiatives including:
    - regional library system consortial Web-based catalogs;
    - the Statewide Illinois Library Catalog (SILC);
    - the CARLI academic library catalog (I-Share);
    - Illinois State Library sponsored databases/e-resources;
    - other electronic collections as available; and,
    - virtual reference service.
  9. As an equal partner in resource sharing, the library inputs and makes its collection holdings accessible for resource sharing within a regional, statewide, national, and/or international database.
  10. The library has a board-adopted Internet acceptable use policy that is reviewed annually.
  11. The library must budget for ongoing technology needs including but not limited to: hardware and software purchases, upgrades, ongoing maintenance, services, and connectivity.
  12. The library maintains, troubleshoots, repairs, and replaces computer hardware and software. This ongoing maintenance is handled by trained library staff and/or via a contractual service agreement with an appropriate service provider.

- 13.** The library must develop a strategic plan for its future technology needs. The plan is based on current state, national, and international standards. The plan includes the date of implementation, the planned review schedule, and addresses, at a minimum, the areas noted below as required in the Schools and Libraries Program of the Universal Service Fund [<http://www.universalservice.org/sl/applicants/step02>]:
- goals and realistic strategy for using telecommunications and information technology;
  - a professional development strategy;
  - an assessment of telecommunications services, hardware, software, and other services needed;
  - budget resources; and,
  - ongoing evaluation process.
- 14.** The library continuously strives to improve its technological services, resources, and access. An ongoing planning cycle includes a needs assessment that examines current and emerging technologies and service enhancements including but not limited to:
- wireless access (Wi-Fi);
  - Internet connectivity upgrades (upgrade from dial-access to broadband services; for example, upgrade to DSL, Cable, T-1, T-3, etc.);
  - networking (local area vs. wide area);
  - library Intranet;
  - an *Americans with Disabilities Act* (ADA) compliant library Web site that is updated monthly, highlights library services and programs, includes hyperlinks, and is interactive;
  - patron self-checkout functionality;
  - new technologies/potential services; for example, wikis, blogs, and online chat;
  - current and functional meeting room technology;
  - adaptive technologies that accommodate service needs for persons with disabilities and special populations, including but not limited to: accessible computer hardware, deaf interpreters, language translators, open captioning; and,
  - ongoing staff continuing education/training related to all aspects of technological services.
- 15.** The library protects the integrity, safety, and security of its technological environment via:
- anti-virus software;
  - firewalls;
  - authentication;
  - routine installation of upgrades, patches, etc.;
  - scheduled data backup; and,
  - remote/off-site storage of data backups.
- 16.** The library's automated catalog and its components comply with current state, national, and international standards including, for example, but not limited to:
- Illinois Statewide Cataloging Standards [[http://www.cyberdriveillinois.com/departments/library/whats\\_new/pdfs/catalog\\_standards.pdf](http://www.cyberdriveillinois.com/departments/library/whats_new/pdfs/catalog_standards.pdf)];
  - MARC 21 (Machine Readable Cataloging) formats [<http://www.loc.gov/marc/>];
  - Dublin Core Metadata Initiative (DCMI) [<http://dublincore.org/>];
  - ANSI (American National Standards Institute);
  - NISO (National Information Standards Organization);
  - ISO (International Organization for Standardization; and,
  - Specific standards include: ANSI/NISO Z39.50 protocol, the Bath Profile, and ISO 16160, 10161.

17. The library applies for E-Rate discounts (telecommunications/connectivity services and/or Internet access) as available through the Schools and Libraries Program of the Universal Service Fund, administered by the Universal Service Administrative Company (USAC) under the direction of the Federal Communications Commission (FCC).  
[<http://www.universalservice.org/sl/about/overview-program.aspx>]

## Technology Checklist

- \_\_\_\_\_ Based on local technology planning, the library ensures adequate technological access and maintains appropriate hardware/software that effectively accommodates both library operations and patron needs.
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  - fax;
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  - library e-mail account for patron communication with the library;
  - the library e-mail account is reviewed daily;
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  - a valid e-mail address, accessible via the library's Web site, for the library director.
- \_\_\_\_\_ The library provides a sufficient number of patron accessible workstations to meet patron demand.
- \_\_\_\_\_ The wait time for patron workstations does not exceed 15 to 30 minutes.
- \_\_\_\_\_ The library annually evaluates its Internet connectivity options for service impact and cost-effectiveness.
- \_\_\_\_\_ The library provides 24/7 remote access to library services and resources through:
- a Web-accessible library catalog;
  - an *Americans with Disabilities Act* (ADA) compliant library Web site that is updated monthly;
  - appropriate regional, state, national, and international bibliographic databases;
  - other statewide electronic resources that are available for direct patron use; and,
  - virtual reference service, and/or instant messaging, and/or a library e-mail account.
- \_\_\_\_\_ The library staff must be:
- computer literate;
  - trained to use and assist patrons in the use of electronic resources and materials; and,
  - accessible via e-mail either through a unique e-mail address or a library generic e-mail address.
- \_\_\_\_\_ The library provides or partners with other community agencies to offer its patrons instruction (workshops, classes) in the use of computers, e-mail, and the Internet.
- \_\_\_\_\_ The library provides Web links and access to regional and/or statewide initiatives including:

- regional library system consortial Web-based catalogs;
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- Illinois State Library sponsored databases/e-resources;
- other electronic collections as available; and,
- virtual reference service.

\_\_\_\_\_ As an equal partner in resource sharing, the library inputs and makes its collection holdings accessible for resource sharing within a regional, statewide, national, and/or international database.

\_\_\_\_\_ The library has a board-adopted Internet acceptable use policy.

\_\_\_\_\_ The Internet acceptable use policy is reviewed annually.

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\_\_\_\_\_ The library maintains, troubleshoots, repairs, and replaces computer hardware and software. This ongoing maintenance is handled by trained library staff and/or via a contractual service agreement with an appropriate service provider.

\_\_\_\_\_ The library must develop a strategic plan for its future technology needs. The plan is based on current state, national, and international standards.

\_\_\_\_\_ The library continuously strives to improve its technological services, resources, and access. An ongoing planning cycle includes a needs assessment that examines current and emerging technologies and service enhancements including but not limited to:

- wireless access (Wi-Fi);
- Internet connectivity upgrades (upgrade from dial-access to broadband services; for example, upgrade to DSL, Cable, T-1, T-3, etc.);
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- patron self-checkout functionality;
- new technologies/potential services; for example, wikis, blogs, and online chat;
- current and functional meeting room technology;
- adaptive technologies that accommodate service needs for persons with disabilities and special populations, including but not limited to: accessible computer hardware, deaf interpreters, language translators, open captioning; and,
- ongoing staff continuing education/training related to all aspects of technological services.

\_\_\_\_\_ The library protects the integrity, safety, and security of its technological environment.

\_\_\_\_\_ The library's automated catalog and its components comply with current state, national, and international standards.

\_\_\_\_\_ The library applies for E-Rate discounts (telecommunications/connectivity services and/or Internet access) as available through the Schools and Libraries Program of the Universal Service Fund, administered by the Universal Service Administrative Company (USAC) under the direction of the Federal Communications Commission (FCC).

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- Neiburger, Eli. *Gamers ... in the Library?! The Why, What, and How of Videogame Tournaments for All Ages*. Chicago: ALA, 2007.

## **Web sites**

*Americans with Disabilities Act*  
<http://www.ada.gov/>

ADA Best Practices Tool Kit for State and Local Governments  
<http://www.ada.gov/pcatoolkit/chap5toolkit.htm>

ADA Compliancy  
<http://www.csub.edu/els/WebServices/Accessibility/item881.html>

How to Make a Good Web Site  
[http://www.mc.maricopa.edu/its/tss/pdfs/web\\_stuff.pdf](http://www.mc.maricopa.edu/its/tss/pdfs/web_stuff.pdf)

Illinois Web Accessibility Guidelines  
<http://www.illinois.gov/iwas>

International Center for Disability Resources on the Internet  
[http://www.icdri.org/CynthiaW/is\\_%20yoursite\\_ada\\_compliant.htm](http://www.icdri.org/CynthiaW/is_%20yoursite_ada_compliant.htm)

W3C/Web Accessibility Initiative  
<http://www.w3.org/WAI/eval/Overview.html>

## Technology Glossary

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**24/7/365:** 24/7/365 is access to library service(s) 24 hours a day, 7 days a week, 365 days a year.

**Adaptive Technologies:** Adaptive technologies enable disabled persons (visual, hearing, mobility) to utilize products that they would not normally be able to use such as computers, phones, movies, etc.

**Authentication:** Authentication is the verification of an individual's identity.

**Blog:** A blog is a type of Web site, typically in journal format, that permits user posts. The posts generally are arranged in chronological order with the most recent post at the top.

**Broadband:** Broadband is high speed Internet connectivity ranging from 256kbps (kilobits per second) and higher.

**E-Rate:** The Schools and Libraries Program of the Universal Service Fund, commonly known as "E-Rate," is administered by the Universal Service Administrative Company (USAC) under the direction of the Federal Communications Commission (FCC), and provides discounts to assist most schools and libraries in the United States to obtain affordable telecommunications and Internet access.

**Firewall:** A firewall is a collection of security measures designed to prevent unauthorized electronic access to a networked computer system.

**Hardware:** Hardware is computer components such as the monitor, keyboard, central processing unit (CPU), mouse, etc.

**Internet:** The Internet is an international network of computer networks.

**Open captioning:** Open captioning is on-screen text descriptions that display a video's dialogue.

**Remote access:** Remote access is the ability for a library patron to access via computer various library resources (the library catalog, Web site, electronic databases, etc.) 24/7/365.

**Software:** Software is the computer programs that operate the computer system itself as well as user programs that enable the creation and manipulation of data.

**TDD:** Telecommunications Device for the Deaf. See TTY.

**TRS:** Telecommunications Relay Service. With TRS, an operator types what the caller says, and the person being called reads the text on a TTY. In turn, the person being called responds via TTY, and the operator reads the text aloud to the caller.

**TTY:** TTY is a text telephone that enables the deaf, hard of hearing, and speech-impaired to communicate via text messaging. A TTY is needed at both conversation points.

**Virtual reference:** Virtual reference is a 24/7/365 collaborative Web-based reference service among libraries designed to meet user's reference needs through electronic means (e-mail, chat, instant messaging, etc.).

**Voice relay:** See TRS.

**Wi-Fi:** Wi-Fi is wireless networking technology.

**Wiki:** A wiki is a Web page or collection of Web pages designed to enable anyone who accesses the wiki to contribute or modify content.