

INFORMATION TECHNOLOGY ASSESSMENT & RECOMMENDATIONS

The Albany County Public Library (ACPL) seeks to improve library services for the residents of Laramie and Albany County and to provide quality space in which to deliver those services. The library recognizes the critical role of information technology (IT) in 21st Century libraries and how IT affects both the library facility and the library's services.

The current Technology Plan for the library states that the goals in using technology are 1) to provide greater access and more up-to-date materials and services to patrons and 2) to increase workplace efficiency. Technology can indeed support the library in achieving these goals, and understanding how technology impacts the library's physical space and design is a first step in doing so.

The staff's verbatim examples (listed below) of how the library is currently using technology focuses primarily on basic applications of technology in public libraries. The examples are:

- Communication among staff and others across the state, using a variety of tools;
- Computer classes for the public;
- Support for public computer users;
- All Wyoming libraries are connected;
- Patrons can checkout from any Wyoming library
- Reference department;
- Even youngest of children can use computers and have access to technology;
- We could not provide the current level of library service without computers;
- Free internet;
- Able to find many information sources and facts, using the internet and available sources;
- Early provider of wireless to the public;
- State-wide resources available through WYLD; and
- ILLS (interlibrary loans).

The staff's list of the most critical technology issues that the library faces shows that basic needs are the primary hurdles preventing the library from advancing its use of technology, and therefore, services that require technology. The staff-identified basic needs included:

- Faster computers and internet connection;
- Integrated library system crashes¹;
- Internet is unreliable;
- Funding;

¹ DSL lines have been installed shortly after the IT consultant completed her draft report. The crashes have now stopped.

- Someone onsite maintaining and troubleshooting technology (2);
- Additional printer for adult computers;
- Updated software;
- Making sure all computers work;
- More catalog-only computers in the children's area (Note: One additional catalog-only computer has been added to the children's area since staff completed the questionnaire for this study.);
- Keeping up with changes, replacing computers in a timely manner;
- Computers are often down; and
- Keeping current.

Staff input was collected in response to a questionnaire distributed by the technology consultant. The consultant interviewed staff members and observed library use during an on-site visit in July 2009.

As the library considers its current and future physical facilities, the library has the opportunity to consider further development of its technology installation. The following findings and recommendations are primarily focused on issues and technologies that impact physical space and facility design.

IT MANAGEMENT & NETWORK INFRASTRUCTURE

Key findings and observations include:

1. Given that the building pre-dates technology, the addition of information technology to the building is an accomplishment but also a challenge.
2. The library upgraded its cabling in 2008, but the building still lacks a full structured technology infrastructure. The upgrade replaced out-dated cabling but continued the approach of using small, limited capability switches for groupings of computers rather than having one cabling run for each network device. All cables terminate in the lower level, and new cables were pulled to accommodate a later move to another space in the lower level.
3. Available network jacks are non-existent or very difficult to find, limiting the expansion capabilities without running cables (or using another switch to share a cable run).
4. Network components should be out of sight and secure in spaces dedicated for that purpose. However, wireless access points and workgroup switches are accessible in public spaces.
5. County IT is working with the Foundation to obtain funding to design and develop a structured and managed network.

6. Two DSL lines now connect the library to the internet, with 7 megabytes per second (Mbps) down and 1 Mbps up. The two lines can be bundled for redundancy. This is a recent upgrade, and increased the bandwidth.
7. Wireless access is provided in most public spaces.
8. Servers are located in the mechanical room in the lower level. No server for the integrated library system is required as the library uses the statewide system.
9. Minimal space is allocated in the mechanical room for the management of the technology in the library.
10. A large quantity of obsolete and unused computer equipment sits in the lower level, both on shelves and on the floor.
11. The library lacks sufficient isolated electrical circuits to be able to isolate and protect critical equipment. There is a question as to how much additional electrical capacity the current system can support. Power was brought into the rooms via power poles for the groupings of public computers.
12. The computers and IT equipment are replaced on an as-needed basis more than on a regular replacement schedule, primarily due to budget concerns.
13. Some open source applications are used, primarily for staff applications.
14. The library is part of the county's telephone system, which is Voice over IP (VoIP).
15. The library is installing (now installed) a projector and a surround sound system in the meeting room. The room has a recessed screen.
16. Management and primary support of the library's technology is provided through a library staff position, but that position became vacant early in summer 2009. Staff from the county IT department serves as a resource to the library's IT staff and provides all support during staff vacancies. Library management is reviewing the in-house position.
17. The library has a technology plan, which was written by the previous library technology services staff member.

Recommended Technology for New and/or Expanded/Renovated Library Facilities

The consultants' recommendations include:

1. The network infrastructure best practices recommended by the Albany County IT staff are consistent with industry best practices, and the library should apply them in the design of its infrastructure for any renovation or expansion. They include Category 6 cable as a minimum, fiber between telecommunication closets and switches, and 1 gigabyte (Gb) to each desktop.
2. Continue to monitor the library's use of bandwidth and to implement techniques and tools to manage it. Plan for additional increases as use warrants.
3. Provide wireless access throughout the building.

4. When planning for the renovation, expansion, or construction of library buildings, include dedicated spaces for the management of IT, including Telecommunication Closets, Server Rooms and IT Workroom. Each floor should have its own telecommunication closet; a small, secure cabinet in a staff area may serve this purpose on floors other than the floor with the server room. On the floor with the server room, the telecommunication closet and server room may be combined.
5. Separate from, but adjacent to, the server room should be the IT Workroom, used to stage the deployment of new equipment, test and repair existing equipment, store IT spare parts and tools, and manage the library's servers and network.
6. Space for a server room and IT workroom could be created in the lower level of the existing facility, such as in the area where obsolete computer equipment is currently stored.
7. Include sufficient electrical capacity to support future expansions of the library's technology in any renovation or new facility.
8. Follow a regularly scheduled replacement of computers, printers, and critical network equipment. Industry standards and best practices recommend a three-four year schedule. Budgeting for a replacement of one-third to one-fourth annually is recommended. Staff efficiency and customer service are affected by outdated equipment and applications and are a source of frustration as seen by the several staff comments.
9. Open source applications continue to be of interest throughout the information and library industry because of the perceived cost savings. However, applications still require support. In agencies that have minimal staff support, most public libraries, available support for the product should be a primary factor in evaluating and selecting any software application. The ACPL must have dedicated IT staff if it hopes to achieve and maintain IT competence for the staff and the public it serves.
10. Continue to enhance the audiovisual systems in the meeting room to provide recording capabilities.
11. Provide in-house, full-time library staff for day-to-day management (Systems Librarian) and as a first line of support for the library's local network and in-house technology systems (Network Manager). Continue the partnership with the county on planning for future technology implementations and use the county's services as a resource as well as for back-up support services.
12. Continue to revise and update the technology plan annually.

Staff Comments on Technology that Should be Changed

The County IT staff members, who have primary responsibility for supporting the library (in summer 2009), identified the following priorities, and the consultant supports this list.

1. Design and install a structured technology infrastructure.
2. Provide additional network drops (jacks) to increase capacity and flexibility.
3. Plan for the use of proximity cards for access security (to be consistent with other county facilities).
4. Increase wireless access to cover the entire building.
5. Plan for a three-year replacement cycle of computers and network equipment.

TECHNOLOGY FOR STAFF

Key findings and observations include:

1. Staff members have either a desktop or a laptop computer at staff desks and service desks. Some staff members use local printers while others print to a network printer used by multiple staff members. Some printers are placed on top of file cabinets or other items stacked on top of desks. Models and manufacturers of the computers and printers vary. Some changes can be made to improve staff efficiency. Adding computers and printers were the two most frequently mentioned technology needs for staff.
2. Much of the existing staff furniture was acquired prior to technology and is not ergonomic.
3. Circulation tasks, including checkout, check-in, and sorting, are primarily manual, with transactions tracked and managed through the statewide shared integrated library system.

4. Staff uses an automated time card system.
5. The copier in the public area is the only copier and is used by staff.

Recommended Technology for Library Staff in New and/or Expanded/Renovated Library Facilities

The consultants' recommendations include:

1. Technology for staff must include computers and telephones for staff conveniently located at service and staff desks, networked printers with both color and black and white capabilities, copiers with color and black and white capabilities, fax capability, and document scanners conveniently located for multiple staff use and staff efficiency. Multifunction machines may be used.
2. Provide a minimum of one computer per staff desk and one computer per staff member on desk duty at service desks. Printers and copiers should be on the network.
3. Equip staff workstations with headphones, microphones, and cameras to support multiple communication options. Headphones, for instance, will allow staff to walk to the book stacks searching for a title that a customer has inquired about while maintaining contact with the customer.
4. The furniture used in staff offices should be ergonomically designed specifically for computer use. Typical, furniture design features should include:

- Adjustable monitor shelf or stand
 - Adjustable keyboard and mouse tray
 - Adequate desktop grommets
 - Cable management.
5. Library furniture and office systems provide wiring harnesses, channels, and grommets for wire-management. These features should be considered when selecting all partitions, desks, tables, and carrels.
 6. Desktop (work surface) space should be large enough to accommodate the monitor (including wide screen or dual monitors), speakers, and a variety of peripherals which may include barcode scanner/RFID reader, and telephone. Some staff desks may also need space to accommodate a local printer or multi-function device.
 7. Offices should be configured with a minimum of duplex data jacks and power outlets on at least two different walls within an office, ideally on each wall. Data jack and power outlet placement should take into account the furniture design and placement to avoid having data jacks and power outlets inaccessible behind desk modesty panels, bookcases or credenzas.
 8. Plan to accommodate Radio Frequency Identification (RFID) collection management and circulation for use now or in the future. RFID should be considered especially if self-check stations are planned and/or if circulation increases. Specific components that must be designed to accommodate RFID include:
 - Circulation check-in and check-out stations
 - Book returns
 - Materials Security or exit gates (optional)
 - Self-Check Stations.
 9. When planning for RFID, consider allocating space for a small two or three bin sorter attached to the primary book return. As an example of the space required, one two-bin system on the market is approximately 33 inches long, 24 inches wide, and 30 inches high without the bins, and one three-bin system has a footprint of 76 inches long and 30 inches wide without the bins.² Until a specific system is selected, the exact space requirements will not be known.
 10. Provide at least one staff-only color copier in a central location for staff.

Staff Comments on Technology that is Missing for Staff

Comments from library staff on technology that is missing for staff focuses on the desire to improve staff efficiency. Some of the comments impact staff and building design, such as space for printers at the desks. Other comments are primarily for staff efficiencies. The list includes the following:

² Bin footprints vary, for example – 26” x 26”, 32” x 32”, 21” x 37”, and 29’ x 37”.

1. Another computer.
2. Additional printer.
3. Faster and more reliable internet connection.
4. Up-to-date computers.
5. Ergonomic workstations.
6. Current software.
7. Backup for integrated library system could be improved.
8. Color photocopier.
9. Hands-free microphone for program speakers.
10. Larger monitor (rather than use laptop display).
11. Printer for photographs.
12. Scanner.³
13. Updated credit card machine.
14. Change in settings on staff computers, particularly at the Information Station, so that staff does not have to log in and wait for integrated library system to reload after a short period of non-use.
15. Training on software to get the full benefit of the software.
16. Additional Adobe licenses.
17. Better connections to server, and a new server.
18. RFID.

Staff Comments on Changes in Staff Technology Location

1. Working color printer closer to the offices.

³ Subsequent to the draft report the ACPL has acquired a printer with scanning capability.

2. Router in a more obvious location.
3. Improved placement of equipment in the AV closet, perhaps a mobile cabinet that could be rolled into the room with a simplified connection system; could also be used to store other technology items, e.g., digital camera, scanner, cords, etc.
4. Space on staff desks for printers.
5. Shared equipment located in a more centralized and accessible location.

TECHNOLOGY FOR THE PUBLIC

Key findings and observations include:

1. Staff listed the need for more public computers as the greatest technology need related to public services.
2. Using data currently available from the Wyoming State Library and the peer libraries selected for this study, Table 10.1 compares the quantities of public computers. Note that statistics are for the entire counties; counts for individual branch libraries were not available for comparison purposes.
3. Albany County falls between the Enhanced and Comprehensive Levels, which is respectable. However, when comparing Albany to its Wyoming peers, the library ranks five out of six, in terms of computers per 1,000 population.

Table 10.1

Fiscal Year 2008 Internet PC Statistics for Albany County & Wyoming Peer Libraries

	population	actual Internet PCs		common levels for Internet PCs		
		no. of internet computers	computers per 1,000 population	"basic" (1 per 2,000)	"enhanced" (1 per 1,500)	"comprehensive" (1 per 1,000)
Campbell County	40,433	32	0.79	20	27	40
Sweetwater County	39,305	83	2.11	20	26	39
Fremont County	37,479	36	0.96	19	25	37
Albany County	32,227	29	0.90	16	21	32
Sheridan County	27,998	33	1.18	14	19	28
Park County	27,073	31	1.15	14	18	27
Average		40.67	1.18	17.04	22.72	34.09
Median		32.50	1.05	17.43	23.24	34.85

source: Wyoming State Library

prepared by LMA Techwork, Inc. exclusively for the ACPL, August 2009

Note: A bolded & italicized number indicates the highest level met by the given Library.

4. In Laramie, as of July 2009, 29 computers were available for the public, with nine in the adult area for one hour use, four express computers, four catalog-only computers, one word processing-only computer, six in the teen area, and five in the children's area. The library recently added two of the computers in the teen area and a printer through a grant, and staff reports that this quantity seems to meet current demand.
5. Although some computers are labeled "catalog-only" or "word-processing only", in reality they are used to access the internet according to staff reports.
6. Four computers (five since August 2009) are designated as catalog-only computers, four in the adult area and one in the children's area. This quantity should be sufficient for the current quantity of users.
7. The public computer space in the children's area was originally planned to allow a parent to sit next to a child because children are not to be left unattended. However, the space is required for the five computers, which are often all in use. Staff mentioned that ten computers would be more likely to meet the current demand.

8. An area has been established with resources of interest to older adults, but no public computers are in this area. Any computers located in this area should include a variety of assistive devices, including screen enlargers.
9. The public Internet computers in the adult room are not in the line of sight of the service desks, but this is by design. Staff reported that this location was designed to provide privacy to computer users and to minimize complaints from library patrons.
10. One black and white copier is provided for use by both public and staff.
11. A scanner sits on the counter behind the circulation desk and is connected by staff to a public computer for public use upon request.
12. Three microform machines are provided in the Wyoming room. None is connected to a computer and none of them are working.
13. The primary adult computers are on a one hour limit although this is self-monitored. If patrons are waiting, staff asks users who have exceeded the hour to leave.
14. Sign-up for the public computers is self-monitored and done on the honor system. This system is unreliable as a source of usage statistics, and the library is moving to collecting data two weeks during the year for reporting purposes.
15. Payment for printing is done through the honor system, using a box placed by the public printer. If the Library's experience is at all similar to other libraries which have used the honor approach, with which the consultant has had contact, receipts do not cover expenses.
16. Wireless access points are located throughout the public space. The County IT staff has worked to create a unified wireless system to enable movement throughout the building.
17. Minimal power outlets and public seating are available for laptop users. The most frequently used location during the consultant's visit was next to the teen computers. Children's staff reported that the lack of safe access to power outlets in the children's area is problematic for parents who want to use laptops while their children use the resources in the room. While the carrels include power, wireless access is limited in that area of the building.
18. Computer training is offered monthly by the library. Because no separate lab exists, the public computers are used, and training is scheduled before the library opens.
19. The library's equipment includes gaming equipment for teen programming, which is used weekly. Staff borrows a staff laptop but would prefer to have a laptop dedicated to this purpose.
20. Library staff handles all circulation tasks; no self-service is offered. It is not uncommon for libraries with successful self-check services to report over 50 percent of checkouts done via self-service. Some libraries have reported close to 100 percent.

21. Ready locations for self-service stations are limited in the current facility, with the most noticeable gap being accessible power. Introducing self-service stations can enable a library's circulation desk to be streamlined, and space, and power, may be acquired in that way.
22. County IT is redesigning the library's web site to provide a consistent look and easy updating.

Recommended Technology for New and/or Expanded/Renovated Library Facilities

1. Plan space to accommodate a quantity of public Internet computers (in addition to catalog-only computers) equal to one per every 1,000 population as a minimum. Of course, new developments in technology and broadband distribution may require future changes to the formula. Changes in population and demographics can also affect the public's use of the library's computers. The library should continually evaluate the quantity of public computers needed to meet the demand based on actual usage. An automated system of reserving computers will assist in the counting and provide more reliable information.
2. Continue providing separate groupings of computers in the adult area, children's area, and teen area, with catalog-only computers in each primary public service area.
3. Provide multiple computer stations in the teen and children's areas where two persons can easily work together. Characteristics of these stations include
 - allowing more floor and desktop space to easily accommodate two persons, providing multiple headsets for the computer, and consideration of placement of the computer so that nearby users are not impacted. Such an arrangement is particularly helpful where parents can work with youth.
4. Generally, it is recommended to locate public computers in easy sight of staff at the service desk in that area and within easy public access to the service desk to request assistance, or locate a service desk with easy access to support public computers users.
5. Locate a public printer in an easily accessible central location or in each of the primary groupings of public Internet computers.
6. Provide wireless access throughout the building.
7. Provide seating and power for wireless users in all primary public service areas, except any specifically designated as computer-free zones (e.g. as quiet reading areas). Include power connections for mobile devices in library furniture for the public areas and meeting rooms. Such units, which retract flush with the furniture (a conference room tabletop, for example) when not in use or are mounted flush with the furniture (such as contained within a table leg), are both attractive and functional. Providing library users with access to only wall or floor outlets can result in cables and cords strung across pathways, resulting in unsafe conditions or requiring users to place equipment, and to work in, places never intended for such use.
8. Consider an automated self-service/self-pay public printing system to replace the honor system.

9. The furniture selected to house the various pieces of equipment should be able to accommodate a wide variety of CPU designs. Furniture must not be designed for one size of footprint or style of equipment but be flexible to accommodate future equipment designs and combinations. The furniture selected should accommodate standup or sit down configuration, be ADA compliant, and provide adequate cable management. Some public work areas and groupings of public computers must accommodate multiple persons working together on a project, with more than one of the group using public computers or their own personal laptops.
10. Equip small group study rooms with wireless access, flat panel displays, and connections for various personal devices such as laptops and MP3 players.
11. Support production of multimedia presentations and reports by equipping at least one public computer in the adult grouping and one in the teen grouping with a flatbed scanner and multimedia authoring and editing software.
12. As microform equipment is replaced, select digital equipment with multiple document management and output capabilities.
13. Provide a dedicated space for use as a training lab and as an overflow space for public computing. As an alternative, use a group of laptops and conduct training programs in conference or meeting rooms.
14. Gaming stations, which are continually available, rather than on a scheduled program basis, are becoming more common in libraries with teen services.

Such stations could be mounted on a portable cart or on a stationery computer station. A minimum of two should be provided.

15. Offer self-check as an option, including one positioned at a height for children. For self-check to be successful:
 - Staff sees self-check as the preferred circulation choice
 - Multiple self-service units exist and are conveniently located
 - The units must be clearly visible to patrons
 - Assistance from library staff must be readily available without requiring a patron to leave the self-check station
 - Easy step-by-step instructions must be presented by the self-check unit
 - Barcodes on patron cards and barcodes or RFID tags on materials must be quickly and correctly read
 - Blocks are set at a high enough level to minimize the need for a patron to move to the circulation desk to remove a block;
 - Returned materials for which there are limits, such as DVDs, are checked in upon return so the customer is not blocked from checking out additional items in the same visit
 - Self-check units must be reliable
 - All material types must be supported.
16. Plan for the development of self-service beyond self-checkout, including self-pay and self-check-in.

17. Utilize a dynamic, digital signage system with large screen monitors as recommended by the consultants in the Program of Service report in the public areas to welcome users and promote library services. Monitors should be easily visible and in key locations, such as the entrance lobby, at service desks, and the entrance to primary public service areas if these are located away from the entrance lobby or service desks.

Comments on Technology that is Missing for the Public

1. More computers.
2. Self-check stations.
3. Color printer.
4. Scanner that is always connected.
5. Additional black and white printer.
6. More catalog-only computers, particularly in the children's area. *(Note: One additional catalog-only computer has been added to the children's area since staff completed the questionnaire.)*
7. Instant messaging for reference.
8. Five more computers in the children's area.
9. A user-friendly search engine.
10. Faster, consistent Internet connectivity.
11. Additional space and computers for the public and the staff and public, especially if there will be more customers.

12. Staff to support public computer use.
13. ADA compliant equipment.
14. Web site that is more ADA compliant.
15. Ability to record and make available audio and video recordings of programs.⁴
16. Digital microform readers with e-mail capabilities.
17. Automated sorter.
18. Library 2.0 services.
19. Public book reviews.
20. Receipts upon check-in.

Staff Comments on Public Technology Location

1. Printers in more accessible location, perhaps by the one-hour computers.
2. Computers in more private space.
3. Computers in space better suited for parents with small children.
4. More power outlets for wireless.
5. Location options are limited due to limited space and power outlets.

⁴ A new video camera has also been received after the draft report was completed.