Ward Town Library
Technology Implementation Plan
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LIS 4100
Library and Information Technologies
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EXECUTIVE SUMMARY

The Ward Town Library was established in 1974 and serves as an informal book exchange for a community of approximately 380 people in and around the small, isolated mountain town of Ward, Colorado. In the more than thirty-five years of its existence, the library has become an important cultural institution in the town, but the collection has never been cataloged and circulation has never been managed. The only technology used in the library now is an old phonograph and an electric typewriter.

This plan envisions an ultra-low-budget technology implementation in the Ward Library that will make available the most important functionalities of a modern library without requiring large investments in hardware, software, or staff training. Highlights of the plan include the following:

Acquisition of four desktop computer workstations and a battery-equipped netbook computer to be used in case of power outages.

Broadband Internet access with all-wireless networking.

Cataloging and organizing the hundreds of items in the library using the free online service, LibraryThing.

Online browsing and searching with LibraryThing in high- or low-graphics mode.

Managing circulation with LibraryThing.

Regular local export of online catalog data from Librarything to ensure operability during power or Internet service interruptions.

Implementation of a library web portal with 2.0 features like commenting, chat, and embedded catalog search, using all-free resources.

An all-open-source software environment.

A program of technology instruction.

Simple procedures: no bibliographic or technological training necessary for library staff.

A total budget of less than $ 1,500.

Implementation in less than thirty days.

MISSION STATEMENT

The mission of the Ward Town Library is to serve the town of Ward and the surrounding areas as a center for learning, study, entertainment, cultural enrichment, historical preservation, and encouragement of artistic activities. To this end the Ward Library is committed to freedom of inquiry, freedom of access, communitarian spirit, equality of participation, and strict protection of privacy.

All persons are welcome to use the collection of the Ward Library. Books and other materials may be borrowed for any period needed by the borrower, who may be reminded periodically by the library of items borrowed, but may not be compelled to return them. Some items may be designated as non-circulating by the Ward Library Board.

The premises of the Ward Library are available for community activities at no charge, and no reasonable request for their use may be refused. The Ward community, and the service area of the library, shall be considered roughly co-equal with the extent of the Indian Peaks Fire District. The Ward Library Board is also responsible for selecting Ward Artists-in-Residence, who have unrestricted use of the Ward Library Artist's Cabin during the period of their residency.

The Ward Library Board is empowered by the Ward Town Council to make decisions on these and other matters appropriate to the administration of the library. However, in keeping with the direct-democracy principle adhered to in Ward affairs, all decisions may be appealed to the Town Council and ultimately to the voters of Ward. The Town Council furnishes the library with premises, heat and electricity, but the business of the library shall be conducted on a volunteer basis by individuals donating their time for the good of the community.

ASSESSMENT OF NEEDS

Preliminary Information

Ward, Colorado is located at an altitude of 9,450 feet in Boulder County, at the top of Left-Hand Canyon just before it joins Highway 72, and Ward's Zip Code of 80481 extends westward as far as the Continental Divide. The Ward Town Library serves the Town of Ward, with approximately 190 year-round residents;[1] and also the surrounding area, roughly co-extensive with the Indian Peaks Fire District, which covers 210 square miles. The number of people living in this wider community is comparable to the number living in Ward itself, so the service community may be considered as 380 persons. The library was founded in 1974 as a co-operative effort by members of the community, both townspeople and residents of the wider area. It was established with a generous donation of around 900 books from a non-resident who was impressed with the spirit of community in Ward and wished to make a gesture that would benefit the town. Over the

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[1] Ward registered 169 residents at the time of the 2000 decennial census, but the town now claims to have 190 residents.

years small additions have been made to the library collection, most notably of magazines and vinyl LP recordings, donated by townspeople.

The library has operated since 1974 as an informal town book exchange. It was housed for the first two years in a cabin owned by a community member. Then, in 1976, the Town Council donated space for the library in the Town Hall building, which also houses the Post Office and the offices of the Mayor and town Clerk. The Town Council provides funds to for heat and lights in the library, but there is no budget for staff or acquisitions. The library is staffed part-time by volunteers, and administered by an all-volunteer board. The library hosts children's programs, inter-generational poetry readings, and other community events during the long, cold winters. The library also sponsors the "Ward Artist-in-Residence" program, whereby a local artist is provided up to two years' housing in "Dos y Media," a cabin donated to the library more than thirty years ago by a local benefactor, in return for providing artistic contributions to the town. Past recipients of the residency have created stained-glass windows for the church, given violin lessons, and organized poetry readings.

Demographics

In addition to the population figures cited above, U.S. census data from 2000 indicates that median household income in Ward is $33,750, approximately 20% below the national figure of $41,994. However, this income disparity is significantly mitigated by the lower cost of living in such a rural location. There were no residents living below the poverty level in 2000.

The age profile of the population is skewed toward Baby Boomers and Generation X, with significantly higher percentages of the population in the 25–44 and 45–64 categories than the national average.[2] The over-65 age category is particularly under-represented, with only one resident in that age group, while the age groups of 0–15 and 16–24 are not far from the national average.

Ethnically, 98.8% of Ward residents report their race as "White," compared to a national average of only 75%. The most noteworthy demographic data regarding Ward has to do with education levels: the percentage of residents with only a high school education is approximately 20% less than the national average, while the percentage reporting "some college" education is 41% higher, and the percentage reporting a bachelor's degree is fully 149% higher. (No residents reported a Master's, professional, or doctorate degree.)[3] 46 residents, or about 27%, were under 18, a little higher than the national average.[4] Enrollment in the school-aged population is reported at 100%.

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[2] http://www.epodunk.com/cgi-bin/popInfo.php?locIndex=9731, accessed 2010-05-17.
[3] http://www.epodunk.com/cgi-bin/educLevel.php?locIndex=9731, accessed 2010-05-17. These educational data are based on so-called "SF 3" census files, representing a much smaller sampling of population and therefore subject to greater margin of error than "SF 1" files, especially in smaller communities. See http://www.epodunk.com/demographics/footnote.html.
[4] http://factfinder.census.gov/servlet/SAFFFacts?_event=Search&geo_id=86000US80481&_geoContext=01 000US%7C86000US80481&_street=&_county=ward&_cityTown=ward&_state=04000US08&_zip=&_la ng=en&_sse=on&ActiveGeoDiv=geoSelect&_useEV=&pctxt=fph&pgsl=860&_submenuId=factsheet_1&

Manner of Assessing Needs

The town of Ward was a mining boom town in the nineteenth century, but was a virtual ghost town with only one or two residents by the 1940s. Population boomed in the 1960s with an influx of young, counter-culture-oriented residents, and the town was re-incorporated in the 1970s as a "Home-Rule Municipality" under Article XX of the Colorado State constitution. As such, the Boulder Country Sheriff's office has no jurisdiction in Ward – a fact that is said to go a long way toward explaining the character of the people who are attracted to living there. Ward's town charter states that its form of government is "direct democracy," and although Ward has an elected Mayor, Town Clerk, and Town Council, any matter may referred to a town referendum if even a single voting resident so requests at a town meeting. Ward has a well-earned reputation as a counter-cultural bastion of social libertarianism where people treasure their independence and freedom to an extreme degree.

The issue of assessing needs in the library came about when a longtime resident passed away in the summer of 2009, leaving a modest bequest of $1,500 to the library with instructions that it be used for "modernization." Ward is not a town where "modernization" is necessarily considered a good thing: one of the first actions the town took after becoming a home-rule municipality was to remove all the streetlights so as to be able to see the stars better at night. Although there was a general feeling in town that the library needed to be improved in some way, assessment of needs had to be conducted with the most careful attention to eliciting the opinions of all community members and developing the highest possible level of consensus before proceeding. This was necessary in order to minimize the possibility of even a small minority of residents feeling offended or ignored, given the ability, under the town's unique charter, of a small group to delay any official action and cost the town time and money by forcing a special referendum. Fortunately, the small size of the town worked in favor of this very intensive approach to needs assessment. The Library Board was able to hold a series of meetings in the library over the course of late 2009 and early 2010, where opinions and feelings about the library were discussed in depth. 121 residents took part in one or more of these meetings, representing about 63% of the population of the town. We made great efforts to reach every person who had used the library in the last year; and although it was difficult to quantify our success because the library keeps no list of patrons, we are aware of no more than 29 individuals known to be library users who did not attend one of our meetings, indicating a success rate of around 80%. (Several of the people we could not reach are summer residents and were not available for the meetings, which took place over the winter.) We also held meetings in the nearby informal communities of Gold Hill, Bigbee, and Quigley, as these smaller communities are considered to form part of the library's service area.

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ds_name=DEC_2000_SAFF&_ci_nbr=null&qr_name=null&reg=null%3Anull&_keyword=&_industry=, accessed 2010-05-17.

We proposed holding meetings with the residents of Jamestown, a somewhat more populous community nearby without a library (some children from Ward attend the Jamestown Elementary School), but were discouraged from doing so by Ward residents who generally agreed that no Jamestown resident had ever patronized the Ward Library. We were also informed repeatedly that the service area of the Ward Library was considered to be roughly co-extensive with the Indian Peaks Fire Protection District, and that Jamestown was squarely outside of that area, located well inside the borders of the Four-Mile Fire Protection District.

The meetings we held led to the formulation of the Ward Town Library Mission Statement, which can be found at the beginning of this report, and also to the identification of the needs described below, which may be said to represent the consensus view of the community, or at least the 63% that took a strong enough interest in what we were doing to make their voices heard. They are listed in order of priority, as viewed by the community.

Need No. 1: Cataloging and Organization

Since the founding of the Ward Public Library in 1974, the collection has been at the disposal of the community, which has benefitted greatly therefrom. However, no effort was ever made to catalog or organize the collection, beyond arrangement on shelves by broad subject area. As a result it is not easy for library patrons to find a particular item, should they have one in mind, and in fact no master list exists of the titles that are in the library. It was generally decided that, were the means available, the time had come for the books, recordings, and other materials housed in the library collection to be subjected to some system of classification, and for the creation of a catalog that could be made available to patrons.

Need No. 2: Circulation Control and Management

Since its inception, the Ward Public Library has operated on a volunteer honor system. Patrons who wish to borrow a book or other item are free to do so at their convenience, and may bring it back whenever they wish. This system was chosen because it is consistent with the 60s-era communitarian ideology that underlies the town's culture, and it has worked well enough over more than 35 years that the townspeople have no wish to change it. Traditionally, however, no circulation records have been kept, so it impossible to know if a particular book is out on loan to a patron or on the shelf. Attempts have been made to keep track of loans in a notebook, but the notebook has been repeatedly misplaced, some entries were indecipherable or insufficiently precise, and it is not clear that all library patrons used the notebook. Some people objected to writing down titles of items they had borrowed in a notebook that anyone could come into the library and read.

Combined with the lack of systematic arrangement and of a catalog, this has made finding an item in the library a rather hit-or-miss affair. Some library patrons have found themselves in possession of books from the library that they had forgotten about

borrowing some time before, and sometimes even found themselves unsure of whether a particular book in their possession came from the library or from their private collection.

Thus there has developed a felt need for some kind of circulation system that would keep a record of loans, albeit one that would preserve the freedom of borrowing that already exists. Such a system should also indicate to patrons if a particular item is out on loan, while preserving the anonymity of the borrower (to all but library staff, at least).

Need No. 3: Technology Education and Information Literacy

Elementary students from Ward attend schools in nearby Jamestown or Gold Hill, or are bussed down Highway 72 to Nederland. Older students from Ward attend Nederland Jr./Sr. High School. Students at these schools do receive instruction in basic computer skills, but generally do not have enough time to develop a high degree of proficiency with computers and are unable to use school computer labs after school hours. Although there are a number of people living in Ward who work professionally in the technology field, the town's ethos revolves around outdoor activities and sometimes anachronistic lifestyles, and there has been no public space in the town where children and adults can access technology with skilled guidance and assistance. The library is the only institution in Ward that is in a position to fill this gap. There is a strong need for the library to offer instruction and simple practice in basic technology skills and competencies, especially to children and teens, so that they will not be at a huge disadvantage when they go to college or embark upon careers.

Need No. 4: De-Isolation and Community Internet Access

The Ward Public Library has existed since its establishment in 1974 as an isolated institution, reflecting the relative physical and cultural isolation of the town itself. While the library has served the community to the best of its moderate ability, its service has not evolved as the world outside has moved into the information era. The library is not working to connect the community to the outside world, and neither is it connecting itself to the broader library and information community.

In many communities it would go without saying that such a situation is unsatisfactory, but in Ward this view proved to be controversial. To understand life in Ward, it cannot be emphasized too much that many residents moved here from the outside specifically to find a refuge from what they experienced as an oppressive general cultural environment. Although most residents recognize the need for greater connection to the outside world, especially through Internet access, a vocal minority of residents expressed strong feelings that such a move would be the downfall of Ward, bringing the town into unacceptably close contact with the culture they had come there to escape.

While some homes have internet access, the percentage is probably significantly lower than in large urban areas, and other residents either are not interested or view the Internet with active suspicion and alarm. The idea of introducing Internet access into the public space of the library thus occasioned the most vigorous debate we saw in the course of the

needs assessment process. Interestingly, this level of controversy did not attend discussions of computer literacy and skill training for children and teens; it was not computers *per se* but public and officially sanctioned Internet access that sparked unease.

Those in favor were in the majority from the beginning, but those opposed were numerous enough to put the idea in serious doubt. There was also a degree of generational split between the opposing camps: not a single person under thirty-five was opposed as far as we could tell, while those forty-five or older were about evenly divided. In the end, the issue was resolved in favor of Internet access, for two set of reasons.

First, there are a significant number of businesses in the town that benefit from Web presence. These include Ann Gillis' Indian Peaks Gallery, Carol Jenkins' Oils-On-Line Gallery, Lifescapes LLC online gallery, Marrocco's Italian Restaurant, Gold Lake Resort and Spa, Solutions for Occupational Safety, and Stone Roses Tile Company.[5] Anecdotal reports indicate that "many other businesses operate online."[6] The proprietors of these businesses are respected in the town, and when they put forth reasoned, unemotional arguments linking Internet commerce to the continued economic viability of the town, given its isolated location, they had a noticeable effect on the debate. Two of these business owners were committed enough to the idea that they proposed to teach classes in Internet commerce for free, should access be made available at the Library. This caused several people to begin to see the Internet as a potential asset to the town, rather than a threat.

Second, there was another small minority in the town who felt that the money left to the library should be spent on new acquisitions, the collection being decidedly dated. The Library Board was sympathetic to this view, but we had been advised that collection development activities could not reasonably be considered "modernization" of the library, and thus could not be undertaken with the bequest the library had received. We made several presentations, however, on free e-resources to which the library could have access with an internet connection, including the Hathi Trust, the Gutenberg Project, audiobooksforfree.com, and the directory of Open Access Journals, among others. Demonstrating that we could leverage internet access to make available a vast number of free resources won over a significant number, and also had the effect of moderating the resistance of many continued opponents of Internet access, who may never have considered it as a means to access materials in keeping with the library's more traditional mission.

After many debates and a process of patron education that profoundly affected the way many people viewed the role the library could play in the community, a more-or-less consensus view was reached in favor of updating the library's mission to include Internet access.

ASSESSMENT OF EXISTING TECHNOLOGY AND RELATED SERVICES

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[5] http://sites.google.com/site/wardcolorado/home, accessed 2010-05-17.
[6] http://sites.google.com/site/wardcolorado/wardgovernment%2Chistoricproperties, accessed 2010-05-17.

The Ward Town Library occupies a space in the Ward Town Hall, on the opposite side of the building from the Post Office. It occupies about 600 square feet, including a loft accessed by a hand-carved wooden spiral staircase.

Assessment of existing technology in the library shows that there are no computers, no computer networks, no photocopier, not even a telephone. There is an old electric typewriter but it is not clear that it was ever used in the administration of the library; most likely it was placed in the library many years ago for the use of town residents who needed to type letters or other documents, after having been retired from some previous function. It still works.

The other piece of technological equipment in the library is a stereo phonograph for playing vinyl LPs, of which the library has more than 100. This phonograph is in good working order, but is rarely used, mostly because it is inconveniently situated in the far corner away from the door, past several boxes of old National Geographic magazines. It is furnished with loudspeakers for group listening, as well as headphones for private listening.

The library is furnished with electric lamps and light fixtures enough for reading comfortably, but not to the extent of brightly illuminating every corner of the library. There are a large desk and wooden office chair for the use of the library staff, five comfortable reading chairs for patrons, and a number of wooden benches.

PROPOSED TECHNOLOGY IMPLEMENTATION

The needs of the library are many, and the resources available are few. However the library itself is small, as is the community it serves, and the Library Board is confident we can meet the needs expressed with the resources available.

Library System

We decided early on to adopt a computerized catalog and circulation system to address the first two need areas. We ruled out proprietary systems immediately as too expensive, leaving us the options of open-source systems or online functionality. We examined five open-source systems: Koha, Evergreen, Alexandria, GCstar, and Tellico. Koha and Evergreen are full-featured Library ILS, scalable for libraries of any size. We eliminated Evergreen first because it was clear that it would require expert assistance either under contract from a vendor or from a highly-skilled volunteer, and also because it ran on the proprietary Windows platform. In keeping with the non-corporate values of the Ward community, we desired to maintain an all-open-source environment if at all possible. We also expected this approach to assuage some of the lingering discontent on the part of a few people about the computerization of the library. We examined Koha more carefully, with the idea of using it in an Ubuntu Linux operating environment, and as part of our research we corresponded with the developers in New Zealand and a county library district in rural Vermont (Green Mountain Library Consortium) that had implemented it successfully on their own, in order to try to determine its suitability for our use. Both

parties were encouraging, and we ultimately decided that implementation of Koha was possible in our environment, but we would still need skilled assistance to carry it off. There was one skilled volunteer available who was willing to get the system installed and operating, but we decided such a scenario was less than fully sustainable in the long-term because we would probably remain dependent on this individual to maintain the system, and were he to move away or become too busy to volunteer his services, we could not be confident of our ability to keep it operating on our own. Another consideration was that, although this individual was fluent in Linux and PERL, he had no background in library operations and we foresaw a long and difficult process of negotiation and mutual education before we would be able to configure the system with the functionality we desired.

We next considered Alexandria Book Collection Manager,[7] an open-source system designed to run in Linux using the GNOME desktop. It seemed to present many of the same issues as Koha, but to have less documentation available. We were not able to find an example of an institution that had successfully implemented Alexandria to manage a public collection.

We evaluated at GCstar[8] and Tellico,[9] two more open-source collection managers, but rejected them because they did not contain circulation functionality.

Turning to online alternatives, we first looked into OCLC's plan to offer ILS functionality as a web-based service.[10] OCLC services are available only by paid subscription, but we hoped that the small size of our library and service area would make it possible to come to an agreement with OCLC on favorable terms. However we found that the system is not yet functional, and OCLC could not give us a firm time-frame for roll-out, leading us to conclude that it was impractical to plan on using this alternative. We also felt that our staffing limitations and lack of technical background made unwise for us to be among the first adopters of a radically new system.

The alternative we settled on was to use the free online service, LibraryThing.[11] This is a Web-based book cataloging platform with tagging, blogging, and other social networking services built in. It operates very simply inside a Web browser widow, and all modern Web browsers are supported. Institutional memberships are allowed for collections up to 5,000 books,[12] and this limit can be extended to 10,000 books with permission. Our research indicates that permission is not difficult for a non-profit community organization like the Ward Library to receive, but in any case the size of our collection has remained fairly stable at around 1,000 items since the mid-1970s, and is already large in relation to the size of the community it serves. We do not anticipate any scenario that would see it grow beyond the proportions supported by LibraryThing.

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[7] http://alexandria.rubyforge.org/index.html, accessed 2010-05-17.
[8] http://www.gcstar.org/, accessed 2010-05-17.
[9] http://tellico-project.org/, accessed 2010-05-17.
[10] http://www.oclc.org/us/en/news/releases/200927.htm, accessed 2010-05-17.
[11] http://www.librarything.com/, accessed 2010-05-17.
[12] LibraryThing is free up to 200 books, and up to 5,000 books with a $25 "lifetime" membership.

Three possible downsides to using LibraryThing are, first: Because it is an online service, it is subject to the possibility of modification of policies in the future that would make it less useful for us, or even of termination of service. However, it is likely that LibraryThing will remain in operation for the foreseeable future, given its present popularity, and unlikely that terms of service will be restricted. If anything, it is likely that terms will be expanded as new services become available, and the cost of bandwidth and storage trend downward. Also, experience indicates that if LibraryThing should terminate its service in the future, users are likely to be offered the option of migrating their collections to another service. Second: LibraryThing is essentially a collection manager, not an ILS. The Ward Library, however, does not need all of the functionality of a full ILS, such as acquisition modules, serials management modules, ILL modules, and the rest. The main technical limitation of LibraryThing for our purposes is in the lack of circulation functionality, but we found it was easy to create a simple work-around for this, as will be described below. Third: Using an online platform means that Ward library gives up final control over our system data. Especially, it means that power or internet service outages (not uncommon at high-altitude mountain locations like ours, subject to frequent severe weather) can leave us without access to our data. We can, however, export our data from our LibraryThing account to a local file, and a regular schedule of routine data exports will serve to backup data in a form that can be accessed locally in the inevitable event that the library goes off-line.

Software

Our meetings with the community resulted in a strong consensus that the computerization of the Ward Library should take place within an all-open-source environment to the greatest extent possible. Many town residents expressed reluctance that computerization should serve to promote in even the slightest way the interests of the international corporate establishment or, as residents colloquially expressed it, "The Man." Cost was another factor, of course.

This is why we decided almost from the beginning to implement Ubuntu Linux 10.04 LTS "Lucid Lynx" as the operating system for library computers. This free OS distribution from Canonical Corporation comes with open-source office productivity, Web-browsing, and multimedia software built in. It is considered by industry experts to be more secure than the Windows OS produced by Microsoft Corporation, primarily because of the large open-source community actively involved in its continuous improvement.[13] It receives regular security and performance updates from Canonical, and a large corpus of free open-source software exists for users with specialty needs such as high-end image-editing. (Proprietary software for the platform is also available.) Most software is available through online "repositories" automatically accessed by a system feature called "Synaptic Package Manager," and software download and installation are fully automated. Efforts are also underway within the Koha development community to "package" Koha for Ubuntu, so that it could become available in a more user-friendly

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[13] http://davestechsupport.com/faq/is_ubuntu_more_stable.html, accessed 2010-05-19.

installation format than now exists – preserving the library's flexibility to move to a locally-hosted full ILS system in the future.

At this time the library board anticipates that all the library's needs will be met by standard software packages for "Lucid Lynx," including OpenOffice, Firefox, VLC Player, and Gimp image editor. If other software is necessary, it will be downloaded and installed from free Ubuntu repositories. Canonical Corporation provides commercial support and customization for Ubuntu, but in our experience no commercial support should be necessary for this exceptionally stable and user-friendly system.

Note below that the desktop workstations identified for purchase come equipped with a licensed version of the Microsoft Windows XP operating system. We will preserve this operating system on these computers, but configure them to dual-boot into either Windows or Ubuntu, using the Ubuntu configuration by preference. The Windows configuration will be used along with Ubuntu for training purposes in computer application classes in the library, since Windows is overwhelmingly prevalent in both academic and work settings, and young people learning computer skills need to be fluent in its conventions and use. Technology education and information literacy was number 3 among the needs identified in the course of the needs assessment, and skills taught must be geared toward what will be needed in real-world situations. However, students will learn open-source alternatives to all proprietary systems and platforms, and will enter the workforce and the academic world with a better-developed awareness of the possibilities of open-source software than the majority of their peers.

Hardware and Supplies

The choices made by the Library Board for computer software and library system consist of all-free resources, which left the full amount of our $1,500 budget available for hardware, supplies, and/or services. To stretch these modest resources as far as possible, we evaluated equipment investment with value-for-price uppermost in mind. Following are the specific purchases to be made, each with its budget implication.

We will install 4 desktop workstations in the library. The hardware choices are low-specification for budgetary reasons, but they are capable of running our specified software efficiently. Workstations will use wireless networking to connect to the Internet, allowing the library to avoid complicated and expensive cabling. Each workstation will consist of the following:

> One off-lease IBM NetVista 8305 Desktop Computer
> Intel Pentium 4 CPU (1.8GHz)
> 512MB of RAM
> 20GB Hard Drive
> DVD-ROM Drive
> Includes Keyboard and Mouse
> Windows XP Pro $ 129.97 from TigerDirect.com (x 4 = $ 519.88)

One new Acer X163WB 15.6" Widescreen LCD Monitor:
1366 x 768 Resolution
500:1 contrast ratio
8ms response time
VGA $ 79.00 from Target.com (x 4 = $ 316.00)

One Netgear WG111 USB Wireless Adapter (Linux driver available[14])
54Mbps
802.11g
USB 2.0
Recertified $ 9.99 from TigerDirect.com (x 4 = $ 39.96)

                                        Total cost: $ 875.84

These desktop workstations will be supplemented by one "netbook"-type laptop computer, to be kept fully-charged and used by staff in the event of power failures to access locally-backed-up catalog and circulation data:

One ASUS EEEPC 1000HD-BKBB1 "NetBook" Computer
10.1" Dislpay
120GB Hard Drive
1 GB RAM
Windows XP $ 188.00 on eBay.com

We will purchase one all-purpose inkjet-type printer, which will be used to print call-number labels during the cataloging process, as well as any correspondence, reports, or other printing the library may require. It will be used to scan images of book covers to upload to our LibraryThing account, and for any other scanning needs, including if we are asked to scan a document to supply to another library. The printer will also serve for patron use; however it will not be networked to the patron workstations but only accessible from the staff workstation. Patrons will have to save documents onto removable media such as a flash memory drive and then transfer them to the staff workstation in order to print. A 1GB flash memory drive has already been donated to the library by the mayor for this purpose. The scanner and copier will also be at the service of the community; terms of use will be worked out by the Library Board.

One HP Photosmart C4680 All-in-one Printer/Scanner/Copier
29 ppm Black / 23 ppm Color
1200 dpi scanner $ 59.99 from Amazon.com

The library will purchase two 6-outlet, surge-suppressed power strips: one for a bank of three patron workstations, and one for the single staff workstation:

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[14] http://wireless.kernel.org/en/users/Devices/USB, accessed 2010-05-19.

Cables To Go 2706X, 6-Outlet Surge Suppressor (270 Joules)

$ 6.99 from TigerDirect.com (x 2 = 13.98)

For cataloging and circulation we will purchase a barcode scanner and 2,000 pre-printed barcodes:

CueCat USB Barcode Scanner

$ 15.00 from Librarything.com

Pre-printed, sequentially-numbered paper barcode labels, 1.25" x 0.62"

$ 48.00 / 1M from weprintbarcodes.com
(x 2 = 96.00)

Call number labels will be printed on all-purpose paper and attached with 3M book tape, which remains clear, pliable and adhesive for decades:

1-1/2" Book Tape, 3M 845112, 150' roll

$ 4.79 from USA Business Products
(x 10 = 47.90)

HammerMill Copy Plus Plain paper, 500 sheets

$ 7.49 from USA Business Products

Internet service will be shared with the Town Hall office, located in the same building with the library. The library's network will be based on a wireless repeater networked with the Town Hall office's router.

Netgear WNR3500 RangeMax Wireless N Router (Recertified)
Configurable as wireless repeater
IEEE 802.11b/g/n
300 Mbps wifi
Firewall with domain blocking, URL filtering

$ 39.99 from TigerDirect.com

Hardware and Supplies Investment Budget for Implementation of Technology Plan

Quantity	Item	Unit Price	Total Price
4	IBM Desktop Computers	129.97	519.88
4	Acer LCD Computer Monitors	79.00	316.00
1	Netgear Wireless Router/Repeater	39.99	39.99

4	USB Wireless Adapters	9.99	39.96
1	Asus Netbook Computer	188.00	188.00
1	HP Inkjet Printer/Scanner/Copier	59.99	59.99
2	6-Outlet Surge Suppressor	6.99	13.98
1	CueCat Barcode Scanner	15.00	15.00
2	Barcode Labels (1M)	48.00	96.00
10	1-1/2" Book Tape	4.79	47.90
1	500 Sheets Plain Paper	7.49	7.49
1	"Lifetime" Membership in LibraryThing	25.00	25.00
		Total	1,369.19

Internet Service

The Ward Library will share internet service with the office of the Town Clerk and with the Post Office, both of which are situated in the same building. See below for arrangements related to the ongoing cost of internet service. The network cabling and wireless router will be installed in the Town Clerk's office, and the extension of the network into the library will be by means of a wireless repeater located close enough to the Town Clerk's router to pick up its signal reliably, but positioned so as to provide a good signal everywhere in the library. The combined coverage of the Town Clerk's router and the library's repeater will also cover most of the Post Office also located in the same building, but the Post Office may choose to acquire its own wireless repeater if desired.

Library Web Portal

The Ward Library will be furnished with a Web portal using 100% free online tools and services. The catalog is hosted by LibraryThing as already described. The Library Website will be produced as a free weblog on blogger.com. This website will provide information about the library, its services and schedules, in a form that can be easily updated as needed. The site will contain an embedded search box for our LibraryThing account, as well as links to a browsing page, and mobile (low bandwidth) browsing and search pages.

Our site will also contain an embedded online chat window in the form of a "MeeboMe widget," by means of which any person may contact the library staff online for reference or informational questions, or for any other reason. We will include links on our main page to other pages for children's programs, computer education programs, "Friends of the Library," the Artist-in-Residence program, and other library topics as they arise. We will also link to an external page on Ward Town Government information, which will be maintained by the Town Clerk on behalf of the Town Council. Other external pages we may link to include local businesses, a site with the local weather forecast, and pages on the history of the town of Ward.

An important feature of our website is that it represents not just a one-way dissemination of information to the community, but a real opportunity for two-way conversation between the library and the rest of the community. To this end we have installed the chat window already described, and we will also enable public commenting on our website (which comes pre-installed because it is built on a blog platform). Comments will be visible publicly, and comment posters will be able to respond to each other, or share information of their own. We hope to make the Ward Library Website the central pillar of online community in Ward. A demonstration model of the Ward Library website is online and may be inspected at http://wardlibrary.blogspot.com/.

TECHNOLOGY POLICIES AND PROCEDURES

Many library policies and procedures, both technology-related and otherwise, remain to be determined by the Library Board. Some will be subject to revision from time to time. A few, however, are important enough to successful implementation of this plan that they deserve to be mentioned herein.

Circulation Management

As mentioned earlier, LibraryThing has no inbuilt circulation functionality. However, we have experimented and found that it is easy to exploit the features that it does have in a way that will provide the circulation functionality that Ward Library requires.

A LibraryThing account record has a number of data fields that will display publicly if populated, including "comments," and one data field that will not display publicly even when populated: "private comments." The "private comments" field will display only when a user is logged in to the account. This is the feature we will exploit to manage circulation.

When an item is added to our catalog, a barcode label will be attached to the book and the barcode number will be added to the "comments" field for that item. Later, when a patron wishes to check out the same item, an optical scanner will be used to scan the barcode into the search field on the catalog browse page, a staff member having first logged in to the account. This will locate the item, and the staff member will then click the "edit" icon to open the editing view for the item. The staff member will type the legend "(checked out)" *before* the title in the "title" field for the item, then scroll down the page and type the date in YYYY-MM-DD format (ISO 8601), followed by the borrower's name, in the "private comments" field. The staff member then clicks on the "save" icon at the top or the bottom of the page, and the procedure is finished.

The check-in procedure is the reverse of the check-out procedure. The staff member opens the record for editing, removes the legend "(checked out)" from before the title in the "title" field, and removes the name of the borrower and the date of the loan from the "private comments" field. The record is saved, and all evidence of the loan is erased. (The Library Board discussed the possibility of a check-in procedure that would preserve

a record of the loan, but this was considered unnecessary and undesirable complicated, as well as questionable from a privacy perspective.)

This allows the following: 1. A patron browsing or searching the catalog will be able to tell that a book is checked out, but will not know who checked it out or when. 2. When sorted by title, all checked-out items will sort together in a separate category. 3. A staff member logged in to the account can tell who checked out a book and when, and even search for all the items checked out by a particular borrower. 4. When the catalog is exported as a tab-delimited file and opened in a spreadsheet editor, it can be sorted by the "private comments" field, so that staff can identify all items that are on loan and who borrowed them, and they will be sorted by the date borrowed.

Ward Library has always been open to the community as much as possible, whether or not a volunteer staffer is available to be on the premises. We wish to continue this policy. Therefore staffers, when available, will process circulation transactions immediately; but if no staffer is available, paper slips will be provided to patrons to temporarily record the barcode numbers of books they borrow, along with their name. A secure box will be provided in which to deposit these slips, in the interest of privacy, and the transaction will be transcribed online by the next staffer available (who will then destroy the paper slip).

It has always been the policy of Ward Library that patrons are themselves responsible for returning items when they are ready to do so. Therefore the library will make no effort to compel borrowers to return items long overdue – in fact the concept of overdue will have no place since there will be no due date to begin with. We will however remind borrowers periodically of items they have checked out.

Catalog Management

At present there is no catalog of any kind for the Ward Library. As soon as our technology infrastructure is in place we will begin cataloging items. The time it will take will depend on the number of volunteer staff available, and their efficiency. While the catalog is being created, the Ward Library will continue to function as before, except that those items already cataloged will be processed according to our new system.

Each item cataloged will be entered by title into our LibraryThing account's "add books" page. ISBN scanning may be used for items with ISBN. We will import bibliographic information from Library of Congress by preference, but use as many of the other 691 sources available as necessary; if no exact match is found we will use the closest match available. If no approximate match is found we will put the item aside for manual processing at a later date, but we expect this to be necessary for only a small number of items. Shelf arrangement will be by Dewey Decimal Classification, using DDC numbers obtained through LibraryThing. Shelf number tags will be printed in the library on plain, multipurpose paper, and applied with 3M book tape. Packing tape and desk-type adhesive tape are not to be used under any circumstances, since they lose both adhesion and transparency in a short time. Finally every item cataloged will have an adhesive barcode label applied, and this barcode will be scanned into the "comments" field of the item's

record, allowing the record to be instantly and accurately retrieved whenever the item is presented.

At nearly 10,000 feet on the edge of the Front Range, the area around Ward is subject to frequent severe weather that can cause power outages and Internet service interruptions, in the summer as well as the winter. Therefore the Ward library will follow a rigorous policy of frequent and regular local backup of data exported from our online catalog, so as to continue to operate when the catalog is not available. At the beginning and at the end of each day of operation, data will be exported as a tab-delimited text file to stable media stored locally (a USB flash drive). Note that LibraryThing also supports export of data as a comma-separated values file, but we have determined that export as a CSV does not preserve the "private comments" field, while export as tab-delimited text does. In addition, any staff member on duty is urged to keep an eye on the weather conditions and to use his or her discretion to perform an unscheduled data export and backup at the approach of possibly severe weather.

In the event that internet service is actually interrupted, data preserved from the most recent backup can be consulted locally to search or browse items in the library, or by staff to obtain circulation data. In the event that electric power service is interrupted, the library will have recourse to the battery-powered netbook computer furnished for exactly such an eventuality. During such interruptions, circulation transactions will be recorded on paper slips and later entered into the online catalog when it is possible to do so.

Provisions for Ongoing Costs Related to Technology Plan

Although the budget in this plan foresees only capital expenditures, certain recurring costs are implied in its outlines. First, consumable supplies – paper and inkjet cartridges – will be required for the operation of the printer/copier/scanner. It will be necessary for library staff to exercise strict restraint in use of this equipment, especially in its photocopying function, which generally incurs a much higher cost per copy than a conventional photocopier. The unit will be made available to the public, but patrons will have to be assessed an appropriate charge per copy, or per printed sheet, that will allow the library to recover enough funds to replace consumable supplies as needed. The Library Board will set this charge after studying the printer/copiers operational costs. Inkjet cartridges will be replaced only when necessary; funds will be conserved to the extent possible by having empty cartridges refilled locally.

Internet service to the library will result in a situation the library has never known since its establishment in 1974 – a financial obligation to meet a recurring expense. Discussions on this issue have taken place over the course of several weeks with the Town Clerk's office, and have involved on several occasions the involvement of the Post Office, both of which institutions share the same building with the library. The Town Clerk has recognized the desirability of having access to the Internet in his office, so as to be able to send and receive email, consult the Web for information, and perform other official tasks more efficiently. The Post Office has also expressed a wish to have access

to the Internet for similar reasons, and also so as to be able to process credit card transactions.

As a result of these discussions, an agreement has been reached between the library, the Town Clerk, and the Post Office. The Town Clerk will contract with Qwest Communications for a low-end 7mbps residential service with wireless router at $35/month for the first twelve months and $59.99/month thereafter. The library will access the wireless signal from the Town Clerk's office and extend it throughout the library by means of a wireless repeater, and the Post Office will either be able to access both networks adequately from its own premises, or else use another wireless router to boost the signal for its own use.

All three parties will divide the cost of service equally, so the library will assessed $11.67/month for the first year and $20/month thereafter, as well as $6.67 representing one-third of the $19.99 activation fee. This three-way division of a relatively low-bandwidth connection severely limits high-capacity use such as streaming video or MMORP gaming, but the solution was designed for economic sustainability in a very small community with limited resources, and will still be adequate for standard uses like communication and information-related applications, and for all of the library's online needs.

The library has no standing source of income, so the present plan involves the organization of a new group tentatively called "Friends of the Ward Town Library," which will be charged with raising funds to meet the ongoing costs of operation under the new technology plan. FWTL will undertake fund-raising projects at the annual Fourth-of-July celebration in Ward, and at the winter carnival known as "Frozen Dead Guy Days" sponsored by the chamber of commerce in nearby Nederland. We have also already initiated a program called "Adopt-a-Month," where local residents are recognized for contributing a sum equal to the library's share of internet access fees for one month. The Mayor, the Town Clerk, the Postmistress, and all three members of the Library Board have already committed to funding one month per year, and we are confident that other community members will come forward to help defray internet connection costs in the near future. Ward is not an affluent community, but neither is it poor, and it is known for its community spirit.

Online Resources

Ward Library will link to high-quality online resources from our Web portal. In addition, Boulder Public Library allows users to create a temporary two-week account that allows them to access subscription databases from vendors like Ebsco or Gale remotely. Using these temporary accounts, Ward Library users can access subscription resources the Ward Library does not have the means itself to offer.

EVALUATION

Evaluation of this Library Technology Plan and its implementation will be ongoing and will be based on assessing the degree to which it meets the four needs identified in the needs assessment above, as expressed in the following set of goals and objectives.

We will conduct a series of meetings similar to the meetings we held in the needs assessment phase, but probably scaled down somewhat. We will prepare a written evaluation report every three months for the first year after initial implementation, and every six months thereafter.

Goal One: Cataloging and Organization

Objective 1: Catalog should be easy for patrons to use.
Objective 2: Catalog should contain enough information to be useful in helping patrons to evaluate items before going to the shelf.
Objective 3: Catalog records should be easy for staff to create.
Objective 4: Catalog data should be easy to export and manipulate off-line.
Objective 5: Web presence of catalog should enhance patron usability.
Objective 6: Links on library portal should lead to significant use of quality free on-line resources
Objective 7: Library Web portal should elicit community response in the form of comments, email, and chat messages.
Objective 8: Arrangement of items by DDC should make them easier for patrons and staff to locate and access.

Goal Two: Circulation Control and Management

Objective 1: Circulation information should be accurately and reliably recorded in system.
Objective 2: Circulation information should be kept confidential as regards borrowers' names, accessible only to staff.
Objective 3: Circulation procedures should be easy for staff to perform with a high percentage of accuracy.
Objective 4: Circulation procedures should be simple enough to be performed quickly.
Objective 5: Circulation system should not be experienced by patrons as any compromise of their traditional freedom to borrow from the library.
Objective 6: Circulation system should provide Library Board with useful data about books on loan.

Goal Three: Technology Education and Information Literacy

Objective 1: Computer instruction will be provided regularly, on a schedule that is convenient for community members.
Objective 2: Community members will come forward to provide computer instruction.

Objective 3: Computer instruction will be available in office productivity applications, Internet applications, and e-business platforms and practices, image editing applications, and sound recording and editing applications.

Objective 4: Instruction will be available specifically for students, in effective Internet research.

Objective 5: Students in high school and leaving to pursue higher education will have a well-developed set of technology skills at their disposal.

Objective 6: Students in high school and leaving to pursue higher education will have a well-developed understanding of the possibilities of open-source software, and of the outlines of the open-source software movement.

Goal Four: De-Isolation and Community Internet Access

Objective 1: Internet service will be reliable and of high enough quality to satisfy the needs of the library.

Objective 2: Internet service will be used regularly by community members.

Objective 3: Demand for community Internet access will not so far outstrip capacity as to cause friction between patrons.

Objective 4: Community Internet access will have a beneficial effect on the education of youth in Ward.

Objective 5: Library patrons will treat computer hardware respectfully and refrain from damaging equipment either accidentally or intentionally.

Objective 6: Computer equipment will function long enough to allow the library time to accumulate the resources for its eventual replacement.

Objective 5: Community Internet access will enhance the quality of life in the community and be regarded by the community as a benefit to all.

ACTIONABLE TASKS AND TIMELINE FOR IMPLEMENTATION

Although this document describes the Ward Town Library Technology Implementation Plan in considerably granular detail, it is extremely simple in its broad outlines and can be implemented quickly. Based on an estimated two week response by Qwest and a three-week delivery time for hardware and supply orders, we can implement the first phase of the plan in less than thirty days. The second phase consists of the ongoing cataloging of the collection and use of the new system, and this will be open-ended.

Day 1:

Town Clerk contacts Qwest communications to order stand-alone Internet service.

Library Board Technology Coordinator contacts vendors to order computer hardware and supplies.

Day 14:

Qwest Internet service with wireless network installed in Town Clerk's office.

Day 15:

Technology coordinator downloads and burns Ubuntu installation disc using Town Clerk's system.

Day 21:

Library hardware and supplies all on hand. Hardware unboxed and set up in library.

Day 22:

Operating system installed and configured on library computers.

Day 23:

Wireless repeater configured.

Wireless network adapters installed on desktop workstations

Wireless network configured on all computers

Printer installed and configured

Day 24:

LibraryThing account opened

Gmail account opened

Blogspot account opened

Meebo account opened

Day 25:

Web portal configured on Blogspot Weblog

First items added to catalog for demonstration purposes.

Day 26:

Rollout party!

FUTURE GOALS

The Library Board and volunteer staff will have their hands full trying to get the library collection cataloged in anything approaching a timely manner, so for the near-term future we will focus on the fullest possible utilization and sustainability of the infrastructure and systems that will be put in place by this plan.

When the time comes that we have organized the library collection to the degree that our plan may be considered a success, the next step in the evolution of the Ward Library will be to establish formal relationships with other libraries, locally or regionally. The most realistic scenario we can envision is an agreement with Boulder Public Library that would allow Ward Library either to issue borrower cards for BPL, or to certify borrower card applications and forward them on to BPL. (At the present time BPL issues borrower cards to anyone with a Colorado mailing address, but requires applicants to appear in person.) This will allow Ward Library users not only to access the resources of BPL, but more importantly, to access the resources of the Prospector consortium through their BPL accounts. Ward Library does not have and will never have the kind of technical infrastructure that would allow it to be a member of Prospector itself.