
Palo Alto City Library

Technology Plan

2009 – 2013

Lucien Kress
Kress Consulting
Portland, OR
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Executive Summary

Palo Alto City Library contracted Kress Consulting in October 2008 to manage a technology planning process that would include a review of current technology, interviews and workshops with a broad spectrum of stakeholders, surveys of staff and customers, and creation of a technology plan.

The process followed Diane Mayo's *Technology for Results* approach, with modifications to fit the needs of the Library. Stakeholders included Library management and staff, City IT management and staff, the Library Advisory Commission, the Library Citizens Technology Advisory Group, and a number of citizens.

The consultant produced a technology assessment and a web audit, which are included as appendices to the technology plan.

The technology assessment found that Palo Alto City Library has stable technology infrastructure and support, with specific opportunities for improvement. The Library provides technology-supported services that are in the mainstream of what American libraries currently offer, and the Library is well positioned to implement and support innovative new services.

The web audit found that the Library's website has significant constraints that need to be overcome in order to provide next-generation catalog services and to offer other online services to customers.

The planning committee used the *Library Service Model Analysis and Recommendations* (LSMAR) report (2006) and the *Audit of Library Operations* (2007) as a starting point for the planning process. Projects were selected to fulfill one or more priorities, as identified in these documents.

1. The project addresses a current need identified by Library stakeholders.
2. The project prepares the Library to meet an anticipated need, reflected by current technology and/or Library use trends.
3. The project promises to increase efficiency and allow Library staff to focus on high-value public services.
4. The project provides a means by which the Library can support City and community initiatives.
5. The project receives passionate support from Library customers and/or staff.

The technology plan includes 11 major projects that the Library will implement over the next five years, subject to staffing and budgetary resources. The major projects are shown below, with approximate cost and perceived benefit to the Library.

Project	Cost	Benefit
RFID and Automated Materials Handling	High	High
Integrated Library System Upgrade/Migration	High	High
Next-Generation Catalog Applications	Medium	High
Online Library Branch	Medium	High
Community Meeting Room Technologies	Medium	High
DVD Security System	Medium	Low
Multiple-Format Download Stations	Medium	Medium
Microform Digitization	Medium	Medium
Website Enhancement	Low	High
Podcasts / Videocasts	Low	Medium
Customer Tutorials	Low	Medium

Although not listed in the chart above, the plan also includes several administrative and support services projects and recommendations for the expansion of existing projects.

Introduction

Scope

This technology plan is essentially a three-year plan, with additional sections related to projects in the fourth and fifth years. The reason for the extension of scope is that Palo Alto City Library has several major projects scheduled in the five-year timeframe, and it is important to address the technology ramifications of those projects in this plan.

The Library is embarking on a facilities upgrade this year, which will encompass four of its five branches and extend into 2013. This plan addresses technology improvements that need to be considered in the process of designing and building those facilities.

In addition, the Library will begin to actively investigate a new integrated library system just as a three-year plan would be ending. It is appropriate to address the details of that project, which is expected to extend into the fifth year.

Of course, with the ongoing acceleration of technological change, it is difficult to plan technology five years in advance with any confidence. This plan, like any technology plan, should be reviewed on an annual basis, and it should be significantly updated around December 2011, in order to remain relevant in the face of rapid technology change.

Mission and Vision

The Library's mission is:

To enable people to explore library resources in order to enrich their lives with knowledge, information, and enjoyment.

The *Library Service Model Analysis and Recommendations* (LSMAR), published by the Library Advisory Commission on December 4, 2006, articulates the following vision for Palo Alto City Library:

The Palo Alto City Library is one of Palo Alto's essential community institutions. It provides a distinctive place where all residents have the right and the opportunity to query, congregate, research, dream and self-educate without question of personal motive, race, age, gender or physical challenge. The following recommendations will help forge a path toward the creation of Palo Alto's "library of tomorrow", an institution that will:

- boldly address community needs through the provision of collection and services that meet leading edge standards for content, access and connectivity;
- efficiently and effectively serve all ages and support life-long learning with a well supported staff, expanded partnerships, and a vibrant volunteer program;

- provide safe and inviting facilities with flexible spaces that accommodate growth and include areas for quiet study and reflection, small and large group meetings, and delivery of neighborhood programs and services.

The LSMAR further identifies a number of fundamental priorities:

- Branches are important. We are starting with the existing five locations and defining what needs to be done to each one to build the best overall Library.
- Collections need to be bigger, better and more current. Collections go beyond books and media.
- Hours need to be increased and more uniform across branches.
- The Library needs more space for expanded collections and different library uses.
- The Library needs a staffing plan that will meet changing needs and demographics.
- Successful youth program areas and services will require a stronger partnership with the schools.
- Palo Altans want seamless access to other libraries' collections with their Palo Alto Library cards.
- The Library must be able to scale-in appropriate technology.
- People value the library as a place, so all facilities need to be renovated. At Mitchell Park, cosmetic improvements will not be sufficient. Only a substantial expansion and upgrade will provide the required space for enhanced services.
- Flexibility in all areas (such as staffing, collections, physical space and technology) is important to meet future program and service innovations.

While not all of these priorities are visibly represented in this technology plan, they did form a basis for evaluating and selecting projects.

Environmental Context

Palo Alto City Library serves a core population of approximately 63,400 through five branches, in addition to customers from nearby cities. The Library has about 54,000 card holders, and circulation of about 1.5 million on a collection of about 275,000 items.

The Library Director reports to the City Manager. The seven-member Library Advisory Commission is appointed by and advisory to the City Council. In addition, there are several citizen groups, including the Library's Citizens Technology Advisory Group, that advised this planning process.

The Library receives technology support from the City Information Technology (IT) Division, which serves as an internal consultant to City departments. Centralized IT services include network management, server management, applications support, desktop support, and helpdesk support. Additional services, such as support for the integrated library system, are outsourced to an external vendor. The Library employs a system administrator who is responsible for configuring and managing the SirsiDynix Horizon integrated library system (ILS) and numerous other library business applications. The

system administrator also provides project management and general technology support to Library staff.

Most technology costs are paid from the City's Technology Fund, and the Library pays a charge-back to the Technology Fund based on a standard head-count/node-count formula. The Library receives some equipment from library support groups such as the Friends of the Palo Alto Library. This equipment is generally supported by City IT, but is not automatically included in the City's equipment replacement program.

The Library is in the process of renovating and/or rebuilding its five branches. The Children's Library renovation was completed in September 2007, and the College Terrace Library renovation is scheduled to begin in 2009. City voters passed a bond measure in November 2008 to fund the renovation of the Downtown Library, renovation and expansion of the Main Library, and the building of a new Mitchell Park Library.

Planning process overview

Palo Alto City Library contracted Kress Consulting in October, 2008 to manage a technology planning process that would include a review of current technology, interviews and workshops with a broad spectrum of stakeholders, surveys of staff and customers, and creation of a technology plan.

The process followed Diane Mayo's *Technology for Results* approach, with modifications to fit the needs of the Library. The process was divided into three phases:

1. Technology Review, which included an audit of Library infrastructure, hardware, software, and staff skills, by means of interviews, review of documentation and service measures, and staff and customer surveys.
2. Technology Visioning, which included workshops and interviews with staff, management, customers, and other stakeholders to identify challenges and opportunities and envision technology solutions.
3. Technology Planning, which involved cost and benefit analysis of technology projects, an evaluation and selection process, and review and revision of the technology plan.

The planning committee consisted of Library Director Diane Jennings, Library Collection and Technical Services Manager Mary Minto, Library System Administrator Martha Walters, and Consultant Lucien Kress. In addition, the Library Advisory Commission and the Library Citizens Technology Advisory Group gave input and feedback throughout the planning process.

In place of a full-fledged strategic plan, the planning committee used several reports that came out of previous processes. The Library Service Model Analysis and Recommendations (LSMAR) report, published on December 4, 2006, resulted from a study by the Library Advisory Commission. The study comprised a community survey and research into library trends. The LSMAR includes a set of recommendations for improving and augmenting the services the Library provides to Palo Alto City. While it

does not completely fulfill the role of a strategic plan, the LSMAR does provide the framework on which potential and existing technology-related services can be evaluated and selected.

The Palo Alto City Auditor performed an audit of Library operations, culminating in a July 2007 report that provided additional direction to the technology planning process, in particular in the areas of workload management.

At each phase of the planning process, the Consultant interviewed individuals and conducted workshops with groups from a broad spectrum of Library stakeholders. In most cases, the same individuals participated in two or three of the planning phases, providing continuity throughout the planning process. A list of interview and workshop participants is included in Appendix A.

The Consultant also conducted surveys of Library staff and customers. The staff survey evaluated staff technology skills. The customer survey assessed familiarity and satisfaction with current technology services, as well as measuring interest in possible future services.

A technology assessment and web audit, both conducted as part of this planning process, are included as appendices to this report, with high-level findings and recommendations extracted below.

Envisioning the Future at Palo Alto City Library

By 2015, Palo Alto City Library will have completed a major building and renovation project, including the creation of a new 36,000 square-foot Mitchell Park Library and substantial renovations to the Main, Downtown, and College Terrace libraries. The Library will have finished adding RFID tags to its collection and will have installed automated materials handling systems. Library staff will be able to spend less time processing materials, and more time serving the public.

A modern, comfortable, flexible physical space

Customers who visit the Library will find modern, efficient, and versatile spaces for browsing the collection, using computers, participating in community events, engaging in individual or small-group study, and attending group meetings. Areas of the Library will be designated for quiet study or reading. Small study rooms will provide group space, with electrical outlets and access to appropriate tools and technologies to facilitate group projects and collaboration. Community meeting rooms will provide projectors, electronic whiteboards, and web-conferencing equipment. A computer learning center will provide space for training and collaborative computer projects, while public computers and laptops will be available for individual use. A robust wireless network and distributed data and power connections will be available throughout the upgraded facilities.

Your choice of formats

Customers will have access to books, magazines, newspapers, videos, and music. Most printed material will be available in print-on-demand format. Materials will be available in physical and digital formats, with support for a variety of personal devices that the customer owns or borrows from the Library.

A full-service online Library branch

The Library's Online Branch will provide online services that make the Library's catalog and databases more accessible and easier to search, inside and outside the Library. Customers will find online programs that make the Library more accessible to the homebound, and more convenient for busy customers.

In addition to placing holds and renewing items online, customers will be able to get quick answers to reference questions, customize and personalize their library experience, and participate in online communities. Customers will save their preferences and favorite searches, set up alerts and RSS feeds that inform the customer when a desired author or title becomes available, share their ratings and reviews of the materials they've borrowed, and participate in online discussions of books, movies, music, and local events and issues.

Easy access to school resources

Students will have access to their school's file servers, and will easily access school assignments and saved homework files.

A place to create and share information

Customers will use the Library to create as well as consume information. Posting book and movie reviews, commenting on local issues and events, participating in communities with shared interests, publishing stories and articles for other Library customers to read – the Library will be a physical extension of online social networks. The computer learning center and community meeting rooms will provide equipment to create and edit audio and video content.

The Library as destination

Community meeting rooms will also provide live webcasts of important community events – City Hall meetings, high school graduations, groundbreaking ceremonies, amateur sports events. The Library will be an alternative entertainment destination: showing classic movies and concerts; hosting lectures, plays, and live comedy; providing space for chess clubs, knitting groups, political debates, and continuing education lectures.

Mobile-friendly services

By 2015, mobile devices will replace personal computers as the primary customer interface to online services. The Library will provide chat and SMS based reference services; the Library catalog and website will be mobile-friendly; customers will have the option of getting notifications and updating their check-out and hold lists via SMS.

Connecting to the rest of the online world

The Library's online services will interface seamlessly with third-party services such as Facebook, Amazon, and Google Maps.

New ways to navigate the catalog and online services

Advances in voice recognition and touch-based interfaces will give customers new ways to interact with the Library catalog and other online services. Customers will browse through titles online by flicking the screen with their fingers. Customers will be able to navigate the website and catalog by voice command.

Technology Assessment

Technology Infrastructure

The Library's current use of technology is discussed in detail in the Technology Assessment, attached as Appendix C. This assessment, performed as part of the larger technology planning process, included a review of the Library's technology infrastructure, technology-related programs and services, the Library website, and staff technology skills. Findings and recommendations are summarized here, with reference to the full assessment report.

The Library makes satisfactory use of technology to support its programs and services. It uses an industry-standard integrated library system, has introduced some forward-looking services, such as ecommerce and blogs. The Library will continue to expand its collection of digital materials, such as electronic databases and downloadable video, and to move into social technologies.

The Library's current technology infrastructure is stable. The Library is well served by City IT; there is good communication between departments; and City IT meets its service agreements to the Library. The primary areas of concern and opportunity are as follows:

- 1) Knowledge of library-specific technology is not well distributed among City IT staff. Additional knowledge-sharing and planned redundancy of skill sets will improve the Library's confidence in the services it receives from City IT.
- 2) Wide-area network infrastructure is very good, however local-area infrastructure is out of date and limited in expansion capabilities. Current facilities projects provide an opportunity to secure and add environmental control to data closets; upgrade wiring; and add data and power drops.
- 3) Add hot-swappable spare routers and switches to minimize the possibility and duration of down-time.
- 4) Continue to upgrade wireless network infrastructure to meet emerging standards.
- 5) Currently staff and public computers are segmented into separate virtual networks in some branches, but not in others. Segmentation should be standardized across all branches, to minimize security risks and improve traffic balancing.
- 6) Replace Dell servers with City-standard HP/Compaq servers, as they reach end-of-life, to improve efficiency of central management.
- 7) Public computers should be joined to a Windows Active Directory domain for efficient and consistent centralized management.

Web Architecture

The Library's website is discussed in detail in the Web Assessment, attached as Appendix D. This assessment, performed as part of the larger technology planning process, included a review of the Library's website from the perspectives of usability, findability, and breadth and depth of services provided. Findings and recommendations are summarized here, with reference to the full assessment report.

The Library's website is part of the City's website, which runs on Civica, a content management system designed primarily for local government agencies. As currently configured and administered, Civica does not give the Library the platform it needs to have a truly effective website.

Because library websites are the primary interface through which many customers obtain library services, and an important supplemental interface for all customers, it is essential that the Library provide a wide variety of attractive and useful services through its website. The Library needs the capability to:

1. Design its own navigational system (which may be a subsystem to the City's navigational system)
2. Manage its own search-engine optimization and marketing, within the City's brand
3. Target parts of the website to different audiences (such as youth, senior citizens, foreign-language speakers, etc.), with different look-and-feel in each section
4. Add and customize web applications and widgets to provide a diverse set of services
5. Support the Library's commitment to openness, accessibility, and customer-contributed content and feedback

It is a priority for the City that the Library website fit into the branding of the City website. At the same time, because the Library has a more diverse audience than other departments in the City, it is essential that the Library website have a navigational structure that is not constrained by the City navigational structure. This is not to say that the City's navigation should be absent from Library pages, but that the Library's unique navigational elements (sub-navigation is perhaps a clearer term) should be designed with the Library's needs in mind; should appear on every Library webpage; and should be customizable by the Library.

In addition, it is important that the City and the content management system recognize the Library's commitment to openness, participation, and personalization, and that the Library website has the latitude to put these principles to work on its website.

The most important recommendation is that the Library involve itself fully in the City's current reassessment of its web architecture and design, and that the Library advocate for itself and its customers in building a platform that supports an attractive, diverse, and powerful set of web-based services. Additional recommendations are included in the web assessment report.

Staff Skills and Training

The LSMAR recognized the need for additional funds for training in technology. A survey of Library staff showed moderate to good skills in most technology areas, but limited skills in the areas of web content creation and online program design. As the Library augments its services with online programs and an enhanced web presence, it becomes increasingly important for staff to learn the ins and outs of web-based applications.

A small study during the summer of 2008 addressed staff training needs in general, and arrived at the same conclusions with respect to technology training. Staff needs additional Microsoft Office training, especially in Excel. More generally, staff needs support and motivation to participate in training, especially as they feel that they are already too busy.

The Library will provide multiple training options, including guided self-training, onsite workshops at the Library, City-hosted training, online training, and vendor-offered offsite training, with an eye to efficient and economical use of staff time.

Public Relations and Marketing

Libraries frequently report that customers do not know about the resources the library offers, including resources that customers want and ask for. Palo Alto City Library customers are no exception to this rule. In interviews with citizens, they often said the Library “should” provide a service or program that, in fact, the Library already offered.

While a full public relations and marketing plan is outside the scope of this technology plan, it is important to remember in the process of implementing the technology projects described here that projects will not succeed unless customers use the services or programs provided. The Library will use tools such as existing newsletters, email notices, customer survey software, and blogs and wikis, to promote and raise public awareness of its services. In addition, the Library will seek other opportunities to market its assets.

Technology Projects

Introduction

During interviews and workshops in the “visioning” phase of the technology planning process, the planning committee elicited a list of projects that would improve current Library services or add new services. Candidate projects were ranked by various groups of stakeholders. The planning committee conducted a high-level cost/benefit analysis. Through this process the planning committee evaluated and selected a candidate list of technology projects to implement during the next five years.

The projects listed here meet some or all of the following criteria:

1. The project addresses a current need identified by Library stakeholders.
2. The project prepares the Library to meet an anticipated need, reflected by current technology and/or Library use trends.
3. The project promises to increase efficiency and allows Library staff to focus on high-value public services.
4. The project provides a means by which the Library can support City and community initiatives.
5. The project receives passionate support from Library customers and/or staff.

Most of these projects are designed to fit into a typical three-year project plan. However, several projects will extend into the fourth and fifth year. In addition, due to current limitations in human and financial resources, it is likely that some projects will be postponed or extended beyond three years.

Currently the Library lacks sufficient staff resources to implement all of the projects listed below. The Library is in the process of evaluating available staff time and estimating how staffing needs will change as new projects are implemented. The details of this project plan will change as Library staff and financial resources change.

Detailed cost and time estimates for all major projects are included in Appendix E. It should be noted that, where specific products are specified, they are intended as examples of the sort of product that would fulfill the Library’s need. The Library will go through a product and vendor selection process as required by City policy. Costs should be considered to be approximate.

Project Overview

The following table shows the major projects proposed in this technology plan, with estimated initial and ongoing costs. The “Overall Cost (5-year estimate)” column represents a very rough estimate of long-term cost, based on an average labor cost of \$30/hour. The “Benefit” column shows the perceived benefit of the project, based on evaluation by the Library Advisory Commission and Library management.

Project	Initial Cost (non-labor)	Ongoing Cost (non-labor)	Initial Staff Labor (hours)	Ongoing Staff Labor (hours/year)	Overall Cost (5-year estimate)	Benefit
RFID/Automated Materials Handling	\$1,253,000	\$65,250	2925	-7207*	\$632,430	High
ILS Upgrade/Migration	\$350,000		1384		\$391,520	High
Next-Generation Catalog Apps	\$51,000		600	110	\$82,200	High
Online Branch	\$2,260		680	424	\$73,540	High
Meeting Rooms	\$21,000		66	312	\$60,420	High
DVD Security System	\$32,000	\$4,800	200		\$57,200	Low
Download Stations	\$6,850	\$1,713	74	260	\$47,120	Medium
Microform Digitization	\$38,700		252		\$46,260	Medium
Website Enhancement	\$15,000		220		\$21,600	High
Podcast/Videocast	\$6,050		218		\$12,590	Medium
Customer Tutorials	\$2,130		108		\$5,370	Medium

* For the RFID/AMH project, the savings in ongoing staff labor is estimated by averaging over five years from 2011-12 to 2015-16. Since the system is installed over a period of three years, actual labor savings vary from almost 1200 hours in 2011-12 to almost 10,000 hours in 2015-16. Detailed figures can be found in Appendices 5-7 of the Galecia report.

RFID and Automated Materials Handling Project

The Library will tag its entire collection with radio frequency identification (RFID) tags. The Library will select an automated materials handling (AMH) vendor and work with the company to design systems appropriate to each library. Depending on a short-term study of materials loss rate, the Library may install a security gate system.

Benefits

In the *Library Service Model Analysis and Recommendations*, the Library Advisory Commission recommended proceeding with evaluation of RFID and AMH in response to increasing workload imposed by a growing collection and increased circulation. The City Auditor's report on Library Operations further supported this analysis, observing that "the nature of the Library's workload is changing rapidly" and recommending RFID as a means to reduce staff time spent on checking in materials.

The Library contracted the Galecia Group in 2008 to conduct a thorough feasibility and cost study of RFID and AMH. The consultant's conclusion was that RFID/AMH would significantly reduce workload, thereby limiting the number of new staff needed as circulation increases. The study recommended adding RFID tags to the entire collection and installing AMH systems at the Main, Children's, and new Mitchell Park libraries.

AMH speeds the movement of books to the shelf, reduces incidence of repetitive-stress related injury, and frees staff from tedious work to provide more direct public service. RFID tags can improve the reliability of check-in and check-out and interact with security systems and inventory systems to improve retention of materials.

Estimated Cost, Staff Time, and Timeline

The Galecia Group estimated cost of installing RFID and AMH systemwide to be \$1,253,000, including the cost of adding RFID tags to existing materials and new materials purchased for Mitchell Park. A compatible security gate system is estimated separately at \$210,000. Annual maintenance is estimated at \$65,250. Additional annual tagging costs are estimated at \$21,250. The Consultant also estimated a break-even period of seven years, based on labor savings.

The Galecia Group estimated staff time for tagging existing materials at 2817 hours. The system will provide significant savings in staff labor, ranging from almost 1200 hours in the first year after installation, to over 10,900 hours in the eighth year.

Additionally, staff training should be budgeted at 4 hours per staff member involved with AMH, with a small number of lead employees receiving advanced training, totaling 12 hours per lead. In addition, involved staff should receive about 2 hours of ongoing training per year. It is anticipated that a total of 12-15 staff members will require RFID/AMH training.

The project timeline is shown in detail in the Galecia Group report. It is summarized in Appendix E for ease of reference. If all tasks are performed sequentially without overlap, the complete timeline is 102 weeks, or almost exactly two years. However, there are many opportunities to compress the timeline by working on tasks simultaneously.

Website Enhancement Project

In partnership with the City's website remediation effort, the Library will work with a web design and usability consultant to design a library website that will work within the necessary constraints of the City's content management system, while providing more of the functionality and interactivity that the Library needs to provide to its customers. With the consultant's help, the Library will conduct staff and customer focus groups to discover useful categorizations, prioritizations, and navigational strategies. The Library will also survey websites of "similar" library systems to choose design approaches and provide guidance to a consultant.

Benefits

Library customers increasingly want and expect to access services online, in addition to onsite. Providing online services is an economical way to supplement the Library's onsite services. A website that is attractive, easy to use, and able to display a wide variety of features and applications will allow the Library to expand its online presence.

A library website serves a diverse audience – children, teens, adults, seniors; native and secondary English speakers; customers with vision impairments and learning disabilities. In order to serve its audience, a library website must provide excellent navigation and well-designed categories of information.

It is possible for a library website to exist within the branding and look-and-feel of a municipal website, and under the constraints of a content management system, but it requires careful design and specialized expertise.

Customer focus groups will reveal how customers categorize the different services and types of information that a website provides; which categories are most important; and how customers expect to navigate between categories.

Estimated Cost, Staff Time, and Timeline

Assume that the scope of consultation includes 1) designing staff and customer focus groups; 2) evaluating and publishing focus group results; and 3) designing user interface and architecture for the Library website, within the constraints of the City's content management system and IT policy. Consulting fees are estimated at \$15,000.

Two other projects in this technology plan – the Onsite Branch Project and the Next-Generation Catalog Applications project – depend on the success of this project, since they are implicitly dependent on powerful and flexible web architecture.

Staff time is estimated at 220 hours over 32 weeks. See Appendix E for more detailed estimates.

Online Branch Project

The Library will build an “online branch” in three phases.

In the first phase, the Library will implement the ability to provide reference service through a web-based tool such as meebome (<http://www.meebome.com/>), Text A Librarian (<http://www.textalibrarian.com/>), or libraryh3lp (<https://libraryh3lp.com/>). Librarians will staff the service during open hours and, if budget allows, during some closed hours as well.

At the same time, Library staff will prepare for the second phase by participating in a private social network created with a low-cost hosted platform such as Ning (<http://www.ning.com/>) and/or other established services such as Facebook, in order to familiarize themselves with the characteristics and challenges of social networking applications.

In the second phase, the Library will build a social networking site loosely connected to its catalog system, so that customers and staff can share book reviews, book ratings, event information, photos, and videos. Library blogs and wikis will be migrated from their current hosts into the social networking site. The site will host podcasts, tutorials, and discussion forums. RSS feeds will be supported for blog entries, podcasts, library events, and new collection items.

In the third phase, the Library will fully integrate the social networking site with the Library catalog and electronic resources, to create a full-featured online branch. (See the Next-Generation Catalog Applications Project.)

Benefits

The LSMAR report recommended incorporation of social networking tools “to allow personalization of individuals’ use of and participation in enhancing library service.” Furthermore, the report recommended a focus on building a “virtual branch” in order to increase accessibility and efficiency of Library services, and to connect the community to the Library.

As online services have begun to compete more effectively with brick-and-mortar businesses, customers have come to expect many of the same services online as they receive in library buildings. Libraries can extend their reach and remain relevant to busy customers by providing an online alternative.

The status of Twitter and Facebook as among the most popular and fastest growing websites indicates that customers are more attracted to social networking services than ever before.

Online “chat” reference is inexpensive to support, and usually can be provided without additional staffing, as long as it remains low in volume. The Library may, however,

choose to staff the chat reference service during hours that the Library buildings are closed, for example on Sunday nights.

Estimated Cost, Staff Time, and Timeline

Chat reference and social network hosting and software are estimated at \$2260 per year.

The Online Branch will require significant staff attention in order to answer reference questions, evaluate and revise services, prevent system abuse and enforce the acceptable use policy. While reference service can be expected to add only incrementally to reference staff workload, other responsibilities may rise to 20 hours or more per week. In addition, all staff will require training in order to support customers and effectively promote use of the Online Branch. The estimated staff time for implementation is 680 hours, with ongoing staff time of 424 hours/year.

Implementation is estimated to take 54 weeks. See Appendix E for more detailed information.

Next-Generation Catalog Applications Project

The Library will implement next-generation catalog applications that expand the current online catalog system to include features such as enhanced search, customer personalization, and customer content. The applications will be integrated into the Online Branch. The Library will follow a “perpetual beta” strategy to gather continuous feedback and make constant improvements to the system.

The project will include an improved “discovery layer” – improved search capabilities, fuzzy search logic, ability to rank search results by relevance and by popularity, faceted search, search suggestions, automated recommendations, customer tag searches, federated search, and expanded meta-data search (such as searching customer reviews and booklists).

Additionally, the project will include personalization and customization features, for example the ability for customers to create and manage a profile, save searches and booklists, set up alerts and event reminders, and share content with other customers.

The project will also create a platform for customer-contributed content: book ratings, book reviews, discussion forums, tagging, booklists, etc. This platform will give the customer full control over the extent to which s/he wishes to share information with other customers.

The Library will investigate open-source solutions for providing these services, seeking to take advantage of the great amount of open-source development taking place in these areas. In addition, the Library will survey commercial applications.

The Library is planning to investigate the BiblioCommons “social discovery system” in partnership with Santa Clara County Library in 2009.

The Library will use customer surveys, customer comments, and other feedback mechanisms to continually evaluate and improve the system.

Benefits

In interviews with citizens and staff, participants consistently referred to their dissatisfaction with the current catalog interface and their desire for the sorts of tools that Amazon and Google have made familiar.

The catalog improvements in this project will improve the effectiveness of the Library catalog in meeting the needs of its customers. They will also build a sense of community between the Library and its customers, and between customers, which will lead to a more satisfied customer base and a better supported Library.

Estimated Cost, Staff Time, and Timeline

The market in next-generation catalog applications is rapidly evolving, and it is difficult to estimate costs. The Library may combine products from SirsiDynix with proprietary third-party solutions such as BiblioCommons, Ex Libris Primo, Serials Solutions AquaBrowser and Summon, OCLC WorldCat Local, and LibraryThing for Libraries, and with open source solutions such as VuFind and SOPAC. Social networking tools may be pieced together from hosted services such as Facebook, Flickr, Ning, and others. Some tools may be custom developed. In a world of application programming interfaces (APIs) and mash-ups, which allow separate applications to interact, a loosely integrated set of solutions may be the best solution.

Given the fluidity and complexity of the market, the Library may benefit from hiring a consultant to investigate and select services for initial implementation. Subsequent additions and integrations will be outsourced on an ad hoc basis.

Consulting services are estimated at \$15,000. Software licensing and/or hosting is estimated at \$36,000, with ongoing maintenance costs of \$5000 per year.

Staff time to implement the project is estimated to be 600 hours, with 110 hours/year of ongoing work. The project timeline is 48 weeks.

See Appendix E for more detailed cost and timeline estimates.

Microform Digitization Project

The Library has a collection of local newspapers on microform, dating from 1870 on. In order to preserve this collection in a more durable format, as well as to increase ease of access, the Library will oversee the digitization of its microform collections.

The Library will seek to be a contributor the California Newspaper Project (<http://cnp.ucr.edu/>) to ensure the project is compatible with efforts elsewhere in the State. The CNP is initially focused on newspapers published before 1910, with additional years to be added as funding allows.

Initially the Library will focus on newspapers between the years of 1893 and 1910. The Library will obtain master microfilm reels for these years, and contract a digitization vendor to create images and OCR text from the microfilm. The resulting files will be cataloged and published for customer access.

The Library will also try to have its collection hosted with the California Digital Newspaper Collection (<http://cdnc.ucr.edu/>). If hosting is not available, the Library will host the collection locally on the City-supported ContentDM server. (Greenstone [<http://www.greenstone.org/>] provides an open-source alternative, but installation, training, and support costs may outweigh the license cost savings.)

The Library will seek funding from the National Digital Newspaper Program (<http://www.neh.gov/projects/ndnp.html>) to expand the project to include years through 1922, and possibly beyond.

The Library will seek a cooperative relationship with the Digitization Program at Stanford University Libraries and Academic Information Resources (<http://www-sul.stanford.edu/depts/dlss/services/>) to avail of expertise.

As an extension of this project, the Library may choose to create a special collection of newspaper front pages, or newspaper articles on a given theme, and add audio commentary.

The Library will follow the recommendations of OCLC's 2007 report on digitization, *Shifting Gears: Gearing Up to Get Into the Flow* (<http://www.oclc.org/programs/publications/reports/2007-02.pdf>), which can be summarized as:

- access over preservation
- selection has already been done
- catalog lightly; allow user tagging and commentary
- quantity over quality
- make it searchable

In addition, the Library will seek to the California Digital Library's Guidelines for Digital Images (<http://www.cdlib.org/inside/diglib/guidelines/bpgimages/>).

Benefits

Staff and customers alike emphasized the importance of accessing local information at the Library, and of converting impermanent, hard-to-access, and hard-to-search information to searchable digital formats. This digitization project takes a valuable resource that is unique to Palo Alto City, currently available only on microfilm, and converts it to a format that can be hosted anywhere and accessed from any web-browser.

In addition, the Library's microfilm readers are expensive, require a lot of physical space, and are difficult for some patrons to use. The goal is to eventually replace all microfilm and microfiche resources to digital formats, and eliminate microform readers altogether.

This project also gives the Library an opportunity to contribute to a valuable national and statewide effort, with the possibility of grant funding for future phases of the project.

Estimated Cost, Staff Time, and Timeline

Selection of newspapers will depend on several factors, including availability of master reels and compatibility with regional and national newspaper digitization projects. As an example, we calculated approximate costs to digitize the Palo Alto Times between 1893 and 1910 (approximately 25 reels of microfilm).

The cost to obtain master copies of the microfilm reels, have them digitized and perform OCR, and host the resulting digital collection is approximately \$38,700.

Staff time is estimated at 252 hours over 26 weeks.

Please refer to Appendix E for detailed cost and timeline estimates.

Podcast/Videocast Project

The Library will create videos for distribution to customers. In the first year of the project, the Library will record the following:

- Library Tour video (a five-minute scripted video showing what the Library has to offer)
- Story-time or short program videos (12 one-hour videos)
- Major program videos (2 two-hour videos)

Videos will be recorded and processed by professional videographers from the Community Media Center. Short videos and excerpts of longer videos will be made available to customers as podcasts. All videos will be published on the Library's website, on YouTube, in Facebook, and on other video-sharing sites.

The Library will invest in Flip video cameras for creating informal, ad hoc videos in addition to those listed above. The Library will join the YouTube Nonprofit Program (<http://www.youtube.com/nonprofits>) for extended upload capacity and premium promotion features.

If the videos prove popular, in the second year of the project the Library will invest in video equipment and training for Library staff, and begin producing videos in-house.

Benefits

Video sharing has become a popular online activity, and a well-made video can become viral and reach customers who might otherwise not be interested in the Library. Videos give the Library another way to promote its services and give customers a sense of connection to the Library. Videos also reach customers who are unable to attend special programs or story-times.

Estimated Cost, Staff Time, and Timeline

For cost estimates, we assumed that recording and processing of video would be outsourced to the Community Media Center. The corresponding costs would be as follows:

Professional services:	\$6050
Staff time:	218 hours
Timeline:	34 weeks

See Appendix E for detailed cost and timeline estimates.

Customer Tutorial Project

The Library will create short audiovisual tutorials for customers, focusing on frequently asked questions such as:

- conducting a catalog search and placing a hold
- accessing electronic resources
- signing up for a public computer
- downloading ebooks or other digital materials
- signing up for an event

Initially staff will use a low-cost tool such as Techsmith Jing Pro (<http://www.jingproject.com>) to create screencasts with audio. If the tutorials are successful, the Library may invest in full-featured screencast production and editing software such as Techsmith Camtasia Studio.

Tutorials will be published on the Library website and will be promoted through several avenues:

- highlighted on the Library website homepage
- featured on the Library's information kiosks
- advertised on bookmarks available at the customer service desk
- advertised in e-newsletters and in email notices
- published on YouTube, in Facebook, and on other video-sharing sites

The Library will invest in staff training to ensure effective, high-quality tutorials.

Benefits

A significant amount of staff time is spent answering frequently asked questions. Online tutorials will divert at least some of those questions, freeing up staff to provide other services. In addition, online tutorials will help customers who are unlikely to ask questions, as well as customers who are accessing the Library remotely.

Estimated Cost, Staff Time, and Timeline

The estimated cost of software licensing and training is \$2130. Staff time is estimated at 108 hours for the first four tutorials, including software training. Subsequent tutorials would be significantly cheaper in staff time, approximately 4 hours per tutorial.

The timeline for the first four tutorials is 12 weeks. See Appendix E for detailed cost and time information.

Multiple-Format Download Station Project

The Library will install multiple-format download stations in renovated libraries. These stations will allow customers to download audiobooks, ebooks, music, video, and other digital content to the customers' personal devices. These stations will support a variety of customer devices, such as Amazon Kindle, Apple iPod, Microsoft Zune, and MP3 devices that install as a USB drive. Library staff will be trained to support customers in downloading digital content to specified categories of device.

The Library will train volunteers to assist in supporting these stations, in case Library staff is unavailable.

Benefits

In customer interviews and forums, a common complaint was that customers had difficulty in downloading and saving digital media from the Library's collection and subscription services. Library staff confirmed that they frequently get questions from customers, on the telephone and in person, but found it difficult to provide support without hands-on access to the computer and device the customer was using. Download stations will provide customers with the training they need to use digital downloads successfully on their own, and will increase their confidence and satisfaction in library services. Library staff will be able to assist customers more quickly and with greater success.

Estimated Cost, Staff Time, and Timeline

Download stations will not require special equipment over and above a standard public PC. In addition, the Library will invest in a variety of consumer devices to use in training staff and volunteers to support these stations. An initial budget of \$850 will purchase, for example, an Amazon Kindle, a low-end Apple iPod, a low-end Microsoft Zune, and low-end players by SanDisk and Creative. These players represent 80% of the portable music, video, and e-book players sold today, based on Amazon's top seller statistics.

Staff time to implement the project is 74 hours over 12 weeks, with an additional 5 hours per week to support the systems at four branches. (This assumes a substantial amount of volunteer help.)

See Appendix E for more detailed cost and time estimates.

DVD Security System Project

The Library will investigate solutions for protecting DVDs from theft, while alleviating customer and staff frustration with the current security devices.

Based on experiences in other libraries, the Library will assess the risk of theft for individual categories of media, for example determining whether video documentaries are at high risk of theft. If appropriate, the Library will store low-risk categories of media on public shelves, without locking devices. The Library will generate media loss statistics on a regular basis to re-evaluate risk level.

As the Library implements RFID tagging, the Library will evaluate the feasibility of directly tagging the media (as differentiated from media packaging) to enable detection of attempted theft and/or automatic check-out of media.

The Library will continue to investigate secure storage options for media. Vending machine options will be evaluated based on efficient use of space; minimization of labor-intensive processes such as loading of DVDs and maintenance of separate databases; and customer ease of use. If appropriate and available, the Library will conduct a trial of one or more systems.

Benefits

The LSMAR report recommended investigation of better media circulation systems.

The current security system for DVDs requires staff to physically remove a locking device from the DVD cases at check-out time. This interrupts a customer's check-out process, requiring that s/he visit both the customer service desk and the self-checkout station to complete his/her transaction. In addition, the current system increases the risk of repetitive stress-related injuries.

The ideal solution will allow the customer to check-out a DVD without staff intervention, while protecting the media from theft and avoiding physically challenging processes. Effective DVD security will also reassure customers and staff that the Library is taking appropriate measures to protect taxpayer investment in the Library's media collection.

These benefits will be weighed against the additional challenges that a "vending machine" solution would impose, including use of valuable floor space, impedance of customer traffic, and the need to queue to use the machine. In addition, additional staff time required to stock a vending machine and maintain separate databases must be taken into account.

Estimated Cost, Staff Time, and Timeline

A small vending system such as the allCIRC Vault (http://www.latcorp.com/allCIRC_Vault.html) or the Libramation MediaBank Mini (<http://www.libramation.com/>) holds about 400 DVDs and costs about \$20,000. A medium-sized system like the Libramation MediaBank MIDI (capacity: 1118 DVDs)

costs about \$32,000. Annual maintenance fees can be estimated at about 15% of purchase price.

We estimate that implementing the system will require 200 hours of staff time over 28 weeks at the first branch, and 28 hours over six weeks for each additional branch.

Since deploying a DVD security system will substantially reduce the amount of time staff spend handling DVD check-outs, the ongoing staff labor is estimated to be net zero.

See Appendix E for detailed cost, staff time, and timeline information.

Facilities Projects

The Library will renovate the College Terrace, Downtown, and Main libraries, and build a new Mitchell Park Library during the scope of this technology plan. The tentative construction schedule is as follows:

College Terrace Library:	Summer 2009 – Summer 2010
Downtown Library:	Spring 2010 – Spring 2011
Mitchell Park Library:	Spring 2010 – Spring 2012
Main Library:	Summer 2012 – Summer 2013

All libraries will receive infrastructure upgrades, including electrical and HVAC updates, and space reconfiguration.

Mitchell Park Library will have a 60-seat community meeting room, dedicated children's and teen rooms, a computer learning center, and several group study spaces.

Main Library will be expanded to add four small group study rooms and a new wing, accommodating a 100-seat community meeting room.

Downtown Library will have a 60-seat community meeting room, a small room dedicated to children, and a six-seat group study room.

With improved infrastructure and more flexible space, all libraries will have space for additional public computing facilities. Libraries will add public computers and loaner laptops. Early literacy stations, such as those provided by AWE (<http://www.awe-net.com/>) will be available at all libraries. Each library will have an information kiosk, featuring a PowerPoint tour of the branch and information about accessing services and programs.

Community meeting rooms will be equipped with ceiling-mounted computer projectors, electronic whiteboards with USB support, a digital video camera suitable for recording meetings and events, and web-conferencing equipment. Customers will be able to save whiteboard and video files to their own USB drives, burn to DVD, or upload to an internet file storage site.

Depending on budget and City interest level, the Library may choose to install an enterprise-grade web conferencing system, such as Cisco Unified MeetingPlace, which would connect Library meeting rooms and other City locations. Alternatively, the Library may install a standard PC with a web camera and consumer-grade software (such as Skype) to enable informal web conferencing between Library meeting rooms and other locations.

Benefits

New and renovated buildings will accommodate several customer needs that are currently underserved due to obsolete infrastructure in aging buildings. Customers will have access to more public computers, and will be able to use library or personal laptop computers in several settings – individual spaces, small group study rooms, and community meeting rooms. Customers will also be able to use meeting facilities that support local and distributed collaboration. The Library will become a more valuable resource for community groups, small and/or emerging businesses, and people involved in regional, national, or international collaborative projects.

Estimated Cost, Staff Time, and Timeline

Equipment will be specified during the project. The following equipment list is provided for estimating purposes.

Management PC:	Standard PC with video capture card	\$1500
Electronic whiteboard:	Panasonic Panaboard UB-8325	\$3000
Projector w/ ceiling mount:	InFocus Learn Big XS1 Projector	\$1500
Video Camera w/ tripod:	Sony DCR-SR220 Handycam	\$800
Web-conferencing camera:	Standard x 2	\$200
Total:		\$7000

Staff time for implementing is estimated at 24 hours over four weeks for the first building, and 16 hours over two weeks for additional buildings. Ongoing support time is estimated at 104 hours per year for each building.

Additional cost and time information can be found in Appendix E.

ILS Migration Project

Despite current frustration with SirsiDynix Horizon, the integrated library system (ILS), consideration of a new system will be postponed until the major vendors have settled their product strategies, and open source alternatives such as Evergreen and Koha have become more robust and widely distributed.

The average life expectancy of an ILS is about seven years, and if that holds true into the future the Library will want to migrate to a new system in around 2012. Staff will begin to survey the market and conduct preliminary research in the first half of 2011, with the expectation of writing a request for proposal (RFP) in late 2011 or early 2012, selecting a system by Summer 2012, and migrating in late 2012 or early 2013.

In the meantime, the main frustrations among customers will be addressed through the Online Branch Project and the Next-Generation Catalog Applications Project, described elsewhere in this plan. These projects will provide improved search functionality, enable smart recommendations, provide opportunities for creating and sharing user content, and allow customers to customize their catalog use.

The Library will continue to update and upgrade the current SirsiDynix Horizon system to take advantage of new features, for example to implement a discovery layer, federated search, or other desirable features.

As open-source development in the ILS market continues to escalate, the Library will participate in the Open Source Consortium project managed by Califa and the Silicon Valley Library System in 2009 and 2010. This project will provide an open-source ILS sandbox and provide Library staff with experience and perspectives in open-source library systems.

Estimated Cost, Staff Time, and Timeline

The cost and time estimates in Appendix E assume selection of a commercial system, with the expectation that selecting an open-source system would cost about the same, though the costs would be shifted from licensing and support to consulting and development costs.

Hardware and software costs:	\$350,000
Staff time:	1384 hours
Timeline:	84 weeks

Administrative and Support Services Projects

The Library has identified a number of administrative and support services projects to implement and/or support.

Improved telephone and voicemail system

The Library will actively support the City's effort to procure an improved telephone and voicemail system. Features of special benefit to the Library include:

- Queue calls efficiently.
- Record and play informational messages to those in the queue.
- Record and manage multiple greeting messages.
- Record emergency greetings without overwriting standard greetings.
- Provide caller identification.
- Allow many callers to call into a single conference number.

SAP Interfaces

The Library will investigate the availability of software to link the City's enterprise resource planning software, SAP, to the SirsiDynix Acquisitions module, in order to facilitate the processing of invoices. Currently there does not appear to be a dedicated software solution, but City IT may be able to support a solution using a SQL query tool.

The Library will also investigate cash register systems that interface with SAP to simplify cash handling and reconciliation.

SirsiDynix statistics

The Library is eager to obtain better statistics from the SirsiDynix catalog system. This requires additional training for Library staff, and possibly additional tools such as Crystal Reports.

Technology support training for staff

The Library will develop training opportunities for staff to improve their skills in providing technology support to customers.

Current Projects to Expand

The Library will expand the following current projects.

Accessibility tools on public computers

Public computers currently provide only the standard Microsoft Windows utilities for accessibility. The Library will investigate and install more advanced tools such as Freedom Scientific JAWS, AI Squared ZoomText, and alternate input devices.

Book Lists and Reviews

The Library currently provides an electronic newsletter that offers reviews of books in the Library collection. The Library will expand the number and category of booklists available online or through subscription. The Library will look for a solution that allows customer to receive a newsletter customized to their individual interests.

Computer classes

The building of a new Mitchell Park Library with a new computer learning center will allow the Library to host an increased number of computer classes on a variety of topics.

Laptop loaning

The Library will continue to expand the number of laptop computers available for loan to customers inside the library buildings.

Online databases

The Library will continue to expand the number of online subscription databases available to customers inside and outside the Library.

Offline circulation module

The Library will implement an offline circulation module that allows the Library to continue to check in and check out in the event that the integrated library system goes offline.

Infrastructure upgrades

The Library will consult with City IT to ensure that wide area and local area network infrastructure continues to be upgraded in response to improved technology and emerging standards. Specific needs include updating network wiring to Category 6 to support Gigabit Ethernet; upgrading wireless devices to support the 802.11n (aka Wireless-N) standard; and adding hot-swappable spare routers and switches at each Library location.

Current Projects to Sustain

The Library will continue to support the technology projects and technology-related projects listed in the Current Technology Services Inventory, Appendix B.

Capital and Labor Costs

Major Projects

Budget and timeline information for the major projects is shown in Appendix E.

Staffing

Library staff members currently have very little time to work on research and development or to take on new technology projects. Several positions are currently vacant and are being used to accumulate salary savings. The current economic situation makes it difficult to argue for additional staffing, beyond that already required to support the LINK+ interlibrary loan system.

However, this technology plan requires a significant investment of staff hours, both increasing current workload among public services, and requiring new technology skills. In order to manage new technology projects, the Library's System Administrator will need to offload tasks to one or more employees with advanced technical skills.

Contingency Budget

The Library has a number of ad hoc technology expenses that cannot be fully planned for. For example, the Library receives donated equipment from organizations such as Friends of the Library, and needs to replace it outside of the usual hardware replacement cycle if it breaks down or wears out. Equipment that may be purchased from the "contingency budget" includes local printers, image scanners, barcode scanners, special hardware and software, web application fees, etc. This technology plan assumes a base level of funding for equipment and software not specifically included in the City IT budgeting.

Contingency Budget: \$4000.00 - \$5000.00

Bibliography

Mayo, Diane. Technology for Results: Developing Service-Based Plans (PLA Results Series). Washington, D.C.: American Library Association, 2005.

New Media Consortium and the Educause Learning Initiative, *The Horizon Report 2009*, 2009.

OCLC, *Gearing Up: Shifting Gears to Get Into the Flow*, October 2007.

Palo Alto City Auditor, *Audit of Library Operations*, July 2007.

Palo Alto City Library Advisory Commission, *Library Service Model Analysis and Recommendations*, December 4, 2006.

Appendix A: List of Interviews and Workshops

The Consultant conducted interviews and workshops with the following individuals and groups.

Library Managers
Library Public Services Staff
Library Technical Services Staff
Library Administrative Staff

Jim Keene, Palo Alto City Manager
Glenn Loo, Palo Alto City CIO
City IT staff

Library Advisory Committee
Citizens Technology Team

Marie Scigliano, Director of Technology and Libraries, Palo Alto School District
Elliot Margolies, Community Media Center
Larry Magid, Technologist
Citizens Open Forum

Palo Alto City Library
Technology Assessment
December 2008

Lucien Kress
Kress Consulting
Portland, Oregon

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Introduction

This technology assessment is the result of activities related to a technology planning process at Palo Alto City Library, between October and December, 2008. The assessment includes a review of the Library's technology infrastructure, technology-related programs and services, the Library website, and staff technology skills.

Activities included review of foundation and planning documents; review of service measures and statistics; interviews with stakeholders, including Library and City management, Library and City IT staff, representatives of partner organizations, and Library customers; a staff skill survey; and a customer survey. Appendix A includes a list of stakeholders and workshops included in the process.

Palo Alto City Library is a busy library system, with increasing circulation and door-count numbers. Its community enthusiastically supports five library branches, and recently passed a bond measure supporting much-needed improvements to three branches.

The Library serves over 50,000 cardholders, receives over 880,000 onsite visits per year, and circulates over 1.5 million items per year. Over 16,000 customers used public computers nearly 140,000 times last year. The Library website had over 500,000 pageviews in the ten-month period ending 6/30/08.

In recent years, the Library has migrated to the SirsiDynix Horizon integrated library system (January 2005), implemented self-checkout stations, enabled online holds and renewals, established a loaner laptop program, and begun collecting fines online.

Library technology is supported by the City's Information Technology department, with additional support from Library staff. City IT acts as an internal consultant to City departments, with an annual chargeback based on number of staff, computers, software applications, servers, etc. Some service level agreements exist, but Library management and staff are not well-acquainted with these agreements. City IT was continually downsized between 2002 and 2007. Two major projects are underway: an SAP upgrade that is expected to be complete in May 2009, and a website review that should result in a final report in 2009.

The current technology infrastructure is stable, with opportunities for improvement in specific areas. The greatest needs are in increasing reliability and redundancy in IT support, and improving the Library's website.

Strategic Environment

The Library does not have a current strategic plan. It has, however, undergone several exercises that provide context to a technology planning project.

In 2006, the Library Advisory Commission completed an analysis of current service models and a set of recommendations for future service priorities. The report, *Library Service Measure Analysis and Recommendations (LSMAR)*, is available on the Library website. Recommendations that have since been incorporated or planned for include membership in the LINK+ resource sharing system; incorporation of an ecommerce system; and an increase in the number of public computers and laptops available for customer use.

Additional key recommendations include:

- Continue to take advantage of technological innovations to increase accessibility and efficiency.
- Continue to build the website as a “virtual branch”, providing remote access to library services and materials.
- Upgraded voicemail and telephone system.
- Videoconferencing between branches to improve reference services.
- Incorporation of social networking tools to increase customer use of Library services.
- Planning to introduce new system functionalities such as media dispensing kiosks.
- Additional training funds for Library technology staff.

The LSMAR also addresses the need for facilities improvements and implementation of automated materials handling systems.

In 2007, the Palo Alto City Auditor performed an audit of Library operations. The resulting report, also available on the Library website, also emphasizes the need to investigate radio frequency identification (RFID) technology and automated materials handling systems to reduce staff workload. The audit also reiterates the need to effectively train Library staff.

In Spring 2008, the Library contracted the Galecia Group to study the cost and benefit of implementing RFID and automated materials handling at the Library. In light of increased staff workload imposed by routine circulation growth and implementation of online holds, as well as the expected increase imposed by participation in the LINK+ interlibrary loan system and the planned increase of the collection in the renovated Mitchell Park branch, consultant Lori Ayre recommended installation of a \$1.2 million dollar system, over a two-year project timeline, with an estimated break-even period of seven to nine years.

Technology Infrastructure

Network Infrastructure

The Library network is stable. The City and Library are served by a gigabit fiber network, with a 10 Gb internet connection through Palo Alto Internet Exchange (PAIX). The City and Library networks are connected by a 100 Mb gateway. Public and staff computers at two branches (Main and Children's) are segmented, but share a network at the other branches.

Network devices are primarily HP, with some Cisco and Cabletron devices mixed in. Onsite routers and switches share space with HVAC equipment and janitorial supplies; data closets are not effectively climate controlled or secured. The age and condition of four branches (Main, Downtown, Mitchell Park, and College Terrace) make it difficult and expensive to add electrical and data wiring.

All branches provide wireless access, using low-end wireless access points.

City IT assigns a primary network administrator to the Library, with backup available from other administrators.

Recommended improvements include:

1. Segment public and staff computers at all branches, to minimize security risks and make it easier to balance traffic.
2. Secure and climate-control data closets.
3. Invest in onsite hot-swappable routers and switches to avoid downtime in case of a network outage.
4. Invest in high-end wireless infrastructure where it is unfeasible to add new wiring.

Server Infrastructure

City IT manages approximately 150 servers, located in the City Hall server room. The Library uses enterprise servers (Active Directory, SAP, and Web servers), as well as Library-specific servers. The latter include the SirsiDynix Horizon integrated library system, Comprise SAM PC and print management systems, Edify Telephony system, SIP2/ESIP servers, Envisionware Ecommerce server, and OCLC ContentDM. The City primarily uses HP/Compaq servers.

City IT staff provide hardware and operating-system management, upgrades, and patches. Application-level support is provided by vendors, the Library system administrator, and City IT staff.

The Library's server infrastructure is stable. Some servers are nearing end-of-life and should be replaced. In some cases, Library services run on Dell servers, which should be replaced with HP/Compaq servers to allow more efficient management by City IT. In addition, some Library applications may benefit from server virtualization.

Desktop Infrastructure

The Library maintains approximately 190 staff and public computers, along with printers, barcode scanners, and other peripherals. Support is provided by City IT, with a desktop technician assigned to the Library. Technicians are rotated among departments periodically, with a training and knowledge-sharing period to ensure transfer of knowledge.

Library desktop support requires several areas of specialized knowledge: understanding the unique needs of libraries to maintain patron confidentiality while giving access to a wide range of resources; supporting the Comprise SAM public computer and printing management system; and use of Microsoft SteadyState, Public Web Browser, and registry hacks to secure public computers. Currently this knowledge is concentrated in one desktop technician.

Library public computers are currently not part of a domain, but rather are managed as a workgroup. City IT uses remote control software (VNC, PC Anywhere, etc.) to do some maintenance, but the PCs require a substantial amount of hands-on work.

Recommendations for desktop infrastructure improvements:

1. Create an Active Directory domain for public computers, to gain the benefits of centralized management and updates.
2. Improve knowledge-sharing and cross-training between desktop technicians, to ensure reliable support.

IT Helpdesk

The City IT Helpdesk provides technical help and problem escalation services to all City departments. Helpdesk response is good, and problem reports are recorded and escalated appropriately. However, Library-specialized knowledge is uneven among helpdesk technicians, and getting immediate help often depends on who happens to answer the helpdesk phone. The recommendation for the helpdesk is that knowledge-sharing and cross-training be implemented more effectively.

Website

The Library website is part of the City's website. The City website was migrated to a content management system, Civica, in August 2007. The Civica CMS is a Windows .NET 2.0 based system using Microsoft Internet Information System and Microsoft SQL Server.

The new website has attracted criticism from City staff and citizens. Staff have complained about the constraints imposed by the CMS, and staff and citizens have criticized the graphic design and usability of the website. A review is currently underway with a final report expected in April 2009.

In addition to the normal constraints of a CMS, City IT has restricted the features available to departments in order to control branding, manage feature sprawl, and ease web support. Allowed features include web pages, news details, and linked files ("filebank" objects). The Library has been given some special permissions and has been able to add some additional features, but needs more flexibility to add widgets and applications.

Library webpages are the most popular destinations within the City website, with approximately 500,000 pageviews in the ten-month period ending June 30, 2008. The top Library pages are the homepage, Library News, Resources Online, Library Branches, and the Kids Pages.

Currently, the Library website suffers from several weaknesses. First, it is difficult to get to, requiring two clicks from the home page. Although most customers access the website through a bookmark or a search engine, it would be preferable to access the Library website directly from the City homepage.

Secondly, the constraints of the CMS, and of IT policy, make it difficult or impossible to add features or applications that would provide an interactive and rich experience to Library customers.

Thirdly, the Library's catalog system provides limited integration with the website, so that for example it is difficult to include both catalog results and other results in a search results page.

Fourthly, web analytics are difficult to evaluate because the City uses three active domains (cityofpaloalto.org, city.palo-alto.ca.us, and cpau.com) which yield separate statistics for the same pages.

Finally, due in part to the restrictions of the City website, and in part to the need to investigate and experiment with new technologies, the Library has created a handful of services on external websites (e.g. wikis, blogs, photo galleries). These are not visually

integrated into the Library website, and therefore are not adequately branded as Library services.

A more detailed web audit is in process, and will be included in the final technology plan. To date, the web auditor has produced the following summary:

The Palo Alto City Library and its community are under-served by the Library website. Difficult to locate within the city's website, the Library's portion of this website obscures valuable information and services due to barriers created by poor information architecture and serious usability issues. While the information and services currently available on the Library's website are useful, future expansion may be limited by the current web environment. As the Library builds content and adds more services, the Library will require more flexibility to meet community expectations. At the least, the existing architecture and usability problems must be addressed.

Technology Services Inventory

The inventory of current technology-based and technology-supported services is in Appendix B. The list shows high-level labor cost, non-labor cost, and benefit information for each service. The cost differentials were set as follows:

Low cost: less than \$10,000

Medium cost: \$10,000 - \$50,000

High cost: more than \$50,000

In this inventory, the Benefit column shows a subjective measure of how valuable the service is to staff and/or customers.

Apart from staff costs, the largest Library technology expenditures are contributions to the City Technology Fund (\$373,232); the SirsiDynix Horizon integrated library system (\$45,655); and (as a subcategory of the Collections budget) subscription databases and ebooks (\$100,400).

Library Staff Technology Skills

Library staff were surveyed to determine current technology skill levels. Fifty-three staff members participated, as follows:

- Managers/Supervisors (5)
- Librarians, Senior Librarians, and Coordinators of Library Programs (22)
- Librarian Assistants, Librarian Specialists, and Librarian Associates (14)
- Clerks (10)
- Administrative Assistants (2)

Technology skills were divided into several categories, including Basic Computer Skills, Hardware and Operating System, Technical Support Skills, and Web Content Authoring Skills. Participants ranked themselves on a scale of 1 (no skill) to 5 (expert). A list of questions appears in Appendix C. A summary of results appears below.

	All Staff	Management	Librarians	Library Assistants	Clerks	Admin Staff
Number Participating	53	5	22	14	10	2
Overall Skill Level	3.4	3.3	3.4	3.5	3.2	3.3
Basic Computer Skills	4.5	4.4	4.6	4.5	4.1	4.9
Hardware and Operating System	4.5	4.5	4.5	4.5	4.2	4.9
Technical Support Skills	2.7	2.6	2.6	3	2.7	2.2
Web Content Authoring Skills	1.8	1.5	1.9	2	1.8	1.1

The survey points to good basic technology skills in every employment classifications. Technical support skills need improvement, especially in those classifications that provide assistance to customers using public computing resources. Web content authoring skills are limited and will need development as the Library improves its online service offerings.

In interviews and workshops, Library staff repeatedly said they lacked time to learn, experiment, and create technology services.

Facilities

With the exception of the recently renovated Children's Library, the facilities are out of date and in need of renovation. Data closets are not climate controlled and are insecure. The age and condition of the buildings make it expensive to add additional electrical and data wiring. The recently passed bond measure will support renovations to three branches – Main, Downtown, and Mitchell Park. College Terrace is separately funded for renovation in 2009. In addition to improving the general infrastructure, the renovations will add a computer lab at Mitchell Park and meeting rooms and group study rooms in all three branches.

The Library provides wireless access to customers with their own laptops, as well as loaner laptops. This is a cost-effective alternative to adding new wiring to increase the number of public computers.

Stakeholder Interviews

In a number of stakeholder interviews (see Appendix A), several themes arose.

City IT is increasingly attentive and knowledgeable about Library technology needs. However, Library-related expertise is not evenly distributed among City IT staff, and the quality of support often depends on which technician is providing support. This is particularly true in Desktop and Helpdesk support.

Library staff are most frustrated by the constraints of the website, both as imposed by the content management system, and as imposed by City IT policy and the responsiveness of City IT staff.

The SirsiDynix Horizon integrated library system gets mixed reviews: it is stable and performs well overall, but it can be unwieldy on the staff side. In particular, technical services staff and circulation tasks complained about labor-intensive and non-ergonomic processes imposed by the inventory management features of the ILS. In addition, Horizon lacks the social networking, personalization, and advanced search components that customers want and expect.

Collection security (especially DVDs) is a major frustration for public service staff.

Many Library staff feel that they are overwhelmed and unable to find time to learn new skills and develop new technology offerings.

In general, stakeholders considered these to be the strongest and weakest technology-related services:

Strengths	Weaknesses
Catalog system (stability and performance)	Website design constraints
Online holds and renewals	Catalog system (circulation, social networking, personalization)
Email reminders	Public PC time management and printing management
Electronic resources and databases	Lack of Windows domain control for public computers
Self-check stations	Telephone system
Public Wi-Fi	DVD security system
Public PCs	Download support for Macintosh and iPod users
Loaner Laptops	Staff scheduling system
City IT helpdesk, desktop, server, and network support	Lack of staff time for learning and innovation

Customer Survey

The Library conducted a customer service survey in November and December 2008. The survey included several questions on technology services. 136 customers responded. Complete survey results are included in Appendix D.

The technology services most used by customers were:

1. Self check-out stations
2. Library web catalog
3. Renewing materials online
4. Placing holds online
5. Public computers
6. The rest of the Library's website
7. Public printers
8. Remote access to online resources

The services least used by customers were:

1. Paying fines online (note: this was a new service when the survey was conducted)
2. Library blogs
3. Personal internet tutorial
4. Staff demonstration of online resources
5. Reference questions by email
6. Reference questions by telephone
7. Downloadable ebooks
8. Online reference newsletter

The current technology services most valued by customers were:

1. Self check-out stations
2. Placing holds online
3. Library web catalog
4. Renewing materials online
5. Public computers
6. Public printers
7. Remote access to online resources
8. Wireless access in the Library

The services least valued by customers were:

1. Library blogs
2. Online reference newsletter
3. Personal internet tutorial

4. Loaner laptops
5. Staff demonstrations of online resources
6. Library news by email
7. Downloadable ebooks
8. Online events calendar/registration

Interestingly, even those services that were little used were considered very valuable or somewhat valuable by a majority of customers.

The survey also listed a number of possible new technology services and asked customers how valuable they would be. The most valuable possible services were:

1. Video downloads
2. Music downloads
3. Customer book ratings and reviews in the Library catalog
4. Podcasts
5. Reference questions by text/chat/IM

The survey provided space for customers to write in the services they would like to see. Suggestions included RFID, scanning, social networking, video editing, iPods, webcams, better Macintosh support, improved catalog searching, ebook reading devices, and software training.

Appendix 1: List of Interviews and Workshops

Library Managers
Library Public Services Staff
Library Technical Services Staff
Library Administrative Staff

Jim Keene, Palo Alto City Manager
Glenn Loo, Palo Alto City CIO
City IT staff

Library Advisory Committee
Citizens Technology Team

Marie Scigliano, Director of Technology and Libraries, Palo Alto School District
Elliot Margolies, Community Media Center
Larry Magid, Technologist
Citizens Open Forum

Appendix 2: Technology Services Inventory

Palo Alto City Library

Cost	Labor	Benefit	Type	Service	Vendor
H	L	H	Administrative	Domain services (authentication, file, print)	Microsoft
H	L	H	Administrative	Email and calendar services	Exchange
L	L	L	Administrative	Fax machines	
L	L	M	Administrative	Flatbed scanners	
L	L	L	Administrative	Graphics/publishing tools (staff)	Adobe, Microsoft, etc.
L	L	H	Administrative	Intranet	
H	L	H	Administrative	SAP	SAP
H	L	H	Administrative	Staff PCs, laptops, and office software	HP, IBM, Microsoft, etc.
L	H	H	Administrative	Staff scheduling	Google Documents
L	L	L	Public	Accessibility tools on public computers	Microsoft
L	L	H	Public	Automatic payment machines	Comprise SAM
L	L	H	Public	Bibliographic enrichment (cover art, reviews, etc.)	Syndetics
L	M	L	Public	Blogs (e.g. teens, children's services)	blogspot.com
L	L	L	Public	Book reviews	pbwiki.com
M	M	H	Public	Catalog (searching/browsing)	Sirsi/Dynix Horizon
L	L	M	Public	CD burners (on public PCs)	
L	L	M	Public	CDs and flash drives sold at customer service desk	
L	L	M	Public	Community news and obituaries	Sirsi/Dynix Horizon
L	L	M	Public	Computer classes	
L	L	M	Public	Copiers	Ricoh, etc.
H	M	H	Public	Downloadable media (books, music, etc.)	Overdrive, NetLibrary, Safari, Tumblebooks, Follett, Bookflick
L	L	M	Public	DVD players on public computers	
L	L	H	Public	Early literacy stations	AWE (http://www.awe-net.com/)
L	L	H	Public	Electronic journal list	Serials Solutions
L	M	M	Public	Electronic news (email lists)	
L	L	H	Public	Email notices	Sirsi/Dynix Horizon
L	L	L	Public	Email reference	
L	M	H	Public	Event registration	Evanced (http://www.evancedsolutions.com/)
L	L	L	Public	Foreign language display on public computers	Microsoft
L	L	L	Public	Headphones on public computers	
L	M	M	Public	ILL (Interlibrary Loan)	OCLC
L	L	M	Public	Information kiosk	Microsoft PowerPoint
L	L	L	Public	Interlibrary search	Z39.50
L	L	L	Public	Internet tutoring	Volunteers
L	H	H	Public	Internet/email Help	
M	H	H	Public	Laptop loaning	
H	H	H	Public	LINK+ (Regional ILL/delivery system)	INNREACH + Horizon custom programming
L	L	H	Public	Mail notices	Sirsi/Dynix Horizon
L	L	M	Public	Microfilm, microfiche readers	

Appendix 2: Technology Services Inventory

Palo Alto City Library

Cost	Labor	Benefit	Type	Service	Vendor
L	L	H	Public	Microsoft Office (on public PCs)	Microsoft
L	M	H	Public	New books lists	Alpha-G / Wowbrary
L	M	M	Public	Newsletters	
L	L	H	Public	Online account management	Sirsi/Dynix Horizon
H	M	H	Public	Online databases	Various
L	H	H	Public	Online holds	Sirsi/Dynix Horizon
L	M	H	Public	Online materials purchase requests	LassoSoft Lasso
M	L	H	Public	Online payments	Envisionware
L	L	L	Public	Online photos	Flickr
L	L	H	Public	Online registration	
L	L	H	Public	Online renewals	Sirsi/Dynix Horizon
L	M	H	Public	PAHA (Palo Alto Historical Association) database	ContentDM
L	M	H	Public	Public computer time management	Comprise SAM
M	H	H	Public	Public computers	
L	M	H	Public	Public printing management (color and black & white)	Comprise SAM
L	H	H	Public	Public website	Civica (http://www.civicasoft.com/)
L	L	M	Public	RSS feeds (mainly kids and teens blogs)	Feedburner
M	H	H	Public	Self-check stations	Libramation
L	L	M	Public	Telephone renewal	Sirsi/Dynix Telecirc
L	M	H	Public	Wi-Fi printing	
L	L	H	Public	Wireless access in libraries	
H	H	H	Supporting	Acquisitions Tools	OCLC Connexion, B&T Titlesource, etc.
L	L	M	Supporting	Barcode duplicator	ID Recall Systems
L	L	H	Supporting	Barcode scanners	Metrologic, etc.
M	M	H	Supporting	Catalog (circulation, acquisitions, etc.)	Sirsi/Dynix Horizon
L	L	H	Supporting	Custom collection reports	Alpha-G
L	L	H	Supporting	Database use statistics	Serials Solutions
L	L	L	Supporting	Digital cameras / video cameras	Flip, etc.
L	H	M	Supporting	DVD security	
L	L	L	Supporting	Electronic database web-based training	vendors
L	L	M	Supporting	Microsoft Office training (for staff)	City IT
M	M	H	Supporting	Offline circulation module	Sirsi/Dynix/ PC Reliance
L	L	H	Supporting	Online surveys and forms (e.g. summer reading signup)	LassoSoft Lasso
L	L	M	Supporting	People Counters	
L	L	L	Supporting	Projector	
L	L	M	Supporting	Public Address system	
L	L	H	Supporting	Public computer security	Microsoft SteadyState, Public Web Browser
L	L	H	Supporting	Receipt printers	Epson, etc.
L	L	L	Supporting	Security Gates	Checkpoint
L	L	M	Supporting	Web analytics	WebTrends (via City IT)

Appendix 3: Staff Technology Skills Survey

The Staff Technology Skills Survey included the following questions. Aggregate results appear in parentheses, where appropriate.

1. Which describes your job category most accurately?
2. Which is your primary location?

For each of the following activities, rate your skill on a scale of 1 (no skill) to 5 (expert).

3. Create, format, save, print, and open a document using word processing. (4.2)
4. Send, receive, read, and respond to e-mail messages. (4.5)
5. Attach files to e-mail and read files received as attachments. (4.4)
6. Print, save, and delete e-mail messages. (4.6)
7. Retrieve a deleted e-mail message. (4.2)
8. Get to a website when you know the address. (4.8)
9. Follow a link on a web page. (4.7)
10. Identify links previously used. (4.2)
11. Use browser functions of back, forward, stop, and reload. (4.6)
12. Bookmark a website for easy return. (4.3)
13. Turn on and log in to the computer. (4.8)
14. Find, open, and close a program. (4.6)
15. Find, open, and close a file from within a program. (4.5)
16. Switch to another running program. (4.5)
17. Switch to another window within a program. (4.4)
18. Move and resize a window. (4.5)
19. Scroll through a document. (4.7)
20. Double-click, right-click, drag and drop with a mouse. (4.5)
21. Choose a dialog box option. (4.0)
22. Create, rename, and delete files and folders. (4.4)
23. Move and organize files. (4.1)
24. Shut down the computer. (4.8)
25. Add paper, change ink cartridge, clear paper jam in printers. (4.0)
26. Locate on/off switches on all equipment in your work location. (4.4)
27. Identify data cables and power cords on all equipment in your work location. (3.6)
28. Identify all installed equipment, including the network name for each device. (2.8)
29. Know how to reboot all equipment. (3.6)
30. Find and change configuration and network settings in Windows. (2.5)
31. Install and configure printers. (2.8)
32. Install and configure other peripherals. (2.4)
33. Know how and when to use system maintenance tools, for example to defragment disks, scan for viruses, and scan for adware. (2.3)
34. Troubleshoot network problems to isolate a problem. (1.9)
35. Add or remove a device from the network. (2.0)

-
36. Understand basic computer and networking terminology to communicate effectively with vendors. (2.5)
 37. Install and uninstall software on workstations and servers. (2.2)
 38. Configure desktop security on public access PCs. (1.5)
 39. Perform data backup and restore data from backup. (1.8)
 40. Create a web-page using authoring software like DreamWeaver, FrontPage, etc. (1.4)
 41. Create a web-page using a text editor like Notepad or Wordpad. (1.4)
 42. Create and edit CSS (cascading style sheets) in web-pages. (1.2)
 43. Upload web-pages to, and download web-pages from a web hosting site. (1.6)
 44. Set up a new blog using a hosted service such as blogger.com or wordpress.com. (2.4)
 45. Post to a blog using a hosted service such as blogger.com or wordpress.com. (2.8)
 46. Upload photos or videos to a hosted service such as flickr.com or youtube.com. (2.8)
 47. Install a bookmarklet or a web-browser add-on. (1.7)
 48. Edit or "tweak" javascript, PERL, PHP, or Python code to change the behavior of a web page or application. (1.1)

Palo Alto Public Library

Website Assessment

February 26, 2009

Brandon A. Barnett
Brainy Broads
Portland, Oregon

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Executive Summary

The Palo Alto City Library and its community are under-served by the Library website. Difficult to locate within the city's website, the Library's portion of this website obscures valuable information and services due to barriers created by poor information architecture and serious usability issues. While the information and services currently available on the Library's website are useful, future expansion may be limited by the current web environment. As the Library builds content and adds more services, the Library will require more flexibility to meet community expectations. At the least, the existing architecture and usability problems must be addressed.

Web Audit and Assessment

General Access

The "search, don't sort" mantra put forth by Google summarizes Internet users' growing preference to quickly search for needed information rather than trying to organize and maintain individual storehouses of data. This concept is important to bear in mind not only for how a website is built, but also for how it is found by your user in the first place. A user is less likely to utilize bookmarks and more likely to Google to find and visit websites, even those he uses regularly.

When searching for Palo Alto City Library, common search terms yield different possible results, which is confusing to the user. One official, correct URL should be agreed upon and then propagated using SEO (search engine optimization) techniques. However, a better solution is to obtain a library-specific domain name, such as paclibrary.org, and use that for promotional purposes and easy-to-remember identification for users. A library-specific URL is commonplace across the nation for libraries of all sizes and types.

Otherwise, the user (patron) isn't sure which link is the correct one and may end up on any one of a maze of webpages where, in the case of the Palo Alto City's website, the webpage architecture gives no clear idea about where he is and how to get where he wants to go.

In terms of stability and performance, the website as a whole responds very quickly on broadband Internet access and comparatively well on dial-up. The website design needs improvement, as outlined below, but is rendered consistently across platforms and web-browsers.

City Website

Within the City's website, it is very difficult to locate links to the Library. Although the Library is an integral part of living, business, arts, and recreation in the vibrant community of Palo Alto, the Library cannot be found under any of those sections of the City's website. While activity-based web navigation (e.g. "living," "working") can be useful for a web user, the City's labels are not consistent, secondary navigation (necessary for understanding and ease of movement) is lacking, expected content is not found, and existing content is a poor reflection of any of the department's activities and information. Much of the specifics of problems outlined below for the Library sub-site are functional problems inherent in the overall site design, so I won't repeat them here.

Users who arrive on any City web page from search results elsewhere have a difficult time understanding where they are on the site and how to get where they want to go. If

they want to go to the Library, the obvious choices are not the correct ones, and the one correct choice isn't obvious.

The purpose behind the "Text Version" link which appears on every webpage is not clear. If it's for ADA compliance, the resulting page is not ADA-compliant. If it's for mobile technology such as a cell phone, then it's not useful since it only lists links, all of which point back to the main "Graphics Version" website.

Library Website

There are several overall usability concerns with the website. First, while the color palette is professional and sleek, it's more appropriate for a financial institution, not a welcoming, dynamic library. Furthermore, the colors are dark and have low contrast, making it difficult to read for any user but especially for seniors, those who are color-blind, and those who have vision impairments. Second, the text is too small. Third, the website's coding does not allow a user to utilize his web-browser software's ability to adjust text size. Finally, the website coding does not allow the page to re-size according to window size, which causes horizontal scrolling. Reported as one the most annoying user experiences, horizontal scrolling is particularly problematic when a website's design puts the majority of its content in the right-hand panel (the area obscured) as does this website.

The City of Palo Alto graphic occupies prime real estate on each webpage. The upper left-hand corner and the upper center are the areas that naturally draw a user's eye and therefore provide a rich space for opportunity. The City graphic is too large, taking up the best space, and yet serves no function other than as a "home" button. Nothing in this prime area or by any other overall visual cue indicates to the user he has found the Library's website.

Through the font size and color choice, the City's navigation bar ["Home | Living " etc.] is correctly discreet but still confusing because some terms, such as "KnowZone," sound like Library services. The separation between City navigation and Library navigation is not as clear as it could be, making it too easy to click the wrong way and become lost.

The Library navigation bar ["Library Home | Previous Page" etc.] raises a few concerns. First, a website, even if it's a sub-site of a larger organization, should always have consistent navigation, the same words meaning the same thing and in the same place; otherwise, it becomes difficult for the user to find his way and feel confident about using the website. The Library navigation bar changes from page to page, the words changing and moving within the bar.

The labels raise some questions. First, "Previous Page" is unnecessary. Users make liberal and instinctual use of the web-browser's button. In-page "back" functions should only be employed for a specific reason, such as an embedded application which would be disrupted by the web-browser's Back function. Here, it's an unnecessary gimmick that uses valuable space and serves no purpose.

Second, three labels are devoted to what could be together called youth services. The over-representation of youth services in the navigation is appropriate if it's the result of Community Analysis. But recent census figures for Palo Alto show that only roughly a third of households are families with children/teens. It would be interesting to compare that to library usage. Other demographic groups are heavy users of the Internet, such as 30's professionals and active 55+; a navigation system based on demographic groups should perhaps be more representative.

The yellow Library navigation bar is primary navigation for the Library's sub-site of the City's website. However, a sub-site of this size, with a range of content and services, needs standardized secondary and possibly tertiary navigation. Each section, whether "Kids" or "Resources," needs to be able to direct users to specific content and services within its section in a meaningful and consistent way that doesn't leave the user lost in the site. The current secondary navigation is haphazard, accomplished via several subset menu lists that are not ordered in any manner and appear to be placed wherever there happened to be free space on the page.

The architecture of each Library webpage relies on a layout scheme using panels. Paneled (or, "columnar" because it was borrowed from newspapers) layout can be very effective if the space is used well. It's an excellent way to arrange large amounts of information -- navigation, decorative elements (such as photographs), content, and links to services -- compactly so as to keep what's important "above the fold." The fold is the point at the bottom of a webpage where a user must scroll down to see any additional information. Panels also help provide a uniform look and feel to a website, although they also are therefore less flexible. Generally, a paneled layout is employed at the top levels of a website, while a more flexible structure is used at lower levels where the webpages are both more content-rich (needing more space) and less standard (needing more flexibility).

Unfortunately, these panels are not used well. At the most basic level, important information is pushed below the fold, defeating a key reason to use paneled layout. First, the left panel contains a small non-communicative graphic, which serves no function, the word "library" in a thin, large font, surrounded by too much "white space." This space instead could hold useful information, secondary navigation, or provide a space to pull the 'branch location' box up towards the top of the page. While it's good to have the addresses easily available, the link style of the names implies a link to the branch profile. Again, a user expectation met with defeat causing confusion and frustration. Though a small point, each small point adds up. The branch box is persistent across many pages and isn't perhaps the best use of space on every page. The "Branches" section of Library navigation may be sufficient past the main page.

Second, the middle panel provides a welcoming and friendly photograph, but again would be a better use of the space if it were smaller and more useful if it linked to the author event rather than the catalog record. The welcome paragraph below the photograph, which at first glance confusingly reads like a caption, could be removed. Users are more apt to skim for needed information, especially on a main page, rather than

read paragraphs of text. The adage "show me, don't tell me" applies to the Web too. Show your user he's welcome, show your user what the library can do for him, don't tell him.

The calendar is a good feature though stylistically it's rough, lacking visual and functional integration with the Library website, and doesn't appear consistently throughout the site. As the panel layout and secondary navigation are reconsidered, the calendar could become a more consistently available feature. Below the calendar is another menu of links, all pointing to popular tasks often used by patrons. This information should be part of the navigation or at least more prominently featured than at the very bottom of the webpage, far below the fold. The logical grouping behind this menu is unclear when compared with the "News" list and the "Featured" list in the right panel.

Third, the right panel appears to be a haphazard catch-all for information that otherwise has no home on the Library website; much of it is timely and useful but some is repetitive. The lists are very text heavy, which is off-putting to users. As mentioned before, users don't read, they scan. Also, because of the website coding, this panel is partially and sometimes wholly obscured by horizontal scrolling.

It would be best to re-arrange content and adjust the coding so that the panels are used better, and to loosen the panels on secondary and lower-level pages. Otherwise, it appears that content creators have to work around them in odd ways, which is frustrating for the content creator and for the user who deals with the output.

Additionally, there are several ways to perform a search on each page, which are not clearly marked and are in some cases repetitive. It's very confusing for the user not knowing whether the search covers the catalog, the Library's website, the City's website, some combination, or even the Internet as is sometimes offered on other websites. Search is an important feature, particularly for a library, and should be clearly labeled and placed better on the Library's website.

Finally, since a library's website often doubles as the interface for the Public Access Computers (PAC), it is especially important that the website be designed in such a way that it makes sense as a multi-purpose interface. Addressing the usability problems outlined in this report will help accomplish that goal. But, also, flexibility of the design is vital so that areas intended for specific users can be tailored to their needs. This is true whether the website stands alone or also acts as a PAC interface; it is especially true for kids and teens.

Children and teens of today (not to mention tomorrow) are digital natives. They use digital interfaces in ways that are like breathing to them, acts that are instinctual and unnoticed. The areas of the Library's website intended for their use have different needs. Those needs can be met and yet still stay in compliance with overall standards, if those standards are designed with flexibility. For example, studies of children's and kids' developmental stages show they respond to brighter colors and engaging visuals. A

website palette can be developed which includes colors in various hues and saturations to meet different needs yet still maintain a unified look.

Teens, on the other hand, are painfully cognizant of anything that appears to tie them to childhood. Hence a "kids" interface will be rejected. Teens need a digital space and services which give them an opportunity to practice being adults, yet still be fun, such as: sharing reviews of books, music, and games; forming their own groups (see the Palo Alto Teen Library Advisory Board on Facebook); asserting their opinions through voting and polls. A teens' interface can look like the adult/general interface as long as there is some unique twist that makes it their own, such as a slightly different graphic -- perhaps one they designed and voted on in a contest.

Library Catalog

The current ILS software for Palo Alto City Library is one which receives limited support from its vendor in terms of new development. Library goals regarding both greater integration of ILS functions within the Library website, and creating a seamless experience for the patron between the ILS and the website will be difficult to meet without individual Library/IT-created customizations or a new ILS. The current practice of cross-linking between the two is a kludge but the best one under the circumstances. However, short of moving to a new ILS, the Library could consider a "discovery layer," which would provide a unified look and more sophisticated searching tools. This is a third-party software solution which requires implementation with significant resource costs involved, both in terms of funding and staffing. As a current customer of Serials Solutions, the library may find the new Summon product worth investigating once it's fully available.

Summary and Next Steps

The Palo Alto City Library website contains useful content and links to important services, however poor information architecture and usability problems make it difficult to access this information. Valuable page space is misused, navigation is poor, and the visual presentation is generally unwelcoming. In moving to correct these problems and plan for future needs, the Library should consider the specific suggestions but, more, look to answer larger, general but important questions. What is the philosophy of service for the website: an electronic brochure or a virtual branch? Is the website a reflection of services offered to the community? How does the community need and want to engage with the website; what are their expectations?

Although some of the specific problems mentioned in this report have quick fixes, going forward it is critical that the Library conduct a Community Analysis and perform usability exercises. This may sound like a daunting task but even a small effort can yield enormous rewards. Even simple, brief exercises can yield "light bulb" moments which are as telling as complete and comprehensive data sets. Ideas and tools include:

Survey - Use free survey software, such as Zoomerang [<http://www.zoomerang.com/>] or SurveyMonkey [<http://www.surveymonkey.com/>] to poll users about key questions. Take advantage of captive audiences and conduct brief surveys at library events. Ask partner organizations how the website can better meet their needs and the needs of their clients/customers.

Statistics - WebTrends provides limited, general data but is most useful in conjunction with other data. Google Analytics and CrazyEgg, both of which require that code be added to Library webpages, provide a complete pick of how users move not only within a site but within a webpage. Compare these web statistics with data collected from catalog usage and activities at library locations.

Usability - A usability exercise can be as simple as asking a few patrons to complete 3 simple tasks or conducting a small focus group. Utilize existing groups, such as a teen council or senior computing class, for this purpose.

Scan - Patrons are talking about the Library online and in social networks; listen to what they're saying.

These activities alone will raise awareness for patrons, bringing those who frequent the branches to the website and those who frequent the website to the branches.

Suggested Changes and Additions

- Obtain and promote library specific URL
- Add context-appropriate Library links to more areas of the City's website
- Reconsider goals of Text Version webpages and determine if those goals are being met
- Correct website coding to allow users to choose text size
- Correct website coding to avoid horizontal scrolling
- Consider a color palette with lighter colors and better contrast; one that reflects Library's philosophy of service
- Add obvious Library indicator to prime "reading" position of webpage; some ideas are:
- Reduce size of City of Palo Alto graphic, use saved space to add "Library"
- Allow color palette to shift between departments/sections - this can be accomplished while still maintaining a unified look for the whole site
- Standardize Library navigation, remove "Previous Page" and reconsider labels to more accurately reflect the community and variety of content & services offered
- Establish consistent and useful secondary navigation for distinct areas of Library website; incorporate ad hoc menu groupings where sensible
- Shift content in panels to make better use of space; loosen rigid panel design on lower-level pages

- Add links to branch profile pages to the branch address box; consider whether that box needs to be on every page
- Review ad hoc menu groupings; shift items into secondary and sub navigation or otherwise find consistent and meaningful 'home' for information
- Streamline search features; reconsider placement and labeling
- Consider audience-specific needs in web areas meant for that audience, e.g. a developmentally-appropriate color scheme and engaging graphics for kids, and inclusive and empowering services for teens
- Long term goals regarding the ILS should take web integration into serious consideration
- Consider possibility of implementing discovery layer
- Conduct Community Analysis and usability exercises to determine best practices for Palo Alto community before making major changes to the Library website.

Online Services

Current Services

Calendar: The calendar of library events has extra features such as an RSS feed and a personalized schedule. This is a useful application that would benefit from better integration with the Library website, giving it a look and feel common to the website, including navigation, and making it more consistently available throughout the site.

Paying fees online: Excellent, convenient service, but not easy to find on the site and would benefit from being linked from the catalog where patrons see their fines.

Blogs: A blog is a good way to be interactive with a community, though they are often treated as another broadcast medium rather than a forum. The "For Adults" blog "PACL Reference & Resources" contains interesting, fun, well-written content. This excellent example of a professional blog should be front and center on the Library's website. All the blogs are nearly impossible to find on the website.

Suggested Services

Reference service: Public libraries have been providing online reference by email and webform for over a decade. Most have moved on to a chat and/or Instant Message (IM) service.

Homework help: Most public libraries provide a webpage(s) of resources aimed at assisting youth with homework assignments. Here, the 'Homework Help' links point to the "Resources Online" section of the website. While the Library provides descriptions of the databases that are better than most libraries, an online collection target at Youth

would be better. Many libraries contract with an online tutor service such as Tutor.com or BrainFuse.

Staff picks: Personalizing a website by showing the people behind the face of the library provides users with a feeling of connection and builds trust. A feature of the staff's favorite books or DVDs is one way to do this; it's also another way to provide that traditional library service known as Reader's Advisory.

RSS: While the Library's blogs do have a built-in RSS feature, pushing content such as staff book and DVD picks via RSS is a well-liked service. A cursory scan of Internet chatter revealed that patrons particularly like Palo Alto City Library's DVD collection. Tapping into that preference would be a good way to make a connection between the community and the website.

Podcast: Some libraries are offering podcasts of library events, especially ones that lend themselves well to an audio environment such as an author lecture or book talk.

Facebook: Palo Alto Teen Library Advisory Board already has a group on Facebook, which was used more as a call for applications than as an interactive group. This group could be the beginning of an interactive presence in Facebook for teens and adults. The few libraries who tried MySpace did not find it a successful experience, but the multi-faceted privacy controls of Facebook is attracting a more mainstream audience. Nearly 60% of Facebook's growth in 2008 was in the 35-44 demographic.

Digital collection: Palo Alto City Library has an impressive digital collection. Leverage this collection through better promotion and access. One possibility is expanding the Serials Solutions 360 Core service into the 360 MARC service which would allow title information and online access to be available through the catalog. Utilize the databases more often in the blogs.

Polls/Factoids: Add an element of fun to the Library's website with polls and quizzes, for example, list three topical books, ask which one the user would like most to read, provide a link to the catalog records. Offer a "Did you know" fun factoid that promotes the library, such as "Mitchell Park circulates x item per square foot" or "35% of library staff speak a second language."

Twitter: Twitter, a real-time notification system that uses both the Web and cell/smart phones, is gaining momentum among libraries as geek-friendly communication tool, but given its constant, frenetic nature it can be overwhelming to users if a library sends too many updates. Finding the niche for this tool isn't easy, but as its developers continue to improve upon the interface, some exciting opportunities could open up. Twitter is one to keep an eye on but not act on just yet.

Summary

Palo Alto City Library has taken steps to provide online services that offer more than the typical online catalog and basic information about the library. Although these services are not integrated well with the Library website, they are important to users, increasingly expected by the digital community, and provide enriching opportunities for staff who participate. As the role of libraries in a community shifts, these kinds of services add to the livability of a community and show the importance and continued relevancy of the library. Users will have a better experience if these services are a seamless part of the Library website, or at least appear to be. The Library website needs a flexible support infrastructure to provide these and more services and to be dynamically proactive to meet community expectations.

Palo Alto City Library
Technology Plan

Appendix D: Project Budget and Timeline

Project	Task	Duration	Description/Notes	Initial Cost Non-Labor	Ongoing Cost Non-Labor	Initial Labor (hrs.)	Ongoing Labor (hrs./yr.)
RFID/AMH				1,253,000	65,250		
	Vendor selection	12 wks.					
	Weeding	5 wks.					
	Tagging	27 wks.				2817	
	Equipment	13 wks.					
	AMH at Children's	8 wks.					
	AMH at Mitchell	12 wks.					
	AMH at Main	14 wks.					
	Security gates decision	10 wks.		210,000			
	Training	6 wks. (concurrent)	15 staff receive 4 hrs training; six staff members receive additional 8 hrs "lead" training; 15 staff receive 2.0 hrs. refresher training per year.			108	30
	Quarterly review	1 wk.	Gather statistics, 8 hrs.; review statistics, 4 hrs x 4; report 4 hrs.				128
	Ongoing Labor Savings						-7365
	Totals:	102 wks.		1,463,000	65,250	2,925	-7,207
Website Enhancement							
	Project management	4 wks.				40	
	Consulting RFP	8 wks.				40	
	Conduct focus groups	8 wks.		15,000		32	
	Participate focus groups	1 wk. (concurrent)				12	
	Design phase	4 wks.	Consultant time only.				
	Approve and implement	8 wks.				56	
	Liaison to City/City IT	12 wks. (concurrent)				40	
	Totals:	32 wks.		15,000		220	

**Palo Alto City Library
Technology Plan**

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Online Branch Project							
Web Reference	Project management	4 wks.				120	
	Software selection	4 wks.				40	
	Software procurement	2 wks.		1,200		8	
	Software install	2 wks.				16	
	Software training	2 wks.	20 staff members x 2.0 hrs.			40	
	Web reference service		Include 4 hrs. during library open hours, 4 hrs. of previously unstaffed time.				8
Staff Social Network							
	Social network selection	7 wks.				20	
	Social network procurement	1 wk.		60		4	
	Social network install	2 wks.				24	
	Social network training	4 wks.	60 staff members x 2.0 hrs.			120	
	Social network management		4.0 hrs./wk.				208
Public Social Network							
	Social network selection	7 wks.				40	
	Social network procurement	1 wk.		1,000		8	
	Social network install	2 wks.				40	
	Social network testing and configuration	8 wks.				80	
	Social network training	8 wks.	60 staff members x 2.0 hrs.			120	
	Social network management		4.0 hrs./wk.				208
Totals:		54 wks.		2,260		680	424

**Palo Alto City Library
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Next-Generation Catalog Applications							
	Project management	4 wks.				120	
	Consultant RFP	8 wks.				40	
	Needs assessment	4 wks.		10,000		120	
	System evaluation and selection	8 wks.		5,000			
	System procurement	4 wks.		36,000			
	System implementation	12 wks.				80	
	Staff training	8 wks.	60 staff members x 4.0 hrs.; additional 1.5 hrs. training per year			240	90
	System management						20
	Totals:	48 wks.		51,000		600	110
Microform Digitization							
	Project management	2 wks.				40	
	Purchase master copies	2 wks.	25 reels @ \$88/reel	2,200		8	
	Select digitization vendor	4 wks.				40	
	Digitization and OCR	4 wks.	25 reels @ \$180/reel	4,500			
	Upload and catalog	12 wks.				160	
	Hosting	2 wks.	e.g. ContentDM unlimited license plus 1 TB mirrored disk space	32,000		4	
	Totals:	26 wks.		38,700		252	

**Palo Alto City Library
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Podcast/Videocast							
	Project management	4 wks.				80	
	Contract professional services	2 wks.				16	
	Library Tour video scripting	4 wks.				24	
	Library Tour video	2 wks.	1 half-day filming, 4 hrs. editing, 5 min. encoding	640		24	
	Major Event videos	8 wks.	2 x half-day filming, 2 x 2-hrs encoding	1,330		6	
	Storytime videos	12 wks.	12 x 1-hr. filming, 12 x 1-hr. encoding	4,080		24	
	File loading	(concurrent)				28	
	Statistics and feedback	2 wks.				16	
	Totals:	34 wks.		6,050		218	
Customer Tutorials							
	Project management	4 wks.				40	
	Software procurement	2 wks.	Initially, two Jing Pro licenses @ \$15/yr.	30		4	
	Software training	4 wks.	Onsite and/or online training for two staff members, plus self-training time	1,600		48	
	Tutorial creation	2 wks.	4 tutorials @ 4 hrs. each			16	
	Editing software (optional)		Camtasia Studio, 2 licenses @ \$250	500			
	Totals:	12 wks.		2,130		108	
Download Stations (four branches)							
	Project management	2 wks.				20	
	Research & development	4 wks.				16	
	Procurement	2 wks.	Four standard PCs, five download devices	6,850		8	
	Staff and volunteer training	4 wks.	20 staff members @ 1.5 hrs.			30	
	Ongoing support		5 hrs./wk.		1,700		260
	Totals:	12 wks.		6,850	1,700	74	260

**Palo Alto City Library
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DVD Security System							
	Project management	4 wks.				80	
	Needs assessment	2 wks.				20	
	Onsite trial and evaluation	12 wks.				32	
	Selection	4 wks.				40	
	Procurement and installation	4 wks.		32,000		24	
	Staff training	2 wks.	4 staff members @ 1.0 hrs.			4	
	Ongoing support		(net zero)		4,800		
	Totals:	28 wks.		32,000	4,800	200	
Meeting Rooms (three buildings)							
	Project management	1 wk.				22	
	Selection and procurement	2 wks.	Management PC, electronic whiteboard, projector, video camera, web-conferencing system	21,000		22	
	Staff training	1 wks.				22	
	Ongoing support						312
	Totals:	4 wks.		21,000		66	312

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Project	Task	Duration	Description/Notes	Initial Cost Non-Labor	Ongoing Cost Non-Labor	Initial Labor (hrs.)	Ongoing Labor (hrs./yr.)
ILS Upgrade/Migration							
	Project planning	4 wks.				40	
	Project management	(concurrent)				240	
	Market survey	16 wks.				160	
	Conduct needs assessment, write RFP, collect proposals	28 wks.				120	
	Select system	12 wks.	Assumes 8 staff, 6 proposals, 4 hrs. per proposal			192	
	Procurement	4 wks.	Hardware, software license, data migration, implementation, customization, training	350,000		32	
	Data Migration	8 wks.	1 staff acting as business analyst			40	
	Implementation, customization, testing	8 wks.				160	
	Staff training	4 wks.	100 staff @ 4 hrs. each			400	
	Totals:	84 wks.		350,000		1384	
Contingency Budget							
	Hardware, software, services			5,000			
	Totals:			5,000			