

12-2004

## **Pursuing a Return on Technology**

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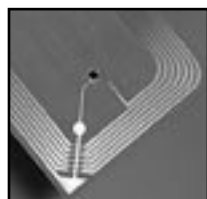


MARY WISE

# Pursuing a Return on Technology

While most of us find it hard to keep up with the latest technological trends, some libraries—out of necessity or due to inspiration—have “seized the nettle.” Two sessions at the WLA/PNLA Joint Conference, “Emerging Technology and Libraries” and “Bringing Library Content to the Palm of Users’ Hands,” emphasized ways in which some of the newer technologies are benefiting library users and staff today.

“Emerging Technology and Libraries” began with a little background on Seattle’s highly-publicized new Central Library which opened in May 2004. Seattle Public Library (SPL) staff knew that having the 412,000 square foot building would mean conducting more far-flung operations and welcoming more visitors, all without a corresponding increase in staff. So the library’s planners looked at other libraries’ use of innovative technologies and decided which of these might create more efficient operations at SPL.



## RFID-based Automated Materials Handling

SPL’s director of information technology, Marilyn Sheck, said that one technological tool library planners found attractive was radio frequency identification (RFID). They concluded that RFID tags, if used along with an auto-

automated materials handling system (AMHS), could make sorting and routing returned materials far more efficient not only for the Central Library but also for Seattle’s twenty-three neighborhood libraries. Tech Logic Corporation ([www.tech-logic.com](http://www.tech-logic.com)) was selected as the AMHS vendor. Less than a month after being activated, the AMHS had proven its worth by clearing the perennial shelving backlog in the entire twenty-four-library system.

SPL’s Tech Logic AMHS can sort all library materials except magazines and kits. Marilyn Sheck showed a film of the sorting process. Materials are dropped into one of four book drops at the Central Library and travel through a series of conveyor belts to the main sorting room located on the second floor. Sensors read the RFID tags. The system separates materials for the Central Library from those destined for the neighborhood libraries, with the latter being sorted into bins by destination. (Further manual sorting occurs at the neighborhood libraries.)

The AMHS “HiIQ” component then continues working on the materials to be reshelved at the Central Library. It squares and cen-

ters items on the conveyor belt. Next, a binding-detection device opens the book to determine the location of the binding and reorients the item (if needed) in preparation for automated shelving onto book carts. Uniformly located, items then move along by conveyor to the book-cart area, where the items are deposited by air-driven placer arms—in shelf order, binding out—on one of twelve “smart” book carts. When a book cart is full, a staff member rolls it away and shelves the books in the public area of the library.

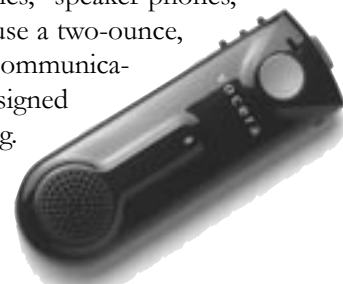
Since the Central Library opened on 23 May 2004, circulation has increased 57 percent. The AMHS sorts materials much faster than employees ever could, while eliminating a main cause of repetitive strain injury at the library. The system is currently monitored by employees in three shifts, although the number of shifts may be reduced in the future.

In consideration of privacy concerns, planners chose RFID tags with the smallest storage capacity. These simple tags, which contain no source of power, are compatible with most data bar codes and do not carry enough information to track usage of an item once it has been checked back in. To be read, the tags must be within eighteen inches of a RFID reader.

With a bar code-based AMHS, bar code labels need to be in the same location on all library materials (many of SPL’s bar code labels did not comply with this requirement). RFID labels, however, can be placed anywhere in the book. SPL staff converted regular bar codes for two million items to RFIDs, with all staff participating in the conversion task in one-hour shifts to avoid task burnout.

## Wireless Voice Communication

In its new building, SPL has dispensed with cell phones for staff communication—also walkie-talkies, in-building wireless phones, speaker-phones, and pagers. Instead, staff use a two-ounce, pager-sized, no-hands communications badge originally designed for use in a hospital setting. A wireless network that runs on its own dedicated server supports use of this communications sys-



Mary Wise is a catalog librarian at Central Washington University Library. Photos in the righthand panel on p.7 are by Cameron Johnson. Badge photo at right courtesy of Vocera Communications.

tem for all staff at the Central Library. The badges, a product of Vocera Communications, are controlled with natural spoken language and can be used for a wide variety of communication functions.

Marilyn Shek and communications consultant Ray Negrin gave a brief demonstration of the Vocera badge's features. The two presenters showed they could have a private conversation with each other, conference with a group of people, leave voice mail messages, receive brief text messages, call external telephone numbers, and receive telephone calls—all with their badges. The badges are interchangeable, with staff needing only to “sign-off” or “sign-on” with any particular badge.

The badges are light enough to be worn about the neck, are convenient to use, and allow flexible staff interactions. SPL staff members can have mini-meetings without having to gather in the same location and can quickly locate each other in the Central Library's “book spiral” (the multi-floor area where the non-fiction books are shelved). Or, if a patron is asking questions at one service point, the staff member there can immediately speak with the staff member most likely to be able to help, no matter where that person might be in the building.

### Resource Scheduling and Control

Controlling public use of the Internet and networked printers is a ubiquitous need in libraries these days. Melinda Chesbro, director of information technology at Fort Vancouver Regional Library (FVRL), talked about FVRL's experience with implementing Smart Access Management (SAM) from Comprise Technologies.

The library required a flexible and stable system that would reduce the amount of staff intervention required for scheduling Internet terminals and taking care of printers, and that would support the library's printer and Internet policies. Chesbro reported that SAM is easy to use for patrons—who use SAM to make their own reservations for using the Internet and to pay for any printing beyond the ten pages per day limit—as well as for staff, who use SAM to enable visitor use of Internet terminals. SAM turns the computers off when the libraries close, controls the navigation depth on selected websites, and can filter Internet traffic in compliance with the Children's Internet Protection Act (CIPA).

SAM's use has reduced patron printing by 160,000 prints per year (library staff members report most users leave after printing their ten free pages). SAM's Internet, computer session, and print management package includes other

features, too; for example, it could be used to control the number of photocopies made. However, implementing SAM has meant a lot of changes for staff to absorb in a short period of time, said Chesbro, who recommended a gradual implementation. She said that SAM's filtering system at FVRL had to be switched three different times before it was right.

### Personal Digital Assistants

Denise Koufogiannakis, speaker for the conference session called “Bringing Library Content to the Palm of Users' Hands,” is the collections manager at the University of Alberta's John W. Scott Health Sciences Library. Several years ago, Koufogiannakis observed that many students were using personal digital assistants (PDAs) in the library, so she decided to look into the possibility of serving information to the library's patrons through these handheld devices.

Koufogiannakis began by exploring why people would want to use a PDA. What she discovered was that PDAs are portable, easy to use, relatively inexpensive, and can do more than just organize personal information. PDAs can hold substantial quantities of current information that can be updated easily from a computer network or desktop computer (typically the data is “beamed” through an infrared port on the PDA). PDAs can also hold quick reference information, e-books, and medical calculators (software for performing common computations in clinical practice). PDAs can communicate with printers that have infrared ports, and some can even be connected to a projector for classroom demonstrations. The PDA's ability to synchronize with other computers allows uploads and downloads of a wide range of information. Finally, there exist PDA-friendly Web page formats such as RSS (Rich Site Summaries, also known as Really Simple Syndication) which feed current information to PDAs from the Internet.

The case for PDA services in the library was clear, and soon the health sciences library website for PDA users—the PDA Zone, [www.library.ualberta.ca/pdazone](http://www.library.ualberta.ca/pdazone)—was born. The library decided to provide PDA services solely to people who already have the devices, and it was ready to offer these services (including one-hour training sessions) to patrons by fall of 2001.

Some of the information services offered through the PDA Zone website are licensed. Koufogiannakis discussed several licensing models and opined that the institutional site license was the best option. Three of these licensed services are NetLibrary (allows downloading of e-books to a PDA), PEPID (Portable Emergency and Primary-Care Information Database), and MD Consult.

PEPID is an online subscription service that offers “all-in-one” point-of-care medical reference tools

*Denise Koufogiannakis: Delivering consultations, journals, reference books, and medical calculators to PDAs. Photo by Mary Wise.*





**From left:** Marilyn Sheck, Melinda Chesbro, and Ray Negrin. Sheck described SPL's AMHS, shown below. **Clockwise from bottom:** Book drop at 4th Avenue entrance. Conveyors. Binding detection device. Placer arm pushing book onto "smart" cart. A row of smart carts docked on the AMHS.

which include a reference textbook, a drug handbook, and 140 medical calculators. PEPID is organized into versions for nurses, pharmacists, medical technicians, and other clinical specialties. The University of Alberta received PEPID under a one-year trial grant. Users gave enough positive feedback during the trial period that the library renewed PEPID for two more years. Over 600 people at the university now use PEPID.

MD Consult is a product with which users can search journals. Users can periodically download summaries to their PDA, and titles for lending are loaded onto expansion cards that can be inserted into a slot on the PDA. The price for the electronic subscription is comparable to paper, but relatively few titles are available in this format as yet.

Other kinds of resources accessed through the PDA Zone include tutorials, opportunities for health care providers to consult with librarians, and a website called AvantGo which contains current medical materials. The university also has a PDA users' group called the Mobile Computer Users Group.

Finally, Koufogiannakis discussed collection issues. Books for PDAs come on small chips. These "books" are checked out frequently, but the selection is limited—the University of Alberta was able to buy only seventy-two medical titles, some of which are reference works. Cataloging for these titles had to be done manually, the packaging had to be particularly sturdy, and security always remains an issue. The packaged chips must be kept on reserve because some patrons like to keep them for their own private collections and other security measures like Tattle Tape® cannot be used. Other issues the University of Alberta encountered were:

- The state of the industry is still immature—publishers are slow to respond.
- Much content still depends on the one-user model.
- Many PDA books are on CD-ROM, and transferring them to the PDAs can be a problem.
- The benefits of use might not be great enough to justify the cost of purchasing these materials.

In the summer of 2002 the library conducted a needs assessment and services evaluation, and in January 2003 the library formed a focus group and conducted interviews. Based on these evaluations, PDA services were fine-tuned. Koufogiannakis is confident that the library will continue to support and improve services for PDA users in the future.

After seeing how PDAs, SAM, badges, RFIDs, and AMHS's had been applied in library settings, people left the sessions pondering on how these technologies might have value for their own libraries. 