RFID and Libraries: Both Sides of the Chip

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I. RFID in Libraries: Necessary, Sensible, and Humane

RFID is an inevitable technology in libraries, both for financial and humane reasons. In this country, library usage has risen significantly in the past decade (and since March 2001 has soared, perhaps in response to the economy[1]), library collections have grown significantly, labor costs of staffing circulation desks have soared, and a highly feminized workforce spends all day in repetitive tasks required by older technologies such as paper barcodes.

Libraries have several activities that can benefit from RFID. These include:

- Circulation: checking out books and other items, and checking them back in again
- Inventory management: ensuring items are properly located in the collection
- Book processing: adding items to the library's collection

By making books and other library items "smart," RFID offers the following improvements to library services:

1. **Reduction in workplace injuries**. Workplace injuries caused by the repetitive motions related to flipping books and angling books under barcode readers cost libraries millions of dollars every year, and lead to pain, limited physical range, and other problems familiar to a feminized workforce.

2. **Facilitating self-check**. Self-check, or checking out your own books, is much easier with RFID technology because the book does not have to be positioned or angled under a barcode scanner, but can be simply moved within range of an RFID reader. Self-check saves money directly, by reducing labor costs for circulation (check-out) activities, and indirectly, by reducing opportunities for repetitive stress injuries. Furthermore, self-check is inherently more private than requiring another human to handle and inspect the items you wish to check out of the library.

3. **Streamlined inventory management**. Libraries spend a lot of money ensuring books are where they need to be. Books with barcodes require humans to physically remove and handle every item to ensure it is in the correct location. RFID offers the ability to analyze and correct library inventories without handling the items.

4. **Streamlined in-processing**. Acquisitions—the library activity associated with purchasing books and adding them to the collection—can be streamlined with RFID.

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[1] See Library usage up in wake of recession, American Library Association, April 2002,
http://www.ala.org/Content/ContentGroups/Press_Releases2/Library_usage_up_in_wake_of_recession_.htm

All four of these benefits lead to improved public service, which is the bottom line of librarianship. Libraries rarely enjoy luxurious budgets, and it is the goal of every administrator to redirect as many funds as possible toward better library services—more books, more story hours, and longer hours of service for everyone.

II. RFID in Libraries: Cause for Concern

Despite the clear advantages of RFID in libraries, as a library administrator and a former supervisor of a library's circulation department, I must raise a cautionary note.

The fiscal and humane arguments for moving away from barcode technology in libraries cannot obscure the fact that libraries began adopting RFID several years ago without serious preliminary enquiries into the technology, either *in situ* or as part of a larger universe in which libraries are but one of many public and private institutions adopting new technologies.

To many free-speech and privacy advocates, reassurances that profession-wide, RFID in libraries is being implemented in a privacy-safe manner ring somewhat hollow. This skepticism is not without basis. Too often librarians' rationalizations are facile or vendor-supplied, or simply illogical, and in some cases raise more concerns than they resolve, particularly since the library profession, as a whole, has yet to seriously discuss RFID.

These rationalizations can be summarized as follows:

1. RFID tags are expensive; therefore, RFID will not become pervasive in society.
2. RFID tags for library items would be disabled after check-out.
3. Libraries only store barcodes on their tags.
4. Library databases are highly secure.
5. As implemented for libraries, RFID has limited range.
6. It's too hard to use this information anyway.
7. Library RFID operates on a different frequency (or, library RFID is unique, and does not follow the "industry standard").
8. Librarians are aware of the privacy issues related to RFID and consider these issues when implementing RFID.
9. Libraries are a unique, isolated institution in society. Whatever anyone else does with RFID has nothing to do with us.
10. Libraries can never be forced to adopt a specific RFID standard or implement RFID in a specific manner.

Tellingly, you will never find librarians arguing that other institutions have no vested interest in learning about the reading habits of library users. Librarians have spent over fifty years developing the theory and practices described in our Library Bill of Rights[2] and outlined at length in the Intellectual Freedom Manual of the American Library Association[3], precisely because far too many government and private institutions have expressed far too much interest in the reading habits of library users, as is evident from the FBI's Library Awareness Program of the 1970s and today's USA PATRIOT Act.

Point by point, here are some concerns, and possible responses, to the nine rationalizations listed above:

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[2] See American Library Association, Office of Intellectual Freedom, http://www.ala.org/alaorg/oif/
[3] ibid.

1. **The cost of the chip is a red herring.** Obviously, as use increases, the cost will decrease, and vice versa. Vendors and librarians are both counting on that. Library tags will most likely always be more expensive than retail tags, as tags for library materials are expected to be reused and to last the life of the item. However, relying on the cost of RFID in general as a natural limitation on implementation of this technology society-wide is illogical and already disproved by the many recent stories detailing rapid and widespread adoption of RFID in the retail and government worlds.

2. **Tags for library books must stay enabled, or "live," to be useful.** Any librarian actually working with this technology will volunteer this information immediately. Books need to be able to be live-tagged so libraries know whether a book has been checked out in the first place.

3. **Libraries *should* only store barcode numbers on these tags**, **but we have yet to develop best practices profession-wide.** At least one library in California has acknowledged that they store patron information on RFID tags, and who knows but a national privacy audit might reveal others. Note that to support our commitment to our users, libraries have developed databases that do not store information about our users' reading habits; this is standard professional practice encouraged by policy and procedures established by our national library associations. It is only a small stretch to ask the library profession to commit to policy and procedures that limit the amount of information stored on RFID tags to the least and most harmless content (the library's own unique barcode number for the item).

4. **Library databases are often maintained by library staff who "grew into" the job and may not have the training or expertise commonly associated with highly secure systems.** It is dangerous to assume that library systems are so powerfully secured that they would be impervious to an organization seeking to probe databases in order to connect library barcodes with library records. Many library databases are quite secure. But it is a fact that library salaries are rarely competitive enough to attract the best technicians, and in many cases library system staff are librarians pressed into duty for computer systems work who do not have a strong grounding in computer security. At any rate, privacy safeguards to be built into the chip and its implementation, not generated from shortsighted assumptions about privacy "dams" such as secure databases or limited technology.

5. **All popular computing technology becomes smaller, cheaper, and more powerful over time, and often within very narrow timeframes.** (The response sometimes heard, that RFID is not a computational technology, is both incorrect and a red herring, as the devices for reading tags are as important as the tags themselves.) Stephen Satchell, a technology journalist, recently wrote, "Regarding bandwidth and antenna power, the cellular approach to radio communications has blown the top off the count of number of separate transmissions that can occur. Look at what has happened with the cell phone, 802.11b wireless, BlueTooth, and other low-power many-receiver systems."

6. **RFID cheaply and efficiently automates surveillance**. That's why it has become popular so quickly; look at CASPIAN's campaign against Benneton for trying to enable live RFID in undergarment purchases. It has been a WOM (Word of Mouth) among librarians that it would be "easier" to follow someone around to see what they were reading, but this is absurd. The promise of RFID is equal to its danger: it vastly reduces the labor overhead required to track items.

7. **Reliance on features unique to library RFID is dangerous .** This is the "privacy dam" rationalization, where the assumption is that devices outside of the control of the library will continue to function as currently designed, that legislation and standard practices will provide natural protections, and that entities outside of librarianship will not be able to acquire equipment capable of reading library RFID tags. A truly privacy-friendly approach to RFID in libraries is to assume that all library RFID tags are world-readable, and work backwards from there.

8. **Librarians nationwide have acknowledged that privacy concerns related to RFID are new territory.** No profession cares more about its users' privacy than librarianship. However, we are only beginning to connect the dots with respect to RFID. We as a profession need to develop best practices for RFID and advertise these practices widely. We can either manage this issue or let it bite us in the fanny as watchdog organizations and the general public ask, correctly, why, and how, we are implementing this technology in libraries.

9. **Libraries are part of the general world commons, and none of our actions take place in a vacuum**. There is an inexorable march toward RFID in libraries, for highly compelling reasons outlined in the first section of this testimony. However, we cannot assume that our tags cannot be read by (or have no interest to) other organizations, or that we are not contributing to the accumulated It has been observed that libraries adopting RFID en masse send an overarching message that we understand and approve of this technology.

10. **Libraries have proved vulnerable to national agendas .** Recent legislation (CIPA and the Patriot Act) demonstrates that libraries have become highly porous battlegrounds for some of the larger privacy and public-forum debates in our society. With CIPA, many library budgets became dependent on the telecommunications discounts made available through E-Rate, essentially forcing some libraries to adopt draconian policies and procedures that limit Constitutionally-protected speech to adult users. With the Patriot Act, we have seen the government become increasingly inventive and aggressive in its efforts to track the reading habits of library users.

Conclusion: RFID in Libraries: Neither Perfidious nor Perfect

Librarians have the best of intentions with respect to use of RFID in libraries, but these intentions must now be conditioned with much better knowledge and more rigorous action than we have demonstrated to date. Following in the tradition of guidance for other technologies—from the humble book to the most elaborate Web site—librarians should put special emphasis on protecting user privacy, disclosure (alerting patrons of the use of RFID), accountability (taking responsibility for the outcomes of RFID), and security.

The library profession must be encouraged to develop best practices on an accelerated timetable, to work with other organizations in developing guiding principles, and to promulgate its advice as widely as possible to model privacy-friendly RFID practices. It would be advisable to recommend a national grant activity directed toward auditing the current environment, establishing and promulgating best practices, and developing national policy on RFID and similar privacy-challenging technologies.