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Getting Buzzed In the Library: Use of Restaurant-Style Pagers for Reserves Checkout in an Academic Library

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Abstract

In 2004, the Social Sciences & Humanities Library at the University of California, San Diego (UCSD) implemented use of restaurant-style pagers for checking out Reserves Collection materials. Pagers are given to patrons when a desired reserves item is already in use. When the item is returned, the next patron is paged to the Circulation Desk to pick it up. The authors describe the UCSD Libraries' process for initially implementing the pagers, explain the success they have seen with the pagers over the past four years, outline other libraries using similar pagers, and offer guidance for other institutions who might consider this innovative and user-friendly service enhancement.

Keywords

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Getting Buzzed In the Library: Use of Restaurant-Style Pagers for Reserves Checkout in an Academic Library

Introduction

In 2004, the University of California, San Diego (UCSD) Libraries implemented use of restaurant-style pagers for checking out Reserves Collection materials. Pagers are given to patrons seeking a reserves item that is already in use. When the item is returned, the next patron is paged to the Circulation Desk to pick it up. Multiple pagers may also be given out for a single reserves title and/or a single pager may be given to a patron for multiple desired items.

This article describes the UCSD Libraries' process for originally implementing the pagers, outlines subsequent enhancements and modifications made to our pager workflow, explains the equipment used for this service, summarizes how other libraries are using similar pagers, and shares tips for staff training and user education. The authors explain the success they have seen with the pagers over the past four years, and offer guidance for how this innovative service can be implemented in other institutions. While the pagers are also currently used in UCSD's Science & Engineering (S&E) Library, this article focuses solely on their use in UCSD's Social Sciences & Humanities Library (SSHL).

Background

The UC San Diego Libraries is composed of nine separate libraries with services and programs designed to support UCSD faculty, students, and staff. One of the many services offered is "Reserves" or "Course Reserves," in which course-related materials and information submitted by instructors are made available for students in their courses.ⁱ

UCSD has seven units which process reserves, three of which are located within the same building, Geisel Library. SSHL Reserves, the focus of this article, is the largest of all seven units. During peak periods and for high demand materials, items are not always available when patrons come to the desk to borrow them. In the past, we found it difficult to develop a system that would allow us to contact the next patron seeking an item when the material was returned.

Prior to 2004, the patron was told that the material was unavailable and the time when it was due back to the desk. If the patron was insistent on getting the material as soon as possible and willing to be patient, we would ask him to wait on a bench across from the Circulation Desk until a copy of the item was returned. At the desk, we would make a note for staff at each of the four checkout stations indicating the call number of the item that was needed. Along with the note, we would identify the patron waiting for reserves item(s). The situation was easily complicated by patrons stepping away from the desk (bench) to make phone calls, go to the bathroom, retrieve materials from the collection, and so on. If the patron was not there at the time the item became available, and staff did not know where he was, the item would go to the next person waiting for it or back to the shelf. The situation was further complicated during the change of staff at the desk, as each new staff member coming to the desk would have to be informed on who was waiting for what.ⁱⁱ

During a business meeting on another university campus, Marlayna Christensen, Director of Access Services in SSHL, saw restaurant-style pagers being used to call students back to a computer lab as workstations became available. She recognized the similarity between the computer lab's line for computers and UCSD's need for a better solution for providing "holds" for high demand reserves materials. In the spring of 2004, SSHL (along with UCSD's S&E Library) invested in restaurant-style pagers to assist in the management of high

demand reserves items requested at the Circulation Desk. This new method allowed for complete patron anonymity, while effectively showing staff and other patrons the availability of a particular item. Because of patrons' familiarity with restaurant-style pagers and the simplicity of the system, the reserves pagers caught on quickly.

Implementation

Implementing pagers at UCSD's Social Sciences & Humanities Library (SSHL) required allocating space for the new equipment and integrating new procedures into Circulation Desk activities and training. Nonetheless, implementing the service has been well worth the time, cost, and effort required to do so.

SSHL uses low-maintenance coaster pagers from Long Range Systems, Inc. (LRS).ⁱⁱⁱ Each pager comes with a two-year warranty and we anticipate replacing pagers every two years. As long as they are kept charged, they function properly and no additional upkeep or repairs are needed. If a pager stops responding to a charge, it is returned to the company for a new battery for a nominal fee. Alongside the standard, square pagers we use, LRS offers several fun designs such as a pizza slice, a lobster, etc.^{iv}

Due to the thick concrete construction of the Geisel Library building, two repeaters, used to strengthen and extend the pager signal, were needed to cover the library. The two existing repeaters are housed in upper floors of the library in what is referred to as 'the Tower.' We are also considering installing additional repeaters to be located in each of two underground wings of the facility.^v The repeaters require no significant space, as they are mounted in the ceiling (in our case, under the ceiling tiles). Patrons do not see them and are not able to access them. Because we have not experienced any difficulties with the repeaters since their initial

installation, Facilities Department personnel have also not had to access them. Company representatives can assist in determining the number of repeaters, if any, needed in a building.

Even with multiple repeaters, some small areas of our building remain “dead-zones,” where the signals from the transmitter and repeaters do not reach. The pagers indicate when they are out of range with a quiet, repetitive beep that is very different from its response to being actively paged. This sound should alert patrons to move into a “live-zone,” which triggers the pager to cease beeping. We recommend that Reserves Unit staff walk throughout the building annually to identify dead spots so they can alert patrons to any known problem areas or decide whether and when additional repeaters may be warranted.

At the Circulation Desk, a single, three-foot shelf of the Reserves Collection was designated to store the pagers. A separate, small section of the desk was also designated for the pager transmitter and a space to put books that have been returned and are being held for the patron who has been paged. A large whiteboard, also known as the pager board, was hung so that it is easily visible from all three checkout stations, as well as by patrons in line at the desk. The pager board is used to keep track of who is waiting for which books, or which pagers are associated with various materials.^{vi} During especially busy times, typically at the end of the term, two pager boards are needed to record all of the pager activity.

UCSD’s process of using a pager for reserve item checkout

The UCSD Libraries’ process for utilizing restaurant-style pagers for checking out reserves items is fairly simple. When patrons visit the Circulation Desk to request reserve items that are currently checked out, they are asked whether they have time to wait for the item, and if they would like a pager to establish a place in line for it. If they do, a fully charged pager is

checked out to the patron's record in the online circulation system and given to the patron with appropriate instructions. The pager number is written on the pager board with the corresponding call number of the desired item (the patron name is never written on the pager board). If more than one patron is waiting for an item, subsequent pager numbers are added to the list associated with the call number. If multiple copies of an item are on reserve that term, the first available copy is given to the patron, rather than reserving a specific copy. A patron may also checkout a single pager for multiple items. While many students happily accept a pager, or even ask outright for a pager when they know the item is currently checked out, some decline them because they do not plan to be in the building long enough to wait for the item.

When the requested item is returned, a Circulation Desk staffer sets it aside near the pager transmitter, pages the next patron in line using the pager transmitter, and records the time of the transmission on the pager board. The next patron has fifteen minutes to return to the service desk and pick up the book. If a student takes longer than fifteen minutes to retrieve the item, the book is released to the next patron.

If the paged patron returns to the Circulation Desk within the allotted fifteen minutes, the pager is checked in, with the staff member confirming that the returning patron is the same one who initially checked out the pager by verifying the student against the patron account on which the pager was checked in. This prevents someone from stealing a pager from the patron who checked it out or otherwise monopolizing reserves items.^{vii} The item is then checked out to the paged patron, the pager number cleared from the transmitter, and the entry erased from the pager board. The pager is then returned to the stack of pagers in the process of being charged.

Establishing new procedures for using pagers required careful consideration, including initial and on-going staff training. The goal was to establish a fair and equitable process for managing high-demand reserves materials.

In addition to being trained on the checkout procedures described above, staff members must also be trained on a number of equipment issues. Signs and reminder messages ensure that all staff members, especially students working at the Circulation Desk, handle equipment properly. The biggest equipment challenge is ensuring fully charged pagers and keeping track of which pagers are and are not fully charged. For example:

- Pagers must be returned to the stack clearly marked “Returned” and should only be checked out from the stack labeled “Checkout” to ensure that the pager batteries are given ample time to charge.
- The “Returned” stack cannot handle more than fifteen pagers. When the “Checkout” stack is empty or the “Returned” stack too full, staff must move pagers from the bottom of the “Returned” stack to the “Checkout” stack.
- If pagers do not light up and buzz loudly when removed from the charger, the pager’s battery is not yet appropriately charged. Staff should put it on the “Returned” stack and use another pager instead.
- When putting returned pagers on the stack of charging pagers, remember to press down firmly so that the pagers make a good connection, in order to facilitate proper charging.
- A single pager may be given to a patron for multiple items. However, a system must be established and staff trained on it, to deal with this situation, including when one, but not all, of the items for a patron is returned. We use special symbols on the pager board to manage this.^{viii}

SSHL has also had to teach patrons one-on-one about the pagers. Patrons must be informed about the difference between what the pager does when it is being paged and what it does when they are out of range from the transmitter. Pagers may be taken outside the library, but only very near the building. Patrons must also know that they have fifteen minutes to return and claim their book or they will lose their place in line. Patrons often need to be reminded that they will need their ID card to check out the book, once paged. Patrons are also instructed that if they are not paged within the three-hour checkout period, they should return to check on the status of the book and ensure that their pager is working properly.

SSHL staff has experienced very few problems with students forgetting to return pagers. Occasionally, patrons leave the library without turning in the pager. All the pagers, however, are eventually returned. In one circumstance, when a pager was not returned for several weeks, the student was notified that he would be billed for the pager, after which the pager was promptly returned. In most other circumstances, one reminder to the patron has proven sufficient to get the pager back.

Statistics / Use of pagers

The UCSD Libraries operate on an 11-week quarter system consisting of 10 instructional weeks, plus Finals Week. The academic year consists of two Summer sessions, followed by Fall, Winter, and Spring terms. As shown in Table 1, while the percentages of pager checkouts, versus the total number of item checkouts, may appear relatively small, the numbers themselves indicate that a substantial number of patrons still took advantage of and benefitted from the convenience of the pagers. The results shown here may also be minimally skewed because while a patron may check out a single pager to wait for several different reserves

items, use of those pagers are only recorded once. While the average number of pagers used per day is fairly low, the volume of their use is highest during Tenth and Finals Weeks, when two pager boards are typically used.

TABLE 1: Statistics representing the total number of physical reserves items checked out per quarter, as well as the number of pagers checked out per quarter, are outlined below.

Quarter	Courses with Physical Reserves Items	Total Physical Reserves Items	Total Physical Reserves Item Checkout	Total Pager Checkout	Pager Checkouts as % of Total Reserves Checkouts	Average Pager Checkout Per Day of the Term	Average Physical Reserves Checkout Per Day
Spring 2008	349	2339	29567	2618	9%	34	389
Winter 2008	367	2456	28153	1948	7%	25	366
Fall 2007	354	2700	33989	1616	5%	21	447
Summer 2007	176	1014	8721	627	7%	7	96
Spring 2007 *	407	2583	33705	3515	10%	46	443
Winter 2007**	405	2219	30803	2324	8%	30	400

* Because of high use, SSHL borrowed additional pagers from another UCSD library at the end of the Spring 2007 quarter, and no statistics were kept on the borrowed pagers. High pager use this term is most likely due to fewer books being purchased that quarter.

** Nearly all SSHL pagers were non-functional for 3 heavy-use days during finals of the Winter 2007 term, so these reported numbers are lower than they otherwise would be.

Challenges

Although we have had surprisingly few serious challenges implementing the pagers, a number of issues have arisen during the past four years. First, in order for the pagers to be effective, the system relies on Circulation Desk staff being aware of what items are posted on the pager board. Before re-shelving an item, the staff member must check the pager board to see if the item has been requested by another patron. If this does not happen, a patron may be

waiting with a pager for an item that is actually sitting on the Reserves Collection shelf, and which may unknowingly be given out to another patron who appears at the desk seeking the item. Because items for which pagers have been issued are accidentally reshelved on occasion, during slow periods at the desk, staff members will check the circulation system for the status of all items listed on the pager board. If an item has been checked in and mistakenly placed on the shelf, the staff member will pull the item and page the waiting patron immediately.

A second challenge illustrated just how valuable the pagers had quickly become to our operations. At the end of the Winter 2007 quarter, one of the charging bases broke and did not charge pagers correctly. Because UCSD students were in the midst of finals, books were constantly being checked out and long lines of patrons developed at the Circulation Desk. Eventually almost all of the pager batteries were depleted and they no longer functioned. As a work-around, staff created a list of patron cell phone numbers to use instead of pagers. (If a student did not have a cell phone, he received one of the few functional pagers.) In order to resolve the crisis, the Reserves Unit manager placed an overnight rush order for a new charger. This experience showed pagers to be substantially more efficient than cell phones. Because many students use cell phones from out of the area, staff had to place long distance calls. Using long distance codes to authorize the calls took much longer than the pagers, and cost the library more because of the associated long-distance fees.

A third challenge of note was that our initial inventory of pagers was not sufficient for the volume needed to support this service during peak periods such as Finals Week. When we learned of this, SSHL temporarily borrowed pagers from its neighboring Science & Engineering Library, and purchased additional pagers to be in place for subsequent terms.

Deciding whether to implement

Universities considering ways to enhance reserves service through the use of pagers must first evaluate the size and use of their Reserves Collection. In 2004, SSHL staff recognized they had outgrown their system of taking names of students seeking reserves items currently checked out to another patron. Use of reserves at SSHL has grown over the years, as reflected in the statistics reported earlier. Reserves materials use has remained consistently high in recent years, and is not anticipated to decrease in the near future. During the Winter quarter of 2004, 2,403 items were placed on physical reserves with 25,501 checkouts that term. In the Winter quarter of 2008, physical reserves items totaled 2,456 with 28,153 checkouts. Other libraries will find their own threshold for what constitutes a large collection and/or high usage.

If a library decides that the size and usage of its Reserves Collection warrant investigation of an automated pager system, such as that at UCSD, the costs of instituting and maintaining such a system should be considered. In 2004, SSHL paid approximately \$2,000 for one transmitter, one pager repeater, 15 pagers, one 15-unit charger, and 15 UCSD custom pager labels.^{ix} In order to determine how many repeaters might be needed for consistent transmission in a facility, staff will need to consider their building's structure and perhaps local topography to keep the number of potential dead spots in the facility to a minimum. Since the initial implementation, SSHL purchased 30 additional pagers and two more chargers.^x To meet our current demand, SSHL keeps at least thirty pagers available on chargers at the Circulation Desk at all times, and fifteen additional pagers as back-ups in the Reserves Unit. These back-up pagers are used during midterms and finals when demand is greatest.

In addition to initial set-up fees, pagers that eventually lose functionality may be mailed back to Long Range Systems, Inc. (LRS) to be refurbished. To date, SSHL has utilized this

convenient and affordable service twice, returning a total of 10 pagers to LRS for overhaul. Five were returned in the summer of 2007 and were covered under warranty at no charge. Another five were returned for battery replacement in June of 2008, following heavy use during Finals Week, at a cost of \$29 each.

Libraries should also consider the noise and potential disruptions caused by the pagers. SSHL maintains strict noise policies throughout the library, including a request for students to silence their cell phones while in the building. When a patron is paged, the pager emits a loud buzzing sound and vibrates – much like a cell phone on the “vibrate” setting. While the alarm is loud enough to disrupt a quiet study environment, students are quick to return to the Circulation Desk to have the pager silenced and retrieve their item. The 15-minute time limit for paged patrons to claim their item before it goes to the next person in line helps to ensure that buzzing pagers are returned to the desk quickly, with as little disruption as possible. In addition to the paging alarm, the pagers also emit a low beep if they are taken out of a “live-zone.” They will continue to beep until the student has found a spot within a “live-zone.” This beep is soft and will most likely not cause a distraction, as students will move in order to silence it. The beep may actually serve as a reminder to a student to return the pager to the library if he forgets and leaves with it in his backpack. Thus far, the only pager-related noise complaints SSHL has received have been from the pager holders themselves. They often complain they are embarrassed at how loud it is and that they dislike the attention it draws as they return to the Circulation Desk to pick up the item for which they are being paged.

The potential costs, noise, and learning curve of a pager system should be weighed against its benefits. In addition to the system’s intended advantages, SSHL staff discovered additional benefits once the system was in place. Posting the call numbers of the items for which students are waiting documents which items are in great demand. If a line continues for a

particular item, Reserves Unit staff can contact the course instructor for additional copies or, if the Reserve Unit's budget and the course timeline permit, consider purchasing additional copies themselves. Furthermore, statistics kept on the pagers themselves give staff a valuable picture of how often reserves items are being used. A high number of pager checkouts indicates that Reserves Unit staff should purchase more copies of the most-used books to cut down on wait time for students, and lends support for seeking additional funds for this purpose. This information is particularly important in a climate of budget cuts, which can translate into a general reduction in the number of copies purchased for a class initially. This service enhancement conforms to the growing emphasis within the UCSD Libraries and throughout the academic library community on user-friendliness toward patrons.

Circulation departments should also be aware that the pager system will bring more attention to their Reserves Collection and that they may experience an increase in the use of reserves items. Students previously unwilling to wait by the Circulation Desk for a particular item will enjoy the convenience of being able to study knowing that the pager secures their place in line for the desired reserves item.

Use of restaurant-style pagers in other academic libraries

Searching the existing library and information science literature yields few results related to use of restaurant-style pagers in the library setting, including the leading journals covering this area of library service such as the *Journal of Access Services* and the *Journal of Interlibrary Loan, Document Delivery, and Electronic Reserves* (formerly the *Journal of Interlibrary Loan, Document Delivery, and Information Supply*). The only particularly relevant article describes an interesting and unique purpose for the tools. A brief clip from the January 2008 issue of *College & Research Libraries News* announces use of restaurant-style pagers in the Valley Library at

Oregon State University in Corvallis. The library hosts a short-term, drop off day care center called 'Our Little Village' at which students currently enrolled at the institution may leave their children, aged six months to 10 years, for up to three hours on a first-come, first-served basis. According to the article's abstract in Library Information Science and Technology Abstracts, "parents must stay in the library while their child is being cared for at the facility and are given a pager to alert them of problems or if their time has expired."^{xi}

An inquiry to three circulation and reserves-related listservs^{xii} fared better in identifying other institutions utilizing restaurant-style pagers. Despite the lack of published articles on the tool, a number of academic libraries are indeed using such pagers for a variety of purposes. In fact, far more libraries reported using pagers for study rooms and/or laptop checkout than for checkout of reserves materials.

Of the libraries responding to our inquiry, several reported currently using restaurant-style pagers for reserves materials. The University of California at Irvine (UCI) has paged patron *cell phones* for use of reserves materials since January 2008. However, they employ the same restaurant-style pager system used at UCSD to page library patrons who do not have a cell phone at the time. University of California at San Francisco library staff purchased ten pagers and the cell phone paging transmitter system, with plans to implement them in Summer 2008 for both reserves and laptops. The University of California at Davis (UCD) library implemented a pager system for its two-hour holds (reserves) in the fall of 2005, and currently has 36 pagers.

Despite these limited examples of pager use for reserves materials, the most frequently mentioned use of restaurant-style pagers is for alerting students to the availability of study rooms in the library. Pixey Anne Mosley, Sheetal Desai, Henry V. Carter, and Wendi Kaspar, all

of Texas A&M University in College Station, offered a poster session at the 2007 American Library Association conference in Washington, DC entitled 'Study Rooms and Restaurant-Style Pagers.' The abstract for the session described the high demand for study rooms at Texas A&M, various models for and challenges of managing these resources, and the need to leverage the advantages of both a reservations-only policy and one offering the rooms on a first come, first served basis. The abstract continues: "To address this, Texas A&M is implementing an innovative approach of distributing restaurant-style pagers to students requesting the next available room. This approach will allow them to study comfortably elsewhere in the building's public space until a room is available and then page them back without disrupting other patrons. This poster session will present different aspects of managing study room resources and focus specifically on the logistics and results of implementing the pager project." Ms. Mosley summarized in June 2008 that "We did find the service to work well for the study rooms and be very successful. At this time, we haven't expanded the use for any other collections," although she mentions that her institution has considered using pagers for reserves materials, or perhaps for computer workstations, but not found their volume of reserves use high enough to warrant implementation. Texas A&M staff members are currently reviewing data from their first full year of pager use, and may produce an article on their experience.

The University of Florida's (UF) Library West also implemented use of restaurant-style pagers for group study rooms in November 2006.^{xiii} The library's Academic Support Services Coordinator reports that the pagers are "wildly popular and there are times when all the keys are checked out (2 hour checkout) AND all the pagers are given out too. Sometimes the pagers don't get much time to recharge between patrons because so many are waiting for pagers in order to wait for a room." UF's Chair of Access Services confirms that the pagers are "very popular and work well."^{xiv}

Beginning with the 2007-2008 academic year, the University of California at Berkeley (UCB) Libraries have employed restaurant-style pagers from JTech^{xv} for their study rooms, after first learning of UCSD's use of the pagers several years prior. Circulation staff at UCB notes that the pagers "have worked quite well. We use them to notify our patrons that they have stayed in the study room beyond their allotted time, without having to send staff to the physical location."^{xvi} Likewise, the University of Kentucky Libraries implemented use of pagers in 2005 for notifying students that group study rooms are available. They purchased additional pagers in 2006, and continue to use them for this purpose.

Another use reported for restaurant-style pagers in libraries is for checkout of laptop computers. According to the Head of Circulation Services, the Texas Christian University Library began "using pagers approximately two years ago when our laptop checkout began exceeding the available laptops. The students get the pagers and are notified when a laptop becomes available. Although we've since added additional laptops, we still need the pagers during the busiest times—midterms, finals, some really busy days." The Head of the Access Services Department at Florida International University (FIU) explains that its library has used 75-100 restaurant-style pagers on two campuses, with positive results, for about 4 years for both laptop and group study room checkout.^{xvii} Because it is able to purchase them inexpensively through a state contract, the John C. Hodges Library at the University of Tennessee employs email pagers (as opposed to restaurant-style pagers) for high demand equipment, primarily laptops. A library staff member there "created a website to checkout pagers per equipment desired. Then, when the desired equipment returns, staff uses the site to send an email to the pager. The pager buzzes and the patron exchanges it for equipment." He also explained that the email pager system "works well, as cell phone signals travel better in our building than local radio transmissions."^{xviii}

While not reported by anyone via the listserv inquiry, other possible uses of restaurant-style pagers might include checkout of headphones or other equipment, or contacting other persons. For example, a pager could be given to a patron needing to speak with a particular library staff member who is at work that day, but not currently available, and the patron could be paged when the staff member returns from a meeting, lunch, etc. For example, Carol Goodyard of the Reference Department at the University of Oregon's Knight Library shared their need to be able to call other staff to the Reference Desk when multiple patrons were waiting for assistance.^{xix}

Next steps

SSHL expects to continue to use the pagers for reserves checkout. Having learned through the process of writing this article about how other libraries take advantage of the pagers, we may also consider whether we could implement their use for other purposes as well. We will also continue to think about ways to record additional, useful statistics for pager use that may better assist us in purchasing the most appropriate number of copies of reserves items based upon a fuller understanding of their demand and use.

Finally, we previously investigated a way to automate the pager board so that the status of items for which pagers have been distributed could be displayed on a digital board at the Circulation Desk. Such a system should allow us to display the items for which pagers have been given out, in call number order, and to track the order in which pagers were issued. In this way, patrons in line could better see whether their desired item(s) might be available, or if others are already lined up (via pager) for the item(s). We also wanted a system that would allow staff members to update the list from their checkout station and that would update instantly. Unfortunately, we were not able to identify an option for this that was truly sufficient. Available

technologies were deficient primarily because they could not update quickly enough to serve our needs, and were ultimately deemed more complicated and less effective than the manual method. As a result, we continue to use and improve upon our initial pager board system. Nonetheless, it may be worth investigating this again to learn if additional technologies are now in place that might be used.

Conclusion

The SSHL experience using restaurant-style pagers for checkout of reserves items has been overwhelmingly positive. The service has been heavily used and well liked, and been a far superior replacement for the previously used system that was ineffective, inefficient, and far from user-friendly for both staff and patrons. The pagers offer flexibility for the patron, establish a fair way to coordinate the use of reserves items, and allow staff to provide better service to patrons than just turning them away. Patrons with pagers are then confident of their place in line for their desired item(s), and can then study or use the library more productively without worrying about when or whether they will get to use the item.

In summary, the pagers support the UCSD Libraries' focus on the user and commitment to adding value and convenience for the patron. The added service complexity, minimal staff training, and relatively low cost required in implementing the pagers have proven well worth the benefit to the patron and to the library. We encourage others to consider implementing restaurant-style pager use for checkout of reserves materials or for other purposes.

¹ Reserves are available both electronically and physically, through the UCSD Libraries. Items that professors may have "on reserve" for a class include images, audio files, journal articles, videos, books or book chapters, practice exams, study guides, and more. While we make as much material available electronically as possible, many physical reserves items are held in a closed collection and circulate through the library's Circulation Desk.

ⁱⁱ Our circulation system (Innovative Interfaces Inc.) does not allow for a reasonable method of placing a hold for the patron and contacting him when the item is next available. The automated option within our Innovative system would notify the user only after circulation notices were generated, which is not performed here frequently enough for timely results with reserves checkout. Although a subsequent patron could be informed of the time that an item is due and instructed to return for it then, the problem occurring when the item was returned prior to the time it is due was yet unresolved. In these instances, the book would sit idle on the Reserves shelf, even when others might be waiting to use the item. If a more effective notification system were in place, use of the material would be maximized and patrons would have the opportunity to get the book immediately upon its return.

ⁱⁱⁱ UCSD selected Long Range Systems Inc. (LRS) Library Paging Solutions: <http://www.pager.net/Long-Range-Systems/library-solutions.html>

^{iv} In addition to Long Range Systems, Jtech (<http://www.jtech.com/UserFiles/File/MediPass%20Flyer.pdf>) and HME Wireless (<http://www.hmewireless.com/>; 1-866-611-4204) also offer pagers for library use.

^v A third repeater has been purchased, but is not yet installed. We may also purchase a fourth repeater for even greater signal coverage.

^{vi} Permanent marker was used to make columns for call numbers and associated pager numbers. Dry erase markers are used to fill in the information as pagers are checked out. When clearing entries, the call numbers and pager numbers written in dry erase markers are erased, but the formatting of the board, written in permanent marker, remains. A notes section is also provided at the bottom of the board for any special notices or reminders regarding particular pagers (i.e. Pager X was paged at 10:16 am, but has not yet responded.).

^{vii} These measures do not completely eliminate the problem of having one person monopolize a book (since friends could check out the book for the person on their own accounts), but it does make it more difficult and, therefore, less likely. Furthermore, the person with the pager has to stay within paging range to prevent losing her place in line for the item. Therefore, the friend would have to be willing to stay in the library, possibly for many hours, to help someone cheat the system.

^{viii} If a patron checks out a pager for multiple items, SSHL staff place an asterisk on the pager board by the call number for each item. If a paged student returns for one item, but is still seeking other items, the student keeps the same pager for the remaining items. The asterisks are erased when only one item remains to correspond with a pager.

^{ix} Transmitter (\$450); pager repeater (\$400); 15 pagers (\$55/each); 15-unit charger (\$50); 15 UCSD custom pager labels (\$2.50/each)

^x We bought 15 pagers and one charger in each of two purchases (February 2005 and November 2007) for just over \$1,000 each time.

^{xi} Oregon State University Opens Our Little Village, *College & Research Libraries News*, January 2008 (v69 i1), p7.

^{xii} Lib-Ereserves, LIB-CIRCPLUS, and UC-Circheads

^{xiii} UF has approximately 17 pagers and 14 study rooms, and refers to its pager service as their "GatorWait" system.

^{xiv} Additionally, UF offers laptops for checkout, but does not currently use pagers for that function.

^{xv} UCB uses MediPass pagers which were modified by JTech to permit attachment of a key to each pager.

^{xvi} Peter Soriano, Circulation Department, UC-Berkeley Library

^{xvii} They use one repeater in each of the two campuses, and have experienced no reception problems, even in their eight-story building. Through HME Wireless, FIU staff were able to negotiate a lower than standard price by indicating their non-profit status.

^{xviii} David P. Atkins, Team Leader in Access & Delivery Services, University of Tennessee

^{xix} Goodyard explained that they currently use Motorola walkie talkies for this purpose. However, another option might be to place a transmitter at the desk and supply Reference employees with assigned pagers. In this way, the staff at the desk could discreetly call particular individuals from their offices or elsewhere to the desk, as needed. After seeing our listserv call for others using restaurant-style pagers in their libraries, staff at the University of Oregon Library also began to consider whether pagers would be useful for laptops and/or room availability.