

Fancy walkie talkies, Star Trek communicators or roving reference?

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Abstract

This paper investigates the customer service benefits of using Vocera badges, which utilise portable wireless technology (WiFi), to facilitate roving reference service. Use of portable voice communication devices allows the help to be taken to the people and away from service desks. These communication technologies allow library staff to easily access the expertise of other staff. There are no library uses of Vocera devices in Australia at January 2008.

Background

Current library trends involve taking the services to the people. This can be seen by a growing number of libraries having blogs, MySpace or Facebook pages, using Flickr to collect and display images or using YouTube to promote library services. It can also be seen in how library services are provided within a library. Does the client/patron/customer/guestⁱ need to come to the inquiry or reference desk, or can the staff member go to the area in the library where the question is being asked? Can staff learn to help clients before the client becomes frustrated with not finding things, and before they think to ask for assistance?

This paper will look at in-library roving reference. Roving reference is emerging as the preferred term to describe a service where, rather than waiting for the client to approach the reference or information desk, staff, for some or all of the time, leave a fixed service point to find clients within the library who are seeking assistance. While libraries providing roving reference still have service desks, the design of the desk is changing. Some libraries, such as King County Library System, Santa Monica Public Library and Orange County Library System are introducing smaller reference and information desks for staff. The small desks make them more approachable, and easier for staff to walk away from to help clients.

Taking the reference and information service away from a desk to anywhere in the library requires a few changes, not least of which is the attitude of staff towards their clients. Staff need to learn different ways of interacting with the community and with each other. Some consideration has to be given to technology that will enable the librarian to help the client. Most of this paper will be looking at how Vocera badges are used in several public libraries in the United States, often to help with roving reference.

Vocera badges

Vocera badges are the size of a large USB drive, usually worn around the neck like a security tag, that enable voice communication with other staff. They run on a wireless network, work with voice commands and are often linked to telephone systems. They are extensively used in US hospitals and in Australia are used in the Emergency Department of Blacktown Hospital in Sydney. Some public libraries in the United States use Vocera to assist with staff communication as well as for reference.

In June 2007, Vocera badges were in use at the central libraries of Boston, Massachusetts; Jacksonville, Florida; Minneapolis, Minnesota; Orange County Library System in Orlando, Florida; Santa Monica, California; and Seattle, Washington. Vocera was having a delayed release at Pasadena, California. Originally planned for implementation by June 2007, it was actually implemented during November. Cerritos Library in California uses walkie talkies for a similar result.

King County, Washington has roving reference aided by bay-end OPACs (OPACs at the end of book shelves). East Lake Library in Minnesota was using roving reference, and had plans to install two bay-end OPACs to facilitate this.

The effectiveness of the Vocera badges to aid the roving reference model depends upon the effectiveness of the wireless network within the library and on staff training tailored to roving reference. How the reference service is managed as part of the total service delivery package is also a consideration. Some libraries had dramatically changed how they were delivering services as a result of using the Vocera badges, but in others, there was little impact on the reference services. However, in the libraries which had limited change to services there were significant benefits, as a result of staff being able to communicate with one another more effectively. The sizes of the central libraries shown on the table below indicate some of the reasons additional communication tools are required.

Library Name	Size in square feet	Size in square metres
Boston	170 000	15 793
Cerritos	88 500	8 222
Jacksonville	297 000	27 591
Minneapolis	353 000	32 794
Orange County Library System	290 000	26 941
Pasadena	130 000	12 078
Santa Monica	104 000	9 662
Seattle	362 980	33 721

Most libraries had at least 50 devices. No library that had implemented Vocera felt they had enough devices. As the library staff used the Vocera badges, they kept discovering more ways it could be used for customer service and staff communication. The badges are mostly used by reference staff, floor and library supervisors, often by circulation staff, and most of the libraries had at least one device for security staff. In one library, all security staff wore a Vocera device as well as a walkie talkie. The optimal system appeared to be for each staff member to have their own dedicated badge, as it seemed to reduce wear and tear on the badges and increase effectiveness, as people were contactable wherever they were within the building. While most libraries encouraged staff to stay logged on all day, it is possible for the person wearing the badge to put it on hold, like putting a telephone on hold, so that people can leave messages, for example when the badge wearer is in meetings, or on breaks.

Each library had a different system of managing access to the badges. In one library, staff collected their Vocera device from security when they entered the building. In most other libraries, there were 'farms' of Vocera devices where the units were charged each night. The 'farms' were sometimes distributed around the building and at other times were in a central location.

Library staff commented on the simplicity of the implementation and the high quality of the support and training provided by Vocera. The computer system running the badges can be 'trained' to understand particular pronunciations; staff who had previously experienced some difficulties with the computer system understanding their voice found this helped. This 'training' was mostly around accents, but name variations could be added in as well.

Before I visited Orange County Library System (OCLS) in Florida, I was told by staff at both Seattle Public Library and Santa Monica Public Library that OCLS was doing more than any other library in their use of Vocera. When I visited this library, I found this to be true, although Santa Monica came a very close second in terms of effective service delivery. This will be detailed later in the paper.

There were various potential health and union issues raised in some libraries, however, there are no known negative health effects of wearing the devices. In addition the global positioning systems integrated into the badges can be turned off for general use and reactivated for security reasons like locating a staff member in an emergency. One union was concerned that management would be constantly using the GPS system to track the location of each person. The management of this library had no intention of ever using the devices for this purpose.

Library case studies

Boston Public Library

Boston Public Library has 50 badges and 75 licences. Staff designed their own training to encourage higher use. This training consists of a witty video, which is viewable from the staff intranet. The library has 8 bay stations for recharging. Staff wear the badges when on desk, and they are also worn by staff managing public events within the library. The badges are not used in the information lobby, which is mainly a directional rather than information based service. Custodial staff, children's, adult, security, rare books, music and other subject experts wear the Vocera badges, so that their expertise can be easily accessed by other staff.

Clients show interest in the technology that is being used to assist them. The library staff have been using Vocera for almost 3 years, and about 50% of them are keen Vocera users. Boston has a large closed stack area which does not have wireless access points, which means that the stacks are 'dead' areas for Vocera reception. It is too expensive to run wireless through the stacks, so they are trying to focus their use in the public spaces. This seems to be working well.

Boston, like most of the sites I visited, has integrated Vocera into the telephone system. This means that if someone rings up they can be transferred to a device being worn by a staff member, so that the enquiry can be taken to the shelves.

The enthusiasm which Boston Public Library has for the use of Vocera is seen by them lobbying for it to become part of the Federal government e-rate,ⁱⁱ which means that the Federal government would pay 90% of the installation and running costs.

Boston has used the Vocera devices to improve overall wireless access in the library, as they are a very easy tool to use to check for 'dead' zones. When the badges don't work, a 'dead' zone has been found. Staff note that Vocera are very effective communicating tools – one systems team member was contacted on his badge while at his dentist (a block from the library).

Use of the Vocera badges greatly assisted in the provision of the reference at information services provided at the Central Library.

Jacksonville Public Library

Jacksonville Public Library decided to try Vocera after hearing about its use by the Orange County Library Service, also in Florida. They liked the customer service focus, and it has been invaluable for staff to be able to communicate across multiple floors within the library. Here, Vocera has been linked to the telephone system so that it can be used to call other branches. Vocera has been implemented for about 18 months (which was about 6 months after the new central library opened). Staff repeatedly commented on how much easier it made communication, as they had experienced the situation in a large building without any mobile communication. They have 75 licences and units and use group as well as individual log in, which means it is possible to call either an individual or anyone in a group. The group call works as a round robin, which means that if you are looking for the 'on call supervisor' you do not have to know who is rostered on. You can just call their group and you will be able to talk with the right person. This saves a lot of time spent checking rosters or playing telephone tag. You can speak to the right person much faster. All the circulation staff, reference staff, division managers and security use the Vocera badges.

Jacksonville Library staff commented most about the security issues, as the Vocera devices had helped staff to find three missing children (at different times) within the library. They also had one instance where a staff member dealing with a difficult situation used the 'all talk' option to provide multiple witnesses to an incident, and this method worked well.

Staff also commented that it was easier to call staff out to the desk when back up or extra staff are required, as they can call the relevant group rather than having to work through a list of individuals. This is done as a call to 'all the group', or using the round robin option. Supervisors find it very helpful for locating people for day to day management of service desks and running the library.

The Vocera devices mean that supervisors can better manage the staffing of public desks without having to spend time finding staff. They can simply call them on their Vocera badge.. The new central library is a very big building. Prior to the introduction of the Vocera devices supervisory staff were having to physically locate frontline staff, which was time consuming and could be frustrating. Now that supervisors can call their staff by name or by group on the Vocera devices, the public can be served in a more timely manner. It also facilitates supervisors providing better support to frontline staff as the supervisors are also able to be quickly located.

Minneapolis Public Library

Minneapolis has used Vocera devices in their central library since its re-opening in a new and larger building in 2006. Most people use it to talk with specific individuals, rather than to contact groups of staff. Staff commented that it was a 'great tool'. With their very low staffing levels, it helps staff locate one another when they need assistance. Staff are always logged on. However, the 'dead' zones in the library mean that there is not 100% coverage, and this has made a few staff less enthusiastic about the badges.

From a manager's perspective, it was thought that it was necessary to have something that does the job of Vocera in such a big building. It has been crucial for enabling managers to talk with their staff, as sometimes this may be the only contact they can have with their staff each day as the staff spend a large percentage of their day on public service points.

Prior to the move to the new central library Minneapolis Libraries as a whole had staff cuts of twenty five percent. Combined with other budget cuts this meant that many branch libraries reduced their opening days from six to three. It also meant that for individual floors of the central library which are each about half a hectare in size or the size of a soccer field, there were only two or three staff on desk on each floor at any time. This is a lot of space to cover for this low number of staff. The Vocera devices mean that the staff can help each other more effectively as they can communicate with each other while they are staffing this large space. It means they can be active doing roving reference, and still be accessible to their colleagues with their expertise.

Seattle Public Library

Seattle has 50 Vocera devices but have a licence for 150. Because of the structure of the central library, they needed a communication device which was not a telephone. Walkie talkies and mobile phones were investigated, but these were ruled out, as they do not work in all parts of the building.

Vocera is primarily used by reference staff, but also by all relevant managers, so that they can contact staff and be contacted by them. This library had a rocky start to the implementation of Vocera, because they did not have any control over the location of the wireless access points. An engineering study had been done to determine the best locations, but the designers did not always like what the engineers recommended. The wireless access points have been fixed, and revised training was due to start in July 2007.

The building has very good acoustics so that sound does not travel and staff using Vocera badges do not disturb other clients. Some staff have been heavy users of Vocera and some negligible. It is possible to run statistics on use. Seattle uses individual and group log in, so that staff can access a subject expert by calling that group, rather than having to know who is on duty that day. Each manager has a permanently assigned unit – they log in to the managers group, and also log in as an individual.

When reference staff begin the first reference shift for the day, they collect the required number of badges for their service point and then each logs on as an individual and as part of the group for their service point, which allows other staff to contact them by either method. This works well for subject experts and for referring people between floors. The administrators can check who is logged on in each area; this is done from time to time and followed up on to encourage 100% use by staff. At the end of the final shift of the day, staff return the devices to their chargers.

Staff at the Seattle branch libraries can access a person via their Vocera extension. As all the branches are on the one telephone network, this means that the branches can locate people when they are outside their office. Because of the design of the

service desks, roving reference is not an easy option. The Vocera devices are very helpful for communicating with staff through the multiple layers of the non-fiction book spiral, which has multiple split floor levels. Each part of the one side of the spiral has service desks and the Vocera devices assist staff communication between service desks and with client referrals.

Santa Monica

Vocera was implemented when the new central library opened in 2006. They had heard of Vocera from Seattle. Previously they had an off the desk section where telephone enquiries were answered. Now there is no separate telephone reference service, as it runs through the Vocera on the main desk. If you dial telephone reference at Santa Monica, it will ring someone on his or her Vocera badge. If the first person in the group is busy it will roll over to the next, and so on.

Santa Monica Library started with 6 Vocera units which was only enough for the staff actually on desk at the time and their supervisors. Within a month, they were so popular that the Library had ordered one Vocera badge for each reference staff member so that when each person arrives they log in to the Vocera network as well. Security staff also have Vocera badges. Staff use Vocera to call each other, including calling for assistance at the desk.

The library parking area does not have wireless access points so security staff are out of range when they are patrolling in this area. Consideration is being given to adding wireless access points to this area. Branch library staff do not have Vocera badges, and are not keen to implement them, but central staff are keen for the branches to have them, as it would streamline branch transfers and collect/put-asides.

Staff have had to develop ways of dealing with the remote clients. As the client cannot see what is happening, it has been necessary for staff to provide a brief narration about what is happening, or to continue with the reference interview depending on what is appropriate for each situation. From anecdotal evidence, staff like the efficiency and ease of use and being able to do telephone reference from their own desk. On public desks, the staff use ear pieces. The ear pieces are fine for about two and a half hours, and then staff need a short break from them.

Vocera is facilitating seamless service delivery, as you can serve a client while talking with them remotely, and walk them (remotely) to the shelves over the Vocera device. It has been possible to have more staff actually on the reference desk, as they do not have someone rostered behind the scenes on the telephone enquiry desk. This saves around 20 hours per week of staff time.

The reference desks in the central library are two small desks next to each other, about the size of a small supermarket checkout and a similar distance apart. This is to make it easier for staff to be able to walk away from the desk to serve the customers. It also means that the desks do not look like barriers for the clients to overcome. Combining the Vocera implementation with the smaller reference desks has facilitated the implementation of an effective roving reference model. This means that no matter where the client is, in the library or on the telephone, they can actually receive identical service.

Orange County Library System (OCLS)

This was the first Vocera library site, and the one that is really using Vocera to push the boundaries of quality customer service. They regularly use the grouping function on Vocera to broadcast messages either to all staff or to those staff within a particular group. It gives a greater accountability to the staff who are roving, as they are not simply wandering around, but are able to report on their work and to be located by other staff.

In May 2007, the Library launched their roving reference service, which is called Mobile Gamma. This is based on the Flickr Gamma concept, which highlights the state of perpetual improvement. Prior to this time, there was a roving reference service, but this has been taken further, with detailed training and mentoring of staff. The central library is divided into three groups. One covers the ground floor area, which includes children's, young adult and their large popular/new collection and is the first contact clients have with library staff. These staff are to escort the customer to where they need to go and stay with the client until the enquiry is finished. More people are rostered to this group than to the other areas, as it is the first point of contact.

They have a manager of the day (group) who can be contacted and that person can reassign people if there need to be more in one group or another. All staff are trained and rostered for all information service points.

For the mobile gamma training, specialist staff did 'hot spots' alerts for each service point. The 'hot spot' alert covered key resources, questions and tools. Staff then had to 'buddy up' to learn more, each negotiating their own buddy. This method was used to emphasise that more communication was needed between staff, and a division perspective was required, not a department perspective. For example all the staff had to learn how to provide services for children and young adults, rather than viewing these areas of service as 'someone else's work'.

The second and third floors, covering much of the fiction and non-fiction collections, are in one group areas. Staff rostered to this group need to move between both floors. In the refurbishment of three of the four floors of the library (the fourth floor is yet to be refurbished), the information desks were rebuilt so that they could hold one or two PCs and a printer. This makes the desks much smaller and more easily approached, and less of a barrier to the community.

Training emphasised how to use the Vocera badges properly and frequently. When doing the voice commands, staff sometimes forget they are talking to a computer and not a person, and forget to use the correct commands. The manager of the day uses a group log in, so a staff member can call this group with any problems within the library. The same is done for the closing manager, allowing each floor to easily report when it is cleared.

Senior staff are modelling the desired behaviours for other staff to follow. For example, it is a stroll to see if someone needs assistance rather than a brisk walk. The strolling makes the staff approachable, whereas a brisk walk makes them look like they are going somewhere else – which they probably are. If a staff member is at a fixed service point, he or she needs to be helping a client. Part of mobile

gamma is that staff needs to be walking around seeing what is going on, identifying people who are looking for things. This is requiring a change in philosophy, as staff need to be better time managers. Some concern has been raised about queues at service points while staff are elsewhere, but while away from the desk, staff need to keep checking on the service point.

The staff in the call centre for the library also wear Vocera badges. These staff answer telephones, e-mail, instant messages, and provide the staff for the Florida wide chat service as well as library based chat service. All of these services are provided seven days a week. They also staff Olive, which is a video link enquiry service from three branches.

Customer feedback on the mobile gamma is very positive. Comments include “thank you for being my personal librarian”. From interviews with the Staff at OCLS, they were very impressed with the kind of service which the Vocera badges assisted them to provide. It really allows them to bring the clients to the services, wherever the service or the client is.

Pasadena

Staff at Pasadena became interested in the possibilities of Vocera after seeing a demonstration at the new Santa Monica central library.

Pasadena is forward-looking in the area of service delivery, and restructured their library staff to facilitate succession planning. For example, more junior librarians were given staff and projects, and more senior staff had their roles changed to be more like mentors. Even the very senior reference staff are rostered on desk to help with the overall management of the reference and information services. This allows their extensive skills and experience to be used to serve the public, and positions them as role models for less experienced staff. There was a lot of enthusiasm and excitement about service delivery and planning across all the levels of reference staff I met. They also engage in system-wide training so that there is consistency of service across their ten library sites.

The recognition that staff need to be where the public is was one of the motivations for the planned Vocera use by this Library. Currently, staff are rostered with a pager, so they can be called to desk for back up. Cameras showing circulation and information desks can be looked at on staff computers in the work room (just like a web page), so staff can go and help when there is a queue.

On Sundays, they have four staff rostered on the reference desk, so some staff are already roving, but the Vocera devices should make this happen more widely. Their general statistics are only bibliographic, but once a month they do a tally of non-bibliographic enquiries, for example trouble-shooting PCs.

Additional information I have received by e-mail indicates that the staff at Pasadena are very happy with their use of Vocera badges. The library had to increase the number of wireless access points to improve coverage of these devices. They are using the Vocera badges to improve desk shift changes and task allocation. They are using Vocera for their telephone reference with three people available for answering enquiries. These three people are also rostered to the public desk or e-

mail reference. If the library or the telephones become busier than this number of staff can cope with other staff, through their Vocera devices are called on to help with serving the public. Some staff are finding it challenging being on call when not desk, but the staff are experimenting with how to deal with this.

To quote Beth Walker, Principal Librarian, at Pasadena Public Library

“The flexibility Vocera offers staff is wonderful. Staff can sit at their desks and answer the public’s calls. Staff can work on their collections up in the stacks and take calls from the public. The only drawback with that, is they may need a computer with staff access, so then they need to go back to a staff desk to assist the caller. Staff like Vocera for shelf-checks. We “take the customer with us” and can speak with them while in front of the stacks. We also can call a page on Vocera who is shelving in the stacks to ask them to pull a book for a customer. While assisting a customer in the stacks, we can call another library and ask them to check for a title the patron is requesting. We can locate a staff person who may be elsewhere in the building, either thru the “find” command, in which case we’ll talk to them, or “locate” command, in which case we’ll be told their location.

Every staff member has their own lanyard (on which they clip the Vocera badge) with headset. We've all agreed to use the headset rather than have the callers voice come thru the badge where others can hear (privacy issue.). We keep the Vocera badges in a recharging bay, and staff picks up a badge when on duty, and returns it when on break or at the end of their day.

Overall I must say I am very pleased with Vocera. It has such pluses in terms of customer service, and it also gives us greater flexibility in how we deploy staff and the efficient use of their time. We are still “tweaking” how we use the system, and I feel we will continue to find ways to gain even greater efficiencies.”

Other technology Cerritos Library

Cerritos Library uses radio headsets for communication between staff. All the aids, security staff, custodial and systems staff wear walkie talkies. Senior staff have their own walkie talkies and there is a walkie talkie (on low) at each service desk. All the walkie talkies are for work only discussion. This is self-policing, as everyone with a walkie talkie hears each call. Channel 1 is used by all staff and security use channel 3. All staff hear all channel 1 messages. Staff with their own units have to wear head sets when they are “on stage,” and they have to use the radios when they are in the public areas. “On stage” is anywhere in the public part of the library. Radio sets are for short discussions only. They are a good way for locating staff; for example, ‘does anyone see Kerrie’. They are also used for client referrals. A guest (Cerritos Library’s term for client or patron) may be looking for something and staff will radio that area before sending or bringing guests to that area. This use is an effective mix of staff communication and public assistance, but it does mean that everyone hears every message. This contrasts to the Vocera badges, where the wearer can receive individual messages or messages sent to specific pre-registered groups.

Cerritos Library was very happy with their use of radios for communication between staff in public areas. The radios improved customer service as it allowed staff to check on the availability of an item in another part of the library before escorting the guest (Cerritos's term for patrons) to that part of the library. It also made it easier to call on the specialist knowledge of particular staff as they were able to be contacted no matter where they were in the library.

King Country Library Services (KCLS)

Roving reference started when staff were training the public in how to use self checkouts. This highlighted a skills gap: staff had the skills to help clients who came to the desk, but different customer service skills were required to approach clients and offer assistance. The King County libraries were all busy, but many the clients never came to the desks with their questions. The first trials of roving reference were done in 2004, starting with 1-2 hours a day roving, with people required to be 'out' from the desk. For example, during each hour on the desk at least 15 minutes were to be spent 'roving'. Some of the roving may be spent doing something like restacking displays, but this is only so that the staff are available to clients walking around. It started as an 11 branch trial, but this method has now spread to all 43 branches.

To encourage roving they have tally sheets to help ensure that it is taking place. Staff on desk have to rove for about 25% of opening hours. If they do not do this then they need to provide an explanation. The smaller libraries do not have to tally, as they always have to rove. Staff discuss the positive moments of roving reference at staff meetings – the 'aha' moments.

The roving reference is facilitated by smaller reference and information desks. As branch libraries are refurbished or rebuilt, the new desk designs are implemented.

King County has experimented with a range of portable devices (PDAsⁱⁱⁱ, tablets, VOIP^{iv} telephones) to make roving reference more effective. They have found that for libraries their size, bay-end OPACs distributed throughout each branch are the most effective. Staff roving can walk the client a very short distance to do any searching required, or clients can use these independently.

Like King County, East Lakes in Minneapolis is using a small information desk to facilitate roving reference, and has plans to install two bay-end OPACs in the near future. These will be placed at the furthest points away from the information desk. The rostering has also been changed to facilitate a roving reference model, by having two staff come in before the library opens to do 'behind the scenes work', which means that all the other staff focus on the public service for more of their time each day.

Conclusion

The use of Vocera badges and walkie talkies facilitates communication between staff in larger libraries. It allows more flexibility in rostering as more staff can be called upon to help the public very quickly without needing to be rostered to the desk just in case it becomes busy. It reduces the time staff have to spend locating each other in larger buildings, and these devices can provide security support very quickly. These are all important improvements for staff.

Of most significance is the improvement that can be provided for customer service. It is a very exciting technology to see in action and to see how the client benefits from the services provided. Clients can access more experts more quickly, through staff use of the group log in function, or individuals can be called upon for their expertise wherever they are in the building. The mobile gamma model from OCLS is one to inspire all libraries, as it takes the services to where the people are within in the library, rather than waiting for them to come to the reference desk or any other service point. It is using a variation of the social networking that is so popular, and is allowing libraries to really show their collections and their great customer services. The use of the Vocera badges takes the services to the clients if the client is in the library. The staff can contact subject specialists very easily, no matter where in the building they are. It facilitates referrals within the library, whether the staff member is accompanying the client, or directing them to another section or another floor. It is also very effective for clients who are not in the library, as it provides a hands-free service option for staff. It liberates telephone reference from mostly electronic resources, as the library staff can walk the client to the shelves or to whatever resource is appropriate, without the client having to wait on hold on the telephone. It makes the clients much more active participants in their reference enquiries, whether or not they are actually in the library.

The mobile model used by KCLS is also important, as small libraries do not always require the voice communication if all the other staff on duty can be seen at any time. The bay-end OPACs mean that while staff are walking around helping clients, the clients do not have to be walked back to the desk for assistance, but can be assisted in situ.

The Vocera badges seem to help clients receive service faster as additional staff (even when there are really low levels of staffing) can be called on as required. It makes rostering to service points more responsive. It allows staff to work in staff areas until they are required in the public space. It can make staff more productive as when they are on a service point they are there because they are helping someone rather than being rostered on "just in case".

In the libraries which combined the use of Vocera with smaller reference desks (particularly Santa Monica and OCLS) there seemed to be additional service benefits as the smaller desks were more approachable from a client's perspective and easier to walk away from to help a client from a staff member's perspective.

The Vocera badges could be used in Australian libraries the same way they have been used in the US public libraries that I visited. Even a four thousand metre square library would benefit from the communication which these badges provide to staff. In smaller public, and other, libraries, the roving reference model used by King County would be more appropriate, or staff could use walkie talkies. For larger libraries, with good wireless networks, Vocera becomes really impressive in terms of the customer service which it can facilitate in staff. Each library will have to determine if the Vocera assisted model of customer service is going to be worth the cost. With declining staff numbers in many libraries, the costs of the Vocera units become attractive. The Vocera badges do help to provide an efficient reference and information service across multiple floors or reading rooms. They free staff to serve clients better, while doing their other work more efficiently. They change how library

staff view customer service, and they can improve the customer service which is available, provided that appropriate training is provided to the library staff. These are attributes which would appeal in many libraries, and not only public libraries. While Vocera has not yet been used in a university library (the University of British Columbia is considering their use), it would seem to offer similar benefits in that environment.

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Additional reading

Pitney, Barbara and Slote, Nancy 2007 'The KCLS roving reference model', *Public Libraries*, Chicago, Jan/Feb, Iss 1, pp. 54 – 68.

Robins, Kathryn, 2006 'Building Wi-Fi technology and a new mobile service model: creating change in information service delivery at the Orange County (Florida) Library System', in *The virtual reference desk: creating a reference future*, ed. R. David Lankes, Eileen Abels, Marilyn White, and Saira N. Haque, New York, Neal-Schuman Publishers,.

Libraries visited on the VALA Travel Scholarship June 2007

King County, Washington

- Administration Centre
- Bellevue Library
- Lake Hills Library
- Library @ Crossroads
- Newport Way Library

Seattle, Washington

- Central Library

Pasadena, California

- Central Library
- Allendale Branch Library
- La Pintoresca Branch Library
- Villa Parke Community Center Library

Cerritos, California

- Cerritos Library

Santa Monica, California

- Central Library

Orange County Library System, Florida

- Central Library

Jacksonville, Florida

- Central Library
- Pablo Creek Regional Library
- University Park Library

Boston, Massachusetts

- Central Library

Minneapolis, Minnesota

- Central Library
- East Lake Library

End Notes

ⁱ Client will be the term used in this paper to cover all of these customer service descriptions.

ⁱⁱ The Schools and Libraries Program of the Universal Service Fund makes discounts available to eligible schools and libraries for telecommunication services, Internet access, and internal connections. The program is intended to ensure that schools and libraries have access to affordable telecommunications and information services. <http://www.universalservice.org/sl/> [Accessed 14 August 2007]

ⁱⁱⁱ Personal digital assistants

^{iv} Voice over IP