24x7 (±0.9) Reference…Because Engineers Work Around the Clock

Jim Ottaviani for the ELD 24x7 Task Force

Summary

The Engineering Libraries Division's (ELD's) 24x7 Engineering Reference Task Force has been investigating the possibilities and problems associated with establishing an international network of engineering libraries that would enable user access to basic/core engineering reference services and assistance 24 hours a day, 7 days a week (or as close to that goal as is possible).

This report summarizes our progress. In short, we have met (via email) between the 2002 and 2003 annual meetings and discussed issues that a working group should address, including:

> *Logistics*: Coordinating between time-zones, countries, university cultures, and individual librarians is challenging—it's plenty difficult scheduling a lunch meeting with a colleague two offices away, after all! But it's also not impossible, and we juggle difficult schedules as a matter of course.
>
> *Trust*: We all think, justifiably, that we are in the best position to give good service to our local clientele. While true, we also realize that we have in common core skills we've developed as information service providers do indeed bridge institutions.
>
> *Service standards*: Related to trust, we all have different standards for what, per above, "give good service" means. Again, we note that the core skills and values we've developed as librarians take us a long way towards agreeing on what we do for whom, and when.
>
> *Information products*: Every institution offers a different mix of products (or the same products with different interfaces) to their users. We want, and need, to work with the resources our clients can access daily, using the interface that the client is using. Fortunately, the core skills we develop along with the values mentioned above provide us a leg up on providing the service our clientele needs.
>
> *Software standards for collaborative/virtual reference*: Related to information products, this addresses the software (LSSI, Convey, etc.) we would use to provide service. While no standards exist right now, some (along the lines of a Z39.50 standard) are emerging.
>
> *Funding*: Who's going to pay to smooth the road to a cross-institutional collaborative sits (lurks?) behind all of these issues. A focused service like this, with a specific and easily self-identifiable clientele, may well have advantages that other collaborative efforts do not when it comes to securing funding.

All pose challenges, not just as a cooperative but locally as well. Fortunately, many models exist for addressing these issues, and cooperative cross-institutional services—some subject-based, most not—have begun to appear. The field has plenty of room for a venture such as ELD's, and as the information environment for engineers gets more complex the need for such a venture continues to grow. We recommend a continuation of the work begun by the Task Force, perhaps organized around the specific issues noted above, and on either a committee or special interest group basis.

The Task Force

Over the last year the following ELD members have contributed to the Task Force discussions:

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The Mandate

Outside of ELD (see Appendix I for the official charge) there is no mandate to provide 24x7 service, actually. Though this means that none of the members of the Task Force, much less ELD as a whole, is likely to get all the support or have all of the time they would like to pursue 24x7 service, even in theory, we do share a general desire in the community to provide some level of service to our users whenever they're at work. Which is always. On an individual—both person and institutional—level, though, we can't afford to be there for them all day, every day, so collaboration is a must.

The Opportunity

Every year's meeting of the ELD membership at the ASEE annual conference draws members from around the world. Each get-acquainted session brings us all together and highlights the many similarities in issues we deal with, resources we provide to our clientele, and their service needs. Taken as a group, though, outside the conference we have a hard time getting together. For all the similarities in our daily work, on a fundamental level our days are not similar at all—in fact, an ELD member in Australia's day is an N. American ELD member's night.

And that's good, because when it's midnight in Detroit it's noon in Perth, and they're doing reference. So librarians in the U.S. can sleep even if their clientele are burning the midnight oil,

because with a network of trusted colleagues at work and accessible through virtual reference desk (VRD) software, they can get help if they need it.

Working as a subject-based team has additional advantages beyond hours of coverage, of course. Many current collaborative services are based on geographic proximity but not subject or expertise. By seeking out the opposite situation—geographic difference but subject similarity—an engineering-oriented collaboration has appeal to both the service providers (us) and potential supporters of that service.

The Background

Librarians and other information service providers have been working in the digital/virtual realm since email became a relatively common mode for communication and information exchange. And soon after librarians began providing this service, they began writing about it. Appendix II provides a bibliography put together by Kate Lee that we have found useful in framing the issues associated with providing a collaborative, 24x7, real-time reference service to our clientele.

The Goal

Taking these aspects of the service in reverse order, then…

Real-time reference: We all recognize the value of face-to-face service across (or even better, side-by-side) the reference desk. Since that's not always possible, we use many tools as substitutes. Handouts and tutorials, websites, email, and the telephone all play roles in our service plans. All are "thin" in terms of their ability to capture all nuances of communication needed to provide the best possible service, of course, but of these only the phone can hope to put us in contact with our clientele in real time and allow us to provide truly context-sensitive assistance. Using the phone was something of a leap for librarians at the time of their introduction—many asked whether a librarian could do reference over the phone. It turns out we could, and it took almost another 100 years of progress in telecommunications to offer an alternative to the phone for real-time help. The current virtual reference desk (VRD) software packages from e.g. LSSI, Convey, OCLC, and others allow librarians to be where their clientele are: Online using the information tools we've worked so hard at (and paid so much money for) providing them. We now have that ability, so with the tools at hand the ELD and the Task Force agreed that exploring how we are, and could be, using these tools is important.

24x7 reference: What technology hasn't solved is how an individual or small group of them, can effectively provide service whenever our clientele might need it. Not because these needs aren't predictable. They are: Engineers are at work around the clock. And the engineers outnumber the engineering librarians, so the only way to hope to provide service at all hours is to work together to do so. [As per above, we don't need the internet or special software, to provide real-time help. It was, and is, possible by phone of course. Though the Task Force hasn't discussed this in any detail, it's worth pursuing whether creating a local number that would hook into an Engineering

Help Hotline routed to participating engineering reference desks is of interest to the membership.]

Collaborative reference: Combining the VRD software capabilities (web-based real-time communication, question management, and co-browsing in some cases) and the 24x7 demand for service, the need for cross-institutional collaboration becomes apparent. In fact, not only cross-institutional, but cross-time-zone collaboration is an obvious way for librarians to offer extended hours without having to stay up all hours. Assuming some sort of collaborative arrangement that solves the logistical, trust, standards, and funding problems described below, and based on the core hours noted by the Task Force (see Appendix III, item 3), the following coverage is possible with participants in just 5 time zones (UK/Europe, N. America east and west coasts, Australia, and NZ) around the world.

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
midnight-0100	London	London	London	London	London	London	
0100	London	London	London	London	London	London	
0200	London	London	London	London	London	London	
0300	London	London	London	London	London	Seattle	
0400	London	London	London	London	London	Seattle	
0500	London	London	London	London	London	Seattle	
0600	London	NYC	NYC	NYC	NYC	Seattle	
0700	London	NYC	NYC	NYC	NYC	Seattle	
0800	London	NYC	NYC	NYC	NYC	Seattle	
0900						Seattle	
1000						Seattle	
1100						Seattle	
noon-1300							
1300			New Zealand				
1400							
1500							
1600							
1700					Perth		
1800	Perth	Perth	Perth	Perth	Perth		
1900	Perth	Perth	Perth	Perth	Perth		
2000	Perth	Perth	Perth	Perth	Perth		Perth
2100	Perth	Perth	Perth	Perth	Perth		Perth
2200	London	London	London	London	London		Perth
2300-midnight	London	London	London	London	London		Perth

Figure 1: (Home Institution = New Zealand)
Core hours

If participants adopted the maximum hours for their typical service days (which means excluding Saturdays, since few libraries offer service then), coverage would increase as follows:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
midnight-0100	Perth	Perth	Perth	Perth	Perth	London	
0100	Perth	Perth	Perth	Perth	Perth	London	
0200	London	London	London	London	London	London	
0300	London	London	London	London	London	London	
0400	London	London	London	London	London	Seattle	
0500	London	London	London	London	London	Seattle	
0600	London	London	London	London	London	Seattle	
0700	London	London	London	London	London	Seattle	
0800						Seattle	
0900						Seattle	
1000						Seattle	
1100						Seattle	
noon-1300						Seattle	
1300						Seattle	
1400			New Zealand				
1500							
1600							
1700					Perth		
1800					Perth		
1900					Perth		
2000					Perth		
2100					Perth		Perth
2200	Perth	Perth	Perth	Perth	London		Perth
2300-midnight	Perth	Perth	Perth	Perth	London		Perth

Figure 2: (Home Institution = New Zealand)
Maximum hours

Note here that this increase is achieved while at the same time reducing the number of partners needed. Slight variations in who's doing what at any given hour pertain if you choose a different baseline time zone or set of institutions, but the basic coverage of Sunday afternoon through Saturday morning holds for all of the institutions. Also note that the above only considers participation from four or five institutions, so with the possibility for multiple participants from any part of the world, choosing complementary partner institutions would be possible. This could be done based on existing partnerships, common resources, etc., or simply to extend hours of service.

Limiting the number of partners needed to provide extended coverage of course becomes easier as each institution's hours become longer. But from the above we see that continuous coverage from Sunday afternoon through Saturday morning is easy to achieve even using only current "core" hours. True 24x7 coverage would require some libraries to extend their hours, which would be difficult to do. Fortunately, while 24x7 service is a goal worth striving for, if we fall short it will not affect most of our clientele. As dedicated as they are, even engineers (and especially engineering students) are not as likely to be at work Friday nights, many (most?) Saturdays, and Sunday mornings as they are the rest of the week. Hence the title of the report, which indicates that 24x7 may only be achievable within a certain (engineering) tolerance. If anyone will understand this, it's our clientele…

The Problems:

A more polite way to head this section would be "The Challenges", but when real people get together and talk about these things in real-time, they call them problems. The Task Force's discussions pointed out the following as important items to address as we move forward.

Logistics: Coordinating between time-zones, countries, university cultures, and individual librarians is challenging. (Sometimes it's difficult enough figuring out a time and place to get together with your closest friends!) This challenge, exhibited in microcosm by the challenges the Task Force's communication this year, is nothing new to any of us, and is probably the least difficult to overcome. With a commitment to make collaborative reference service work, the scheduling logistics are actually rather straightforward for any group of libraries, and for any individual library the staffing and scheduling issues are nothing new.

Trust: We all think, justifiably, that we are in the best position to give good service to our local clientele. While no doubt true (as Julie Arnold notes, satisfaction with state-wide services she's part may be lower because of the lack of institutional/procedural knowledge), we also realize that we have in common core skills we've developed as information service providers do indeed bridge institutions. We also can agree that some expert help is usually better than none at all, and that part of the service standards we would want to adopt must include guidelines and emphasis on referrals to local librarians when the remote helper runs into the inevitable technical, subject, or other roadblock.

Service standards: Related to trust, we all have different standards for what, per above, "give good service" means. (And for who we intend to give this good service too, as Ann Ready pointed out.) Again, the core skills and values we have developed as librarians can take us a long way towards agreeing what we do for whom, and when. For non-peak hours (where the local librarian will be the first choice anyway) most would say that some service from an engineering librarian—even it's not the local one—is better than none at all. Sometimes that help may take the form of "It looks like there's a problem with the local catalog/subscription to database X or journal Y." Even if the remote librarian can't diagnose or fix the problem, there's clear value in giving the questioner permission to stop beating their head against a wall and moving on until there's a local solution. (As Sharon Siegler put it, "At a certain point, we are no longer helping, but prolonging the agony.") Again, referrals become essential in this environment. Fortunately, we can trust our colleagues to make them. Finally, as is evident at every ELD meeting, the differences in our definitions of good service are a small area surrounding a large core of what we do agree on as defining good service.

Information products: Every institution offers a different mix of products (or the same products with different interfaces) to their users. We want, and need, to work with the resources our clients can access daily, using the interface that the client is using. Most (if not all) institutions deal with access questions of this kind regularly—adjunct professors and visiting researchers and other types of users all get access to some set of resources during their official affiliation with an organization. The remote librarian can be another type of user who gains access to local resources while serving clientele coming from that locale. Though this resource may not be the

one we're most comfortable with, the core skills we have as librarians will allow us to provide the necessary service.

Software standards for collaborative/virtual reference: Related to information products, this addresses the product we would use to provide service. This may be one of the most difficult issues to address—just as we need to use local resources when providing assistance, we'll need to offer that help via an interface the user is familiar with. Harking back to logistics, it seems unlikely we can get cross-institutional agreement on whether to use LSSI, OCLC's QuestionPoint, HumanClick or Convey (just to name a few in use by Task Force members)! While no standards exist right now, some (along the lines of a Z39.50 standard) are in fact emerging that might allow for information exchange between these products. NISO SC AZ is currently under discussion (see http://www.niso.org/committees/committee_az.html) and could provide a means for the packages mentioned above to exchange basic information.

Funding: The eternal question. Who's going to pay to pave (much less smooth) the road to a cross-institutional collaborative sits behind all of these issues. As mentioned earlier, nobody has the mandate to make this happen for their institution. However, a focused service like this, with a specific and easily self-identifiable clientele, may well have advantages that other collaborative efforts do not when it comes to securing funding. This is a situation where trying to move this forward through ASEE might have its greatest value. Organizations like ASEE and the International Association of Technological University Libraries (IUTAL, who have also expressed interest in the Task Force's work through Jay Bhatt) whose mission is to work for the common good of many and diverse members, are in the best position to offer support for collaborations such as this. ASEE is also in a position to market such a service both to its membership and beyond. While counting on funding from ASEE to do marketing or develop software, much less pay for the leg-work librarians will do to make this happen, doesn't make much sense, getting it on their radar does.

The Next Steps

The Task Force's work this year has focused on the specific charge of the Executive Committee. As a result it has laid out many (if not most/all) of the possibilities and problems associated with establishing a 24x7 service. We've described these in the report., and there are many challenges, not just as a cooperative but locally as well. Fortunately, many models exist for addressing these issues, and cooperative cross-institutional services—some subject-based, most not—have begun to appear.

Presentations and panels that ELD members (such as Julie Arnold, Jay Bhatt, Deborah Helman, Amy Van Epps, and Jim Ottaviani) have organized, participated in and attended make it clear that the field has plenty of room for a venture such as ELD's. As the information environment for engineers gets more complex the need for such a venture continues to grow along with the possibilities for it.

We recommend a continuation of the work begun by the Task Force, perhaps organized around the specific issues noted above. Since some issues are more along the lines of topics for

continued discussion than action, and some are the opposite, we also recommend that the ELD advise and assist in creating either committees or special interest groups to address them depending on the type of work involved.

Appendix I
Official Charge
prepared by the ELD Executive Committee

The 24x7 Engineering Reference Task Force is charged to investigate the possibilities and problems associated with establishing an international network of engineering libraries that would enable user access to basic/core engineering reference services and assistance 24 hours a day, 7 days a week (or as close to that 24x7 goal as is possible). The Task Force is charged to report its findings to the membership of ELD, either via ELD-L, the ELD Newsletter, or both, by no later than the 2003 ASEE Annual Conference. A report sooner than that date is welcome, as are brief progress reports as the Task Force proceeds with its work.

Appendix II
Survey of the Literature
Kate Lee, University of Florida
20 November 2002

First of all, what impresses most is the monumental amount of articles and reports that have been written on this topic in such a short time - just a handful of years. There must be a million articles; this reviewer only investigated ones listed in Sloan's bibliography. Next, in order to structure some sort of sense into the mass of information, themes had to be discerned. These four emerge: nature of the services, information infrastructure required to operate the services, software, and service quality or standards. There are several new books released, and one in press, that require a good investigation. Unfortunately these monographs were not available to me for review. The LC/OCLC project, QuestionPoint, seems to be one of the most exciting avenue for collaboration in 24/7 reference among libraries.

Books to browse:

> Digital reference service in the new millennium : planning, management, and evaluation / edited by R. David Lankes, John W. Collins III, Abby S. Kasowitz. Neal Schuman, 2000.
>
> Lipow, Anne Grodzines. Virtual reference librarians handbook. Neal-Schuman, 2002.
>
> Meola, Marc. Starting and operating live virtual reference services: a how-to-do-it manual for librarians. Neal-Schuman, 2002.
>
> Ronan, Jana. Live virtual reference: a guide to practice and policy. Libraries Unlimited, in press.

Articles

Boyer, Joshua. "Virtual reference at the NCSU libraries: The first one hundred days." In Information Technology and Libraries, vol. 20, no. 3 (http://www.lita.org/ital/2003_boyer.html/).

Coffman, Steve. "Distance education and virtual reference: Where are we headed" In Computers in Libraries, vol. 21, no. 4, April 2001 (http://www.infotoday.com/cilmag/apr01/coffman.htm).

Coffman, Steve. "We'll take it from here: Developments we'd like to see in virtual reference software." In Information Technology and Libraries, vol. 20, no. 3 (http://www.lita.org/ital/2003_coffman.html/).

Janes, Joseph. "Digital reference: Reference librarians' experiences and attitudes." In Journal of the American Society for Information Science and Technology, vol. 53, no. 7, 549-566, 2002.

MacAdam, Barbara and Suzanne Gray. "A management model for digital reference services in large institutions." In The Virtual Reference Desk. 2nd Annual Digital Reference Conference, October 16-17, 2000, Seattle, Washington (http://www.vrd.org/conferences/VRD2000/proceedings/macadam-gray1-01.shtml).

McClennen, Michael and Patricia Memmott. "Roles in digital reference." In Information Technology and Libraries, vol. 20, no. 3 (http://www.lita.org/ital/2003_mcclennan.html/).

Quint, Barbara E. "The digital library of the future." In Information Today, vol. 19, no. 7 (July/Aug.2002), p. 8-12.

Quint, Barbara E. "QuestionPoint marks new era in virtual reference." In Information Today, vol. 19, no. 7 (July/Aug. 2002), p. 50-54.

Sloan, Bernie. "Ready for reference: Academic libraries offer live web-based reference; Evaluating system use." July 11, 2001. Note: This is the final report for the Ready for Reference pilot project. A preliminary report is also available at: http://www.lis.uiuc.edu/~n-sloan/ready4ref.htm.

Conference:

Annual VRD Digital Reference Conference. These annual conferences are available in print and to some extent electronically (some presentations are replicated only by way of power point slides). All aspects of virtual reference are covered, for example: research, case studies, management, collaborative efforts, evaluating, training, technology, and general issues. The 2002 conference, the 4th, has just been held in Chicago, November 11-12.

Interesting websites:

http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm
"A registry of real-time digital reference services," and a lot more!

http://www.lis.uiuc.edu/~b-sloan/digiref.html
A voluminous bibliography, with updating, listing resources/articles available online and only in print.

http://www.csupomona.edu/~kkdunn/LiveRef/bibliography.htm
A bibliography, not yet investigated.

http://virtualreference.net/virtual/17.html
Another bibliography, not yet investigated.

Appendix III
Initial Survey of ELD 24x7 Task Force Members
prepared and compiled by Jim Ottaviani

Here are the summarized results of the first set of questions Jim Ottaviani sent around. Though I didn't hear back from everyone I did hear from most. The answers were pretty consistent, so I think we have some common ground from which to proceed!

##

(1) Do you have the desire (or mandate) to provide something along the lines of a 24/7 service?

Everyone said the same thing: We have the desire, but no mandate.

I'm sure the desire portion of the answer is at least in part the result of self-selection...if you didn't have the desire to at least explore doing something like this, you wouldn't have responded to the initial call for volunteers! I found it interesting that none of us had a clear mandate to provide this kind of service, though.

(2) Do you have the money/staff/desire to provide 24/7 service yourself?

Again, the responses were consistent: No to the first two, and (mostly) no to the latter. Almost everyone noted that to sustain a 24/7 service, or anything approaching that, will require a cooperative effort.

(3) What hours do you currently staff your reference desk?

	max	*min*	*core/majority*
Mon-Thu	8am-10pm	10am-2pm	9am-6pm
Fri	8am-5pm	10am-2pm	9am-5pm
Sat	10am-6pm	none	--
Sun	1pm-9pm	none	1pm-8pm

I came up with the core/majority category by eyeballing the responses rather than using a statistical method of arriving at the summary. So, that means that it looked like most of us made ourselves available at a reference desk during *at least* those hours. (And the absence of Saturday hours means that most of us didn't staff our desks that day.)

(4) What do you consider the least important hours to staff?

max	*min*	*core/majority*
8pm-8am	2am-7am	midnight-8am

(5) What is/are the least important day(s) to staff a service desk?

Friday evenings and Saturdays were the clear consensus, with some folks adding in Sundays as well.

(6) Do your faculty, staff, and students currently use online resources in many, if not most, cases to conduct their research?

Yes, through and through and agreed to by all. No surprise there.

(7) Do you currently work cooperatively with other libraries on service-related projects? (Leave aside ILL for this one...)

For the most part, the answer was no with regards to working with other universities. Maryland and MIT, however, are indeed collaborating in this way, and I that's wonderful! We will certainly want to learn from their experience in setting up and working within such cooperatives.

(8) What, if any, software packages are you working with to provide remote/virtual reference services?

> Here I'll let you speak for yourselves, since the answers varied widely…
>
> Auckland: MSN Messenger a little. Still working on choices.
>
> Canterbury: RAKIM software for our online help trial. We have been trial-ing this since April this year, providing a limited online help service using staff from all of our libraries on campus.
>
> Lehigh: We're using InstantService (http://www.instantservice.com) for chat reference. It's actually not bad, especially as it's free. It doesn't have co-browsing (unless you get the paid version). We've been working with it for almost a year. The software works but our users have been sparse.
>
> Manitoba: LIVE PERSON
>
> Maryland: We have been using HumanClick to offer Virtual Reference service since April 2001.
>
> MIT: LSSI's Virtual Reference System
>
> Michigan: QuestionPoint
>
> Purdue: We have recently finished a pilot project using Convey Systems. We're in limbo for virtual reference until the administration reads the report and makes a decision to continue with the service, and with this product or another.
>
> Wisconsin: We are currently using Convey Systems' OnDemand software that is branded for our campus environment. I'd happy to give a full report on our first full semester of implementation. http://www.library.wisc.edu/libraries/reference/livehelp/index.html

Finally, here's a comment Sharon Siegler made:

Now for what I consider the major sticking point of 24/7 cooperative reference. Most of us have electronic services (largely abstract/index services, but some electronic books, journals, and datasets) that are restricted to our users. Authorization is usually by IP. Our local problem with cooperative reference is that the most likely places to find the answers won't be available to users who aren't members of our institutions. I'm hoping that the ELD group will actually not have this problem because we're most likely going to field "engineering" questions and will all have at least a basic set of electronic reference tools. However, the interfaces are likely to vary, some more than others. When you have to step a user through complicated interfaces, will we be able to do it all, let alone in a timely manner? (Lehigh)

I agree that this could be an issue, and is something that we would need to work out. I'd be especially interested in what the folks who are already part of cooperatives are doing about this. My initial thoughts are as follows:

First, in my experience, most users most of the time only need fairly basic help. This is especially true for people who ask for assistance during the non-peak times (again, in my experience) and during peak times for a particular campus, local librarians will be the first choice for picking up the questions anyway, so the point is moot. So assuming off-hours, and assuming the question is fairly basic, a simple priming of the right pump in the form of one of the core engineering research tools such as Ei, will more often than not be enough to get the person going. If that won't be enough, then a referral out to the local librarians the next time they're available is the next step -- and should probably be done automatically regardless of the question.

(That said, technical problems, such as inability to connect because of login or hardware issues will be much more difficult to resolve by folks from a different institution, though. And these things can happen at any time.)

Second, here at Michigan (UM) we would almost certainly offer our 24x7 collaborators "adjunct" status, and could do so without abusing either the intent or the letter of our licensing agreements. That way a partner librarian from another institution would have full access to all our resources so when a question comes in from a UM student they can provide help in the context of the resources available here. Yes, there are many interfaces to master, but harking back to the first point, my guess is that we can focus on a few instantiations of Ei, INSPEC, Science Citation Index, and our partner's catalogs/OPACs and cover the vast majority of the questions.

None of this is trivial, of course, which is why we're doing the Task Force. But none of it is impossible either, I don't think!