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Introduction: I Want My Flying Car

R. David Lankes

ABSTRACT

Introduction

The TV commercial had it right. An actor stands by a busy highway and asks where are the flying cars we were promised in science fiction of the past. Many visions of the future – flying cars, video phones, jet packs and the like – have yet to materialize. The promised revolution of technology seems like an empty dream – hype that died with the implosion of the dot-coms and the high-flying stock market of the late 1990's. Is digital reference also going to be a casualty of the Internet hype, and the more mundane reality?

In his opening comments at the Library of Congress' 1998 Institute **"**Reference Service in a Digital Age", Thomas Mann took issue with the concept that we do indeed live in a digital age (Lamolinara and Grunke, 1998). As he looked around, he saw a huge body of human memory encoded in physical media like paper, stone tablets, and papyrus. He looked at the healthy book publishing industry and the fiction of the paperless office and concluded that in fact, we do not live in a digital world at all.

My visits to libraries and discussions with educators and librarians around the US attest to the very real physical issues that face reference today. Certainly library stacks are not

going empty, physical facilities are not contracting. Also, when libraries do go online they are far from swamped by users lining up in cyberspace to ask questions. So why the big emphasis on DIGITAL reference? After all, isn't it just reference anyway?

Before I convince you to put down this book (a paper book at that!) let us take these issues one at a time. Also, let us look at these issues not only as they stand today, but how we see them evolving in the future.

Argument 1: This is not a Digital Age

This argument centers on the concept that we are limited in what we can do with reference in a virtual environment (namely the Internet). The argument has two faces. The first goes as follows: why should an organization accept questions online when the answers will require users to come to a physical space to get a physical information source (such as a book or video), or access to a physical computer? The other argument is more a question of where the users are. Why should an organization invest in digital reference when the users are at the desk, and they outnumber the users that come through virtually, via e–mail, real–time software, or instant messaging?

I argue that we are in fact in a digital age. The fact is that we live in an amazing time, technologically. We can converse with people halfway around the world for pennies on cell phones (which increasingly use digital, rather than older analog technology) that allow us to go anywhere. We have computers that can bend reality in images and movies. Entire movies have been made within the sound stage of RAM and CPU. Our entire lives

are dependent on digital technologies, at least in the developed world. The overwhelming majority of the books produced in the world are digital at one point or another…whether they were authored in a word processor, or sent to the press in some digital mark-up language like SGML. Paper has in many ways become simply another interface that eases distribution and commerce. Nowhere is this more evident than in the music world, where Internet services like Napster and Morpheus have shown that while people may buy a CD, it's the music that is important, not the transport. The 1s and 0s stored on music CD's, once "ripped" from its aluminum prison of pits and planes, become fluid information that can flow through the Internet, into computers and special devices without a care in the world as to what container they are in. I regularly walk around with over 1,000 songs on my hip.

At home and the office, I am no longer bound to a set of wires sticking out from walls: the network flows wirelessly through my work space. In fact, I can fly into major airports, cross over bridges, even take trains where I can surf the web with no more effort than turning on my personal organizer. At least in the developed nations, we are in the digital age.

While it is true that a huge volume of recorded human knowledge exists in static, physical form, the percentage of that information to the total volume of human knowledge shrinks with every passing second. Just consider that experts have estimated that the amount of information in the world DOUBLES every 18 months (Wurman, 1989). Therefore, if print information constituted half of our information today, it would

be a quarter in 18 months, and by the end of the decade only about 1/72 of our information. Now I know that assumes that all of the items printed are available in some electronic form, and I understand that the newly digital information does not replace the print information, but it does put some things into perspective. I would argue that we have become rather proficient in organizing print information. We have good inventory and cataloging systems for physical items like books, videos and journals. I would further argue that we have a very long way to go to match these organizational skills in the digital world. Today the largest aggregation of digital information available to human–kind is the Internet. Do we feel it is well organized?

That is not to say that there isn't clear evidence that the Internet and digital resources aren't useful, or can't be used in many ways to replace physical sources in digital reference transactions. Joe Janes and Charles McClure (Janes and McClure, 1999) found that:

"Taking all of the data into account, it appears that for these questions and for these subjects [those used in the study], the use of freely available, Web-based resources are roughly equivalent to the use of other resources."

Now, to be sure the McClure and Janes study is by their own admission limited (primarily by experience and number of reference experts). However, it does imply that for a certain set of ready-reference questions already the web will work just as well as paper resources. As publishers continue to make information and reference resources available only in digital format this will only be more so.

Argument 2: Even if We Live in a Digital Age, Users can't Access It

This argument is frequently expressed in terms of the "digital divide" or the "information have-nots," but boils down to a general statement along the lines that "not everyone has a computer." This, of course, is true, but increasingly less so. Less so in that access to computing and the Internet is increasing, and having a computer is becoming increasingly irrelevant. Let me address those points separately.

While there is a sizable portion of the population that does not have access to the Internet, We nonetheless live in a connected, high-tech world. Consider that at least 51% of all U.S. homes have a computer and 41.5% of all U.S. homes have Internet access[1]. In the United States two million new users connect to the Internet every month[2] with nearly half the population of the US now online! Also consider that 90% of children between the ages of 5 and 17 (or 48 million) now use computers and 75% of 14–17 year olds and 65% of 10–13 year olds use the Internet. As the U.S. Department of Commerce states:

"With more than half of all Americans using computers and the Internet, we are truly a nation online. At work, schools, and libraries, as well as at home, the Internet is being used by a greater number of Americans."

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[1] http://www.digitaldividenetwork.org/content/stories/index.cfm?key=168
[2] http://www.ntia.doc.gov/ntiahome/dn/html/EXECSUM.htm

The second point is that a computer is no longer necessary to access the Internet. Today cell phones, personal digital assistance, public kiosks and special low costs "Internet terminals" provide access to millions of non-computer users. News, weather, jokes and instant messages flow from servers to the air waves and into the pockets of business men and teenagers alike. Commuters read e-mail on pagers, and a whole new generation of smart phones are about to allow anyone with a phone number to surf the web in full color. We've even seen the first computer virus released that infects cell phones. People can now configure their car stereos, home security systems and watches through a web interface. Why not ask reference questions through these devices – anywhere the question hits the user (cab, subway, beach vacation)? In many ways, the US is behind the curve in this arena. While the number of wireless phones is about to exceed the number of wired phones in the US, this has been the case in Europe for some years. In the Philippines cell phone networks are fighting congestion not from voice calls, but instant messaging done with cell phones.

This is not to say that the whole issue of digital divide and underserved populations are unimportant, or that the problem of connectivity is solved. Libraries and schools still make up a valuable safety net of Internet access for the "have-nots." However, that is not my point. My point is that a huge population of users is now online, and looking for information. They are technology-savvy and have increasingly diverse means for accessing an increasingly diverse set of information. Digital reference is a means for meeting these users where they need help the most.

Argument 3: Even if They are Online, They're not Coming to my Digital Reference Service

Here it is, the most compelling argument against digital reference – where are the users? This is the question that has even the most ardent supporters of digital reference frustrated. The story is common: a large outlay in resources (time, money, staff time) to set up a digital reference service, followed by 6–20 questions a week. If digital reference is in fact the future of reference then why aren't users flocking to it?

I really wish I had a simple answer to this argument, but I don't. Rather I have some conflicting evidence, and some educated guesses (I'm an editor, I'm allowed). First, are we that surprised that digital reference statistics are low in light of falling reference statistics in general? A look at ARL reference statistics shows a precipitous drop in the overall number of transactions being reported (see figure 1).
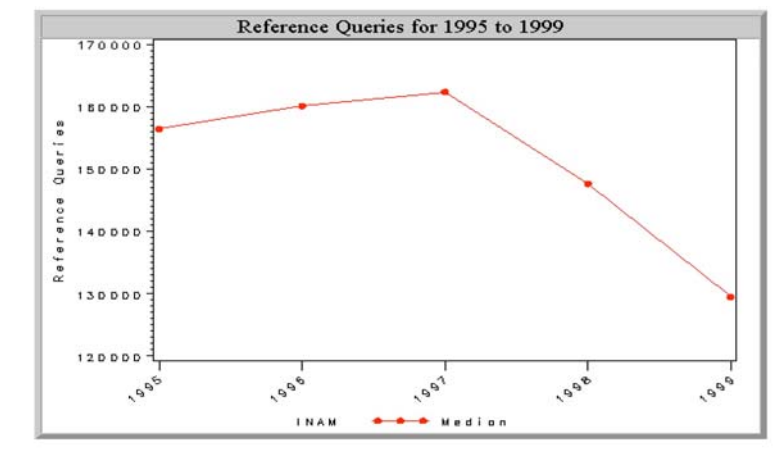

Figure 1: ARL Reported Reference Queries

The fact is that even as traditional reference counts have fallen, I have never seen any published numbers that show digital reference queries have decreased. They may not be growing as fast as we would like, but are they declining like face to face reference?

Also, even these numbers are not consistent across libraries and digital reference organizations. Take a look at Cleveland Public Library (CPL). Their 24/7 service has reported usage at over 200 queries a day! In non–traditional services like the Internet Public Library and AskERIC (both located at library schools), reference numbers can easily exceed 300 questions a day. What do these services have in common? They are all services catering to the Internet population and have spent considerable effort to market their services. CPL did interviews on National Public Radio and CNN. AskERIC regularly exhibits at conferences and mails out posters. The Internet Public Library seeks out press coverage. These services are out there to be seen, targeted to their user base and not hidden twelve layers down on a web site. Libraries long ago abandoned the idea of "build it and they will come" and turned to actively engaging a service population. Digital reference must avoid the same trap.

My last point on this argument will draw upon remarks made by Steve Coffman at the ACRL Annual 2001 Conference in Denver. His point was that current digital reference software is in its infancy. The eventual form of digital reference is not yet known. Will the future be framed web browsers with a chat session snaking from top to bottom on the side? Will it be a set of web forms, or e-mail programs? Will it be video, or voice over

IP? The future is yet unknown. Perhaps users are put off by the existing interfaces. Who knows? There is no report of usability testing in digital reference.

In fact, there is little mention of the user at all in the digital reference literature. In a the study Melissa Gross commented, "In the midst of this the voices of users' and non-users' are largely missing. The general attitude appears to be, 'if we build it they will come.'" (Gross, 2001). If we don't ask the user what they want, if we don't include them in the design process, is it any wonder they vote with the feet (or lack there of).

So What do we Know?

Everett M. Rogers in his studies of adoption of technologies posits four stages of technology adoption: innovation, early adoption, adoption, and late adoption[3]. Innovation is seen as the cutting edge, where those organizations and individuals who are willing to deal with high levels of ambiguity and frustration (including false starts, or technologies that seem promising and then disappear) experiment and refine a technology often for the sole satisfaction of being first or new. The second stage is of early adopters, who see the early signs of success with a technology, and get involved at a point where the technology is nearing stability, but is still expensive and hard to find. Adoption is the stage where technology has been stabilized, costs minimized, or at least well understood, and the technology is widely deployed and understood. Late adopters are those that lag behind the majority in taking to a new technology either due to an installed technology

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[3] He actually named four types of people, innovators, early adopters, adopters and laggards.

base, or simply a strong resistance to change. It is arguable that digital reference has entered, and in fact come to the end of the early adopter phase.

That may come as a surprise to some. However, digital reference (also called e–mail reference) has been around for almost as long as e–mail itself. Certainly the earliest literature on it stretches back to the mid–1980's. Large scale digital reference projects like the Internet Public Library and AskERIC have been around since the early 1990's. Early adoption can be seen with the advent of the Virtual Reference Desk Conference (on which this book is based), the first commercially available digital reference systems (LSSI, 24/7), and the first shedding of failed process models (where.com learned that it is at best difficult to charge end–users for reference services).

This is not to say that we are actually ready for wide-scale adoption of digital reference, or that large-scale adoption won't present challenges that will need to be solved. For example, in the predecessor to this book (Lankes, Kasowitz, Collins, 2000) I put forth two major challenges for digital reference: scalability (the ability for services to grow) and ambiguity (identifying the resources needed to meet users' needs before answering a question). While there is an increasing exploration of networked digital reference service (Lankes, Kasowtiz, Collins, 2000) in existing or new consortia to solve the scalability question, there is still much to learn. Further, the issues of ambiguity remain nearly untouched, just now entering the research stage (EduRef, 2002). Also, issues such as training and quality standards are only now coming to light, both clearly issues

concerning adoption as early adopters and innovators are often too focused on getting the technology to simply work to worry about transferability.

With all this said, however, the field of digital reference is increasingly ready for wide adoption. A market place for digital reference software is emerging with diverse players starting to compete on features and cost. Training and instruction is starting to be developed, a rich literature base of case studies (this book included) now exists to develop a more generalizable and robust research–based concepts in digital reference.

Moving from a Field of a Thousand Flowers

At the end of the 2001 Virtual Reference Desk Conference Charles McClure called for a new approach to digital reference, and particularly digital reference research and development. He characterized the current work as a "field of a thousand flowers" approach. In this approach a thousand seeds are sown in a field hoping that some will grow. In other words, the current literature on digital reference represents many individual investigations with little synthesis, or common structure. He called for a new cooperative approach. In this approach a general research and development agenda in digital reference would be set by the community. Organizations would pool common resources to come up with solutions to common problems like quality definitions, technical standards, licensing of resources, the reference interview, and marketing among others. The results of these joint investigations will be made available to the whole community so that we can move forward faster, and with a more complete picture. There

are good examples of that approach represented in this book on quality standards, consortia, and technical standards. Yet more needs to be done.

A Call to Action

Cliff Lynch called the digital reference community a movement. I have talked about an ongoing "reference revolution." These are apt descriptions of digital reference, but both imply action and involvement. If you are reading this book, you are interested in digital reference. You may be a librarian employed in a library that has a digital reference service, or investigating one. You may be a student trying to understand what digital reference is all about for a thesis, or future employment. Perhaps you are a business man investigating a new business opportunity, or means of improving customer support. Perhaps you are a government employee seeking insight for policy development or a new project. In any case, you have a choice. You can get involved now, join the dialog and help shape digital reference's future, or you can wait and see what happens. Perhaps I am wrong, and this book will end up describing a flying car – an attractive idea that never sees full reality. Whatever the case may be, now is the time to get involved. Start a service, go to a conference, join a listserv, e-mail the authors of these chapters, whatever, but be an early adopter and innovator. It is more fun to invent the future than to dismiss it or wait for it to happen.

REFERENCES

EduRef (2002). "Integrating Expertise into the NSDL: Putting a Human Face on the Digital Library." [Online] http://www.eduref.org/eduref/Default.htm

Gross, M. (2001). "What About the User?" Quality Study Bulletin 080102. Available from the Information Institute of Syracuse [online] http://iis.syr.edu

Janes, Joseph, 1962-; McClure, Charles R. **Source:** Public Libraries v. 38 no1 (Jan./Feb. 1999) p. 30-3 **Libraries:** 854

Lamolinara, G. and Grünke, R. (1998). "Reference Service in a Digital Age." LC INFORMATION BULLETIN August 1998. [Online]
http://www.loc.gov/loc/lcib/9808/ref.html

Lankes, R. D. and Kasowtiz, A. and Collins, J. (2000). Digital Reference: Models for the New Millennium. Lankes, R. David, Collins, J. & Kasowitz, A. S. (Eds.). New York: Neal-Schuman.

Wurman, R. S. (1989). Information Anxiety. New York : Doubleday