

Evangelizing the Internet among Academics

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PR vs. Promise

The promise of the Internet for the modern university is to simplify and enable new modes of interaction for scholars, teachers and researchers. While advances in technology have made this promise increasingly viable, the Internet's visibility — its use and its recognition factor — on a campus like UC Berkeley remains surprisingly low. I say this especially in regards to the Humanities, where my background is, but I do not think that the problem is unique to Humanists.

Abstract

The promise of the Internet for the modern university is to simplify and enable new modes of interaction for teachers, scholars and researchers. While technology has made this promise increasingly viable, the Internet suffers from a surprisingly low familiarity on major campuses like Berkeley. In this paper, I would like to do two things: first, present the point of view of one academically trained person on why this differential exists between the technology and the community for which it was created; second, discuss some efforts at Berkeley by the Workstation Software Support Group to reach out to the campus with information about Internet resources.

The general lack of awareness of the Internet can be attributed in large measure to what I call the "pc paradigm." That is, personal computing is still perceived as working on a stand-alone personal computer on one's desk. The reasons for this are myriad — indeed, everything from vendor advertising to the offerings of a campus computer store can be implicated. But one can also argue that the Internet has not been presented as a resource to academics. Currently, the individual must find his or her way to the resources within it, often through chance encounters. I suggest that we should learn from the confusion that has sometimes marked the integration of the personal computer into academics. We should choose to evangelize the Internet.

In the second half of this paper, I discuss a prototype Gopher workshop to be offered to campus departments, in which we introduce Internet resources. As I intend to show, it is important that the proper resources be emphasized, and that they be represented as tools, just as the personal computer is now seen as an indispensable tool for the academic. Without aspiring to "over-sell" the Internet, one can demonstrate how its resources will mean evolutionary change for the whole scholarly enterprise.

In this paper, I would like to do two things. First, I would like to offer a perspective on why this disparity exists between the promise and the reality of the Internet. Second, I would like to present a case for *actively* overcoming this disparity.

It is my contention that the Internet is suffering from an image problem. This may seem to be a contradictory claim, when the Associated Press San Francisco Chronicle produce large features on "surfing the Internet", and when Vice President Al Gore's championing of an "Information Superhighway" is part of the evening news. Still, the Internet remains an enigma among large populations on UC Berkeley. While it has become part of the popular imagination, access to it remains illusive. The reason why, I believe, is that sections of the university community have not achieved a "critical mass" of interest in, or awareness of, the Internet.

To give a context for this, let me bring in my own anecdotal experience. While a PhD student, I spent two years as a teaching assistant for an "introduction to computers" course for non-science students. On the basis of this course, I can say that we imparted a fairly good understanding of microcomputers, of various applications, and an introductory knowledge of computer programming. However, this course did not prepare students, let alone me, for using most of the Internet's services. I also had no real inkling of the resources available on the Internet. The course itself, in reflection of what the university recognizes as basic skills for computers, was designed around the use of stand-alone computers. This fact remains true today, although the

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course itself has long been taught in a networked laboratory.

The PC Paradigm

The paradigm for computer use in academia, or at least in the Humanities, is still the stand-alone personal computer. There are several factors related to this. The first factor is simply that the PC has largely been marketed in this country as a stand-alone machine; this remains true whether you are looking at advertised products or at the bulk of journalism about computers. Networking is becoming more integrated into the mass market for PC's, but it remains essentially a specialty issue.

A second factor in the PC paradigm is that, the PC has served academics, especially in the Humanities, *primarily* to replace old tools like the typewriter, the notebook and the notecard. The PC has also opened up a number of new tools to the academic, from bibliographic databases and linguistic analysis, to interactive programs for instruction. But the majority of these tools are also based upon the stand-alone PC; their usefulness may increase through networking, but their premise is the single computer and user.

Of course, many academics do use mainframe computers; that is, they use their PC's as dumb terminals to connect to mainframes. In one sense, this is not even the PC paradigm, but a throwback to the older Mainframe paradigm, where PC's are slightly more useful than the average dumb terminal because you have local storage capacity and can easily down- and upload files.

A third factor in the continuance of the PC paradigm is a lack of what one might call a "critical mass" for the change of paradigm. While relatively few use the Internet, there is no great incentive for others, especially the more reluctant, to make the move to using network resources. As a minimal skill, it suffices to be able to use a modem and connect to one's own school's library catalog. While exploration of the Internet is a skill pursued and valued by few, it cannot be integrated into an academic discipline's program for outfitting new students with skills. And while it is understood by few, there is often no local resource for others to take advantage of.

Historically, there have been far too many difficulties involved in using the Internet for it to be generally of value. As all of you know, this is changing rapidly. With the introduction of new user-friendly applications for traditional Internet activities such as ftp, and especially with the introduction of information server protocols like

Gopher, we are at a new cusp in the development of information technology. It is time that the PC paradigm be replaced in academia by the distributed information paradigm. But if we expect academics to grasp this change, because, after all, they embraced the PC, then it seems to me that we ignore a vital fact: the personal computer obsoleted the old tools, while the distributed information paradigm means supplementing old tools, as well as the construction and introduction of new tools.

The Distributed Information Paradigm

If we take the number of Internet guidebooks as a measure of its integration into academia, we might be enheartened to think that the paradigm shift is already occurring. But its value is still not clear to many. The Internet has an unbelievable myriad of resources, but won't replace the library, the journal or the professional conference any time soon. The role of the Internet is more subtle. Its immediate benefits are an enhancement, not a revolution. As such, it should not be oversold; overselling the Internet risks both its and the messenger's credibility. It should be sold for its existing strengths, which are the sheer volume of its collective memory and the accessibility of its resources. This is a combination that no physical library or campus can match.

I would like to turn now to the positive side of this presentation. It's always one thing to say what's wrong with the current situation, whether or not one's right; it's quite another thing to try to suggest a solution. In the following, I would like to do three things: 1) discuss what I consider are the necessary academic tools available on the Internet; 2) discuss a sample short course on accessing the Internet taught here at Berkeley; and 3) finally, give the outlines of an experiment we will be trying in the fall 1993 to evangelize the Internet among language/literature students and faculty at Berkeley.

Gopher: Tool of Choice

I'll gladly admit to not being original in this, but the Gopher protocol seems to be the most important basis for presenting academic tools on the Internet. Let's review its strengths: 1) it is simple, based on a menu metaphor that can be reproduced on the simplest character-based screens; 2) it allows for user customization with definable "bookmarks"; 3) depending on the capabilities of the client, Gopher can give you easy access to other Internet services, such as Telnet, or it can allow you to download files, essentially replacing the recondite FTP way of doing

things; 4) perhaps most importantly, it is distributed, so that the user need not know what host he or she is connecting to. Finally, 5) Gopher also supports indexing and searches, and with gateways to other protocols such as WAIS, it gives even unsophisticated users access to nearly every kind of information on the Internet.

What, then, can an academic get from the Internet? The first tool is an account on a reliable Internet host, often a shared UNIX machine. As a new user, if you're lucky now, your institution will support PC-based email clients, or a full-screen email program like PINE, which makes using mail akin to Gopher: menu-based, simple choices, with a variety of capabilities for the more advanced. Email allows the academic to stay in contact with colleagues all over the world for free, which should be reason enough for most academics to take part.

This brings me to my list of valuable tools currently available via Gopher on the Internet. I've appended a few comments about their value and limitations.

- 1) Electronic campus phonebooks and email address search engines (netfind, for instance). Email remains the single most important resource on the Internet for the Humanities academic.
- 2) Electronic discussion groups. These are based, of course, on the standard email paradigm, but they are valuable for creating and sustaining academic discussions. Gopher serves as a repository of existing groups and the subscription procedures.
- 3) Electronic library access. Again, Gopher is an invaluable resource for listing available catalogs.
- 4) Electronic journals. Although not many in number, they serve as harbingers of the future, where small groups of specialists can afford to have a journal dedicated to their particular subject matter.
- 5) Electronic texts. These are an asset whose value will grow with time. Right now, there are relatively few texts available, despite the existence of a number of diverse projects. One hurdle that stands in the way of general acceptance: scholars generally must quote from one or maybe two accepted scholarly editions, and etexts are, to my knowledge, not necessarily generated from these. Yet the ability to search and index etexts promises to ease a number of kinds of empirical research.
- 6) Electronic dictionaries, thesaurus, reference works. Obviously, most people will have dictionaries in their own word-processors or even hard copy, but these resources allow you to check a few sources at once. Especially useful is the Oxford English Dictionary, which is a fairly expensive item for an individual's office.

- 7) Finally, let me just mention a blanket "electronic information of all kinds." This can range from a school's admissions policies and its local eateries, to the president's press statements, to federal statistics, to weather forecasts, to state department advisories, and so on. While this is the kind of information that best shows the potential of the Internet for distributed information, it is the least likely "hook" to draw new users in.

This list is by no means original; I've seen a number of "gopher holes" where exactly this kind of information is gathered for the academically minded user. One that I know well is the "virtual reference desk" at UC Irvine. Others are at University of Oregon and Skidmore College. The point here is not that every gopher hole has to copy this approach, but rather that it is vital that Gopher administrators either 1) look into what academic users want or might want, and provide easy access to it; or perhaps more cleverly, 2) invite academic users or units to maintain their own gophers, which may well produce other resources that I haven't even thought of.

Another thing that we should notice from the list above is that it is almost completely text-based. Essentially, I am proposing that we can present the Internet to Humanists as a vast series of searchable text catalogs. For anything that is in unadorned text form, the Internet is the ultimate medium for its dissemination. There is, of course, a whole side to the Internet that is anything but text: Internet talk radio, multicast broadcasting, tremendous graphics libraries, boundless software libraries. But the issue here is what will get academics to use the Internet in sufficient numbers to create a "critical mass." I believe it is simple text that can hook the academic today.

Creating Critical Mass

In February of 1993, my colleague Aron Roberts and I organized a short course called "Berkeley and Beyond." It was designed as a rapid and superficial introduction to the Internet for staff members within the Undergraduate Affairs unit. We decided to use Gopher for its ability to serve as gateway to other services like Telnet, as the broadest based tool for introducing the Internet. The participants were a self-selecting group from a larger training group. The course involved an introduction on the Internet and Gopher, and then a number of guided "ventures" out into the Internet. Recently, we conducted an informal survey of participants. Email remains the most common usage for users, but a number of participants reported having expanded their horizon with gopher.

Building on this, I will be starting a pilot project this fall for

evangelizing the Internet. My intention is to offer a course to a target set of departments as a resource for creating a local "critical mass" of interest in the Internet. These departments are mostly "language or literature" departments, with History being the notable exception. They can all be found in Dwinelle Hall on Berkeley's campus; Dwinelle lends itself to this purpose, because a new networked computer lab has just been established. Departments will be invited to arrange a workshop for its faculty, staff and graduate students (undergraduates as space allows). Experienced users will be invited to bring "cheat sheets" of resources they commonly use.

The basis for this introductory course will be twofold. On the one hand, we want to attract even the absolute neophyte with the lure of free electronic mail for everyone. (This will be a reality this fall at UC Berkeley thanks to the UCLink project.) On the other hand, the course should indicate both to neophyte and to more experienced emailer that the Internet is quite "navigable." The tool of choice will be Gopher.

The laboratory is equipped with networked Macintoshes running MacTCP software (allowing them to act as Internet hosts). For the purposes of hands-on work, we will recommend TurboGopher, but I will also demonstrate Unix-based clients, since I anticipate that most participants will be using, at least part of the time, dial-in "dumb-terminal" access to their share Unix accounts. Another reason for using Unix as the least common denominator is that, although the campus is heavily invested in Apple Macintosh, many faculty and students have DOS- and Windows-based computers.

The course will bear a title something like: "Email and Beyond: Surfing the Internet for Beginners." Tentative content is as follows. Handouts will document for participants how to find more information.

- 1) Brief introduction to the course.
- 2) An introduction to the Internet.
- 3) What can you do on the Internet?
- 4) Getting out onto the 'Net.
 - a) Demonstrate the Unix Gopher client and TurboGopher. Get to the faculty-staff phonebook and look up (Chancellor Tien, a participant, whatever) using both clients.
 - b) Have participants "find" examples of the tools I mentioned above with either the Unix or Macintosh client. With hand-outs organized as illustrated in figure 1, it's possible to give explicit instructions and illustrate what the ultimate goal is. The idea is that

the user can use layered window titles to navigate the appropriate series of menus.

- c) Possible goals:
 - i) Stanford faculty staff phonebook
 - ii) Irvine's virtual reference desk for list of discussion groups
 - iii) Telnet to the library of congress catalog — look up Internet!
 - iv) Examine an electronic journal (hopefully, a pertinent one will exist for every field....)
 - v) Look up a word on electronic dictionaries
 - vi) InterNIC and various "getting started" documents
 - vii) Veronica for searching gopherspace
- d) Extra credit hunt:
 - i) Berkeley's weather?
 - ii) NASA photos (download onto the Mac and view!)
 - iii) Usenet news? Berkeley's local news?
 - iv) Check out Sumex-Aim, archive for Mac software and info

5) Evaluation & Questions

My intent in creating this course is to introduce members of a department to the Internet and its resources. I believe such courses are necessary because the conditions do not yet exist in the majority of the target departments to get this information disseminated. The course is a first experimental step designed to create a center of "critical mass" that can increase the visibility of the Internet, and allow the campus as a whole to enjoy the benefits it offers. As a pilot project, it will certainly be revised over time. It will also help answer the question whether the lack of information is preventing university community members from participating on the Internet. At SIGUCCS, I will summarize the results.

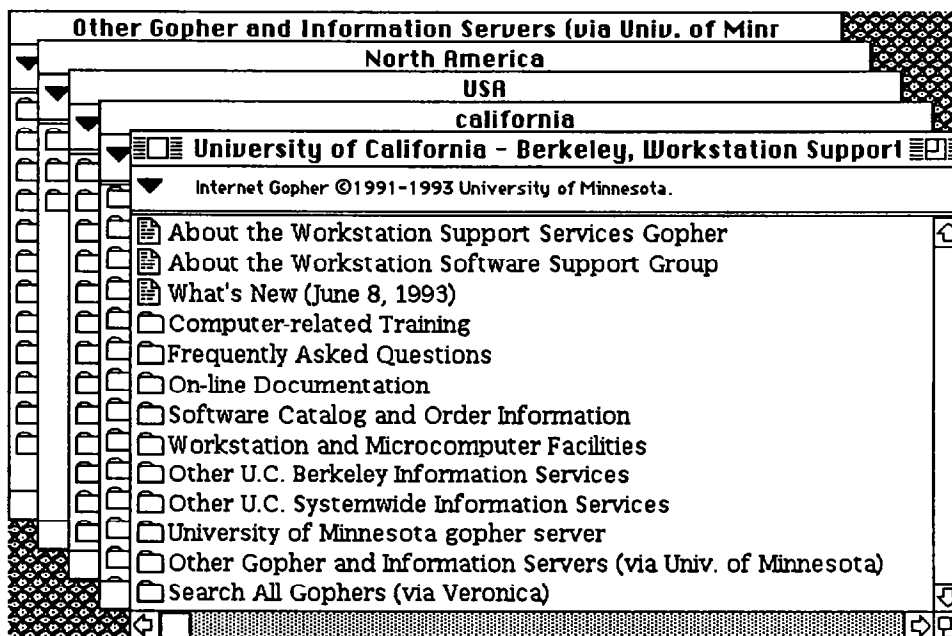


Figure 1.