E-mail: An Expedient or Impractical Method for Reviewing Manuscripts?

I appreciate the cultural and social impact that e-mail has had on our world, as well as the information to business and industry that is available to the user by accessing the Internet. However, when it comes to using either medium for scientific manuscript review and publication, I am concerned about the lack of hardware and software platform standardization, and I also question the actual simplicity of the system used by Andrew Appel (1). Probably of greater concern for me, though, is the slow growth of security systems for maintaining confidentiality.

Although Appel personally has little paranoia about electronic theft of prepublished material in the physics or computer-science industries, I believe undetected and prevented illegal activity could be detrimental to those whose funding and tenure is contingent on the publication of research papers. Specifically, in the area of scientific research in the life sciences, turnaround times have a tendency to be quick, especially for research findings that reveal scientific breakthroughs with global implications. Therefore, the possibility exists for litigious consequences from authors whose work has been subjected to alteration or any other unauthorized manipulation because of the current lack of regulation of the Internet. Moreover, the use of cyberspace exclusively for correspondence and manuscript review and publication promulgates a dangerous reliance on an as yet relatively unperfected medium, not to mention the assumption that everyone else not only uses e-mail and the Internet but is adept at the requisite manipulation of the system to produce the required results, that is, the receiving, sending, and archiving of manuscripts and manuscript reviews.

The actual case scenario in which Appel is involved is an impressive example of an effective and well-organized process, and the number of online journals is increasing as well (2,3). Furthermore, as publishers gravitate toward using electrons rather than ink

(4), and librarians are recognizing the cost benefits of subscribing to electronic versions of journals (5), this may indeed prove to be a growth industry in all disciplines. I personally know of 1 company that has implemented a successful peer-review and publication process using their in-house intranet system.

However, globally many journal offices in other disciplines where manuscript theft is not unheard of may for the moment want to maintain a manual system of manuscripts, and their subsequent review, receipt, and delivery—such as fax machines and contracts with overnight express-mail vendors—until a standardized platform of security software with proven effectiveness is readily available. This is in addition to having the appropriate type of data backup system to protect all electronic media during the increasingly infrequent but still inevitable downtime of networks, hard drives, and even fax machines. Even for those on the cutting edge of technology, it may be somewhat impractical to have all manuscript review and publication operations coordinated exclusively through an electronic mail-based system, which also will experience downtimes because this type of environment is not controlled by 1 central operating system (which may be the most recognized benefit of the Internet), but comprises individual systems—all with unique quirks and anomalies—linked to one another.

Another question is how will systems operators of the local access providers and commercial carriers respond if and when clients' electronic databases, as well as their array of file folders, increase in volume? Although clients ultimately are responsible for maintaining their own systems, will system operation personnel be availed the opportunity to review and purge files that appear to affect the provider's service to other clients? Worst-case scenarios regarding a company's right to "review" its employees' electronic communications—based on the

premise that the Internet access is funded by the company, thereby justifying an invasion—have increasingly been featured by the print and television media.

Normally, cryptography would be the answer (6). However, government regulations currently restrict widespread availability of top-of-the-line encryption programs, which could obstruct law enforcement in surveillance of illicit activity as well as endanger national security. Current federal restrictions do not make it illegal to sell this software, only to export high-quality programs without an export license. Well-meaning as it may be, according to computer companies this has had the profound effect of fragmenting the market, availing "high-quality encryption for a few customers, low-quality encryption, or none, in products that are mass produced and shipped worldwide" (7). But in May 1996 a panel of computer security experts issued a report to the federal government justifying relaxation of current restrictions.

Although the issue is still under advisement, this approach—encrypting manuscripts and their reviews—would allay my fears in my own environment, while unfortunately elevating the concerns of government that such software may, and probably will, eventually get into the wrong hands.

As I try to remain impartial toward the prospect of using e-mail as my sole means of scientific manuscript receipt and review, I still maintain a degree of skepticism with regard to expediency and efficiency taking precedence over practicality and confidentiality. My specific concerns with Appel's method of editing *TOPLAS* are detailed below.

Manual systems such as fax and express-mail service may still need to be maintained if 1) a stand-alone system or network—whichever is used—is down or offline or 2) the limited storage capacity of the electronic-mail system has been met, necessitating hardware or software maintenance, such as file purging, compressing, optimizing or

defragmenting, and so forth.

Systems and software: A common problem for editorial offices is finding a utopian software package to perform journal-specific functions for referee assignment, manuscript and decision tracking, preparation for publication, adhering to the publisher's policy for online availability, and archiving. Will a generic software package such as the one Appel uses be both readily available and appropriate to a variety of journal offices? And will such hardware systems be universally harmonious? Although publishers often require that manuscripts be prepared with a certain software package, and printers prefer certain media such as phosphoimaging to autoradiograms, this currently may not be practical when an e-mail system is used exclusively. Moreover, although 99% of those who submit papers to *TOPLAS* have access to e-mail (as would be expected in the computer-science industry), not all editorial offices are equipped well enough to conduct all business this way. Many authors do not even own fax machines much less are able to connect to the Internet. In the case of international journals, the lack of a technology base within some geographic venues still necessitates the extra expense and time delays incurred by using the governmental or private postal services.

Appel's system of folder, subfolder, papers, and virtual folders apparently works well for a journal that receives 140 submissions annually, as does *TOPLAS*, but may not accommodate publications that receive thousands of manuscripts per year.

A tracking system that is integrated with an e-mail sender/reader could dramatically decrease time to correspond with referees and authors. But at least 1 good alternative manual backup system may still need to be maintained for the not totally unlikely event that the file server, mainframe, or stand-alone hard drive crashes, or the Internet provider is offline, or both. 🔵

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References

1. Appel AW. How to edit a journal by e-mail. Journal of Scholarly Publishing. 1996; 27(2):82-99.
2. Meyers B. An interview with Ed Huth. The e-mail conversation corner. Scholarly Publishing Today. 1995 Nov/Dec;4(6):4-8.
3. Taubes G. Science journals go weird. Science. 1996 Feb 9;9(271):764-6.
4. Seideman T. Working on the World Wide Web. Publishers discover the Internet in business. Publishers Weekly. 1995 May 29:54-6.
5. Hayes JR. The Internet's first victim? Forbes. 1995 Dec 18;14(156):200-1.
6. Beth T. Confidential communication on the Internet. Scientific American. 1995 Dec:88-91.
7. Edwards B, host. Panel urges government to relax cryptography laws. National Public Radio Morning Edition Broadcast. 19 May 31;Seg 5, No 1880.

Recommended Reading

Chase K. Online Wars: Will AOL and CompuServe Become Obsolete? Gambit. 1996 Apr 2:20.

Center for Public Interest Law. Privacy in Cyberspace: Rules of the Road for the Information Superhighway. Privacy Rights Clearinghouse, Fact Sheet 18. 1995 Jun:1-8.

Okerson AS, O'Donnel JJ. Scholarly Journals at the Crossroads; A Subversive Proposal for Electronic Publishing. An Internet discussion about scientific and scholarly journals and their future. Office of Scientific and Academic Publishing, Association of Research Libraries, Washington, DC, 1995, 242 pages.

Smith, GM. Potential Liability on the Information Superhighway. Technical Communication. 1996;43(2):121,123-4.