

crucial: for what kinds of scholarly communication are the new media most appropriate?

The recent Report No. 33 of the Science Council of Canada advocates the establishment of a national research institute for the development of advanced computer systems and applications software.³ Perhaps the Social Sciences and Humanities Research Council should not be trying to stand alone in its attempt to bring the new technologies into the scholarly milieu. Alone, it can only reshuffle arbitrarily the money it has available and antagonize thereby a sizeable segment of its community. As a partner in a national institute it could bring its own point of view to the community of communications specialists and could acquire the understanding needed for the cooperative funding of projects which would explore the most appropriate ways of using the new technologies in the service of the Social Sciences and the Humanities.

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3. Science Council of Canada. Report No. 33, *Planning Now for an Information Society: Tomorrow Is Too Late*. Ottawa, March, 1982.

Aid to Scholarly Communication. Social Sciences and Humanities Research Council and Advisory Academic Panel joint committee report. Chairperson: Paul Park S.S.H.R.C. Ottawa (1982)

The two basic problems which are addressed in this report are those resulting from the rising costs of scholarly journal production and distribution, and those related to the inaccessibility of papers in specialized journals to the wider professional public which should be making use of them. In 1981 the council redefined its goals in supporting scholarly communication to be:

1. "Wider and more rapid dissemination of materials embodying the results of research"
2. "Greater accessibility of such materials to users"

With these goals in mind the council is currently reviewing its support to existing publications and will announce the results of its review in "1982-83".

The Park report is concerned with adding new initiatives to the existing modalities of scholarly communication to help solve the basic problems and achieve the stated goals.

The most worrisome aspect of this report is that it assumes that funding will *not* be increased to compensate for inflation and that funding for the new technology-based projects must come from a reduction in the funding of conventional publication.

The most encouraging aspect of the report is that it does recognize that there are new opportunities for improving scholarly publishing in every respect and that they should be seized now.

Various new technological-organizational options are mentioned, notably microfiche publishing, and computer-communications based journals. However, no priorities are indicated, no guidelines are given, and necessary sequencing of development projects is not mentioned let alone specified.

There is a rich, although somewhat inaccessible, literature on the possibilities and problems of converting scholarly publishing from its present paper and postal media to electronic media, which must be explored to appreciate the opportunities at hand.

The overall knowledge-development credibility-status game and its computerization is discussed in: Boyd G.M. "Transparency, Quality and Stability in Computer Communications Based Higher Education" in the Society for General Systems Research *Proceedings of the Silver Anniversary Meeting London 1979* pp. 800-807. The practical problems of developing a computer-communications based journal are well treated by: Roistacher, Richard C. "The Virtual Journal" in *Computer Networks* 2, 1, 18-24 (1978); while, for a view of the technical and commercial aspects of such undertakings it is stimulating to read: Theodor Nelson's book *Literary Machines*, (1981) (available from Ted Nelson, Box 128, Swarthmore PA 19081 USA \$15.00)

The most interesting proposal made by the Park report is for the establishment of regional demonstration centres. This is a sound approach to the introduction of innovations in so vast a country as our Canada.

The sum of \$585,000.00 to be set aside for innovative projects is certainly enough to establish a model journal editing and publishing system provided that leased facilities and existing software are used as much as possible. However, if it is envisioned to set up, say five, regional demonstration projects this funding is clearly inadequate. The telecommunication costs and the software development costs are the crux of the matter.

The crucial problem of historically biased telecommunication rates is not addressed. Although satellite telecommunications have been introduced by government funding, and these intrinsically cost the same amount to use *regardless of distance*, the actual tariffs charged by the (middlemen) telephone companies are still distance-based, much to the disadvantage of projects such as on-line journals. An S.S.H.R.C. intervention through C.R.T.C. would be a worthwhile move in this regard.

The fact is, that the establishment of even one single on-line journal would provide facilities which could be used by many journals so that it is highly appropriate that the S.S.H.R.C. should fund such a demonstration project, –

provided that it will insist that the software and protocols be freely available to other journals. The need for this sort of proviso does not seem to be envisioned in the Park report. Without a contract which calls for protocols and software *standardization and free availability* immense duplication of costs will occur in the development of electronic journals.

There are really no guidelines given by the committee as to the precise kinds of systems which will be supported. For instance, there are commercially available Canadian automated word and illustration production systems for conventional printed journals on the one hand, and computer-communication conferencing systems on the other. (eg. those of: AES data, NABU, NORPAK, I.P. Sharp). As for micropublishing, if one could write marginalia on microfiche they would be more attractive. They are certainly cheap. And therefore, it is probably true that a number of journals could make appreciable immediate savings by publishing annually in microfiche format rather than monthly on paper. The readers and contributors will probably be satisfied with such arrangements in preference to no journal at all!

One of the real road-blocks to scholarly on-line journals, beyond what are now available in the Source and other computer utilities, is the lack of standardization of transmission codes. The Department of Communication and the CSA together need to standardize the protocols for diagram and illustration transmission (as they have done for the transmission of alphanumeric data) and need to encourage Canadian terminal and personal-computer manufacturers to meet these standards. At present, many scholars are acquiring personal-computer word-processing systems which are *incompatible*. For electronic publishing to be successful, display and print-out standards must be established and be enforced.

Something could be done now toward standardizing "interfaces" (personal computers and terminals) for scholarly work. But since in addition to the S.S.H.R.C., three federal agencies, and numerous provincial ones would be involved, probably nothing will be done. Without standardization only plain text (no diagrams, special characters etc.) can be conveniently exchanged and that is not enough for most kinds of scholarly work. Unfortunately many scholars and researchers have already bought personal computers and software which are really inherently unsuited to their work. Such is the power of advertising.

There is a bright future ahead. But it is farther away than the technological and commercial literature indicates. First, we have to be more open about the nature of our attention-getting relative credibility status game, which is where knowledge development occurs. Secondly, we have to elaborate communication and privacy, and primacy protocols. Finally, we all have to acquire appropriate PERSCOMS, (personal computer-communications units) before electronic publishing will yield the benefits which it promises.

The Park report does not even allude to these three crucial development steps, let alone provide guidance regarding funding allocations to help surmount them.

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