Attitudes in Academia Toward Feasibility and Desirability of Networked Scholarly Publishing

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ABSTRACT

THIS ARTICLE PRESENTS THE RESULTS OF A survey of directors of university libraries and other academic administrators to determine attitudes toward a networked electronic approach to the publishing of research articles. A major conclusion is that academic administrators do not now consider the academic community well equipped to undertake an enterprise of this kind and would not give it high priority in the allocation of university resources.

INTRODUCTION

It is noteworthy that most of the discontent with the present publishing system has been expressed by library directors and other members of the library profession, and that the initiative behind the establishment of the new electronic journals has mostly come from academic researchers. Little has been heard from academic administrators on this issue.

A survey was performed to determine the attitudes of academic administrators, particularly those directly responsible for research, toward the feasibility and desirability of a networked electronic approach to scholarly publishing. A questionnaire (see Appendix) was mailed on November 17, 1993, to 309 administrators associated with rather more than 100 major research institutions in North America (i.e., universities whose libraries are members of the Association of Research Libraries). Recipients fell into two broad categories: (1) library directors, and (2) administrators who were assumed to hold responsibilities in the academic research area ("provost," "vice chancellor for

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academic affairs," "vice chancellor for research," and similar titles). Ninety-nine of the questionnaires went to library directors and 210 to other academic administrators (a few directors and administrators who had participated in a pretest of the survey instrument were omitted from the mailing).

A single follow-up was mailed to nonrespondents on December 6, 1993. A deadline for receipt of returns was set at January 12, 1994. As of that date, 150 usable questionnaires had been received, an overall response rate of 48.5 percent. The response from library directors (72/99 or 72.7 percent) was much better than that from the other administrators (78/210 or 37.1 percent), which tends to support the fact that the academic library community sees this as a more pressing issue than does the academic administration at large. While the response rate for academic administrators was disappointing, it was not completely unexpected: the extremely busy individuals addressed tend to be the target of many surveys. Moreover, the survey was performed around the holiday season, a relatively tight deadline was established, and there was no aggressive follow-up (e.g., by fax or telephone).

The first of three questions on the survey identified ten possible advantages of the networked publishing approach and asked respondents to score each on a five-point scale for: desirability and probability of achievement. The results are presented in Table 1. The benefits judged most important are those associated with the potential for reducing the cost of disseminating the reports of research and for publishing them more rapidly. Also important are the potential benefits to the scholar trying to keep up with new developments in a field: more effective current awareness (through electronic profile matching) and the possibility of thus reducing information overload.

The questions suggested that a scholarly publishing network, freed from commercial interests, could give academia greater control over the results of its own research, might lead to more rigorous standards of acceptance in scholarly publishing, and could result in freer access to information (e.g., less copyright concern). Somewhat surprisingly, the potential for more rigorous publishing standards was not given a very high weight (some respondents pointed out that the pressure to publish would not diminish and that quantity might still be important).

From the earliest discussions on electronic journals (see, for example, Roistacher, 1978), a possible advantage that has been given some emphasis is post-publication peer review. That is, readers of a scholarly article can use the network facilities to comment on it, favorably or unfavorably, and the ensuing electronic discussion could stimulate further research ideas or approaches. Respondents were not enthusiastic about this possibility.

On the whole, the respondents were not optimistic that many of the possible advantages of networked publishing would actually be realized.

TABLE 1.
POSSIBLE ADVANTAGES OF ELECTRONIC APPROACH, AND PROBABILITY OF ACHIEVEMENT*

Possible Advantages	*Score for Perceived Desirability*			*Score for Probability of Achievement*		
	AA	*LD*	*T*	*AA*	*LD*	*T*
More rapid publication	4.32	4.68	4.50	3.86	4.15	4.00
Greater control by academia	3.72	4.66	4.19	2.55	2.98	2.76
Refereeing handled more expeditously	4.35	4.47	4.41	3.08	3.25	3.16
Open peer review	3.42	3.64	3.53	3.07	3.28	3.17
Lower cost	4.60	4.83	4.71	3.37	2.83	3.10
More effective current awareness	4.44	4.64	4.54	3.83	3.90	3.86
New ways of presenting information	4.01	4.44	4.22	3.41	4.04	3.72
Freer access to information	3.96	4.67	4.31	3.07	2.86	2.96
More rigorous publishing standards	3.54	4.13	3.83	2.19	2.51	2.35
Information overload reduced	4.06	4.97	4.51	2.72	2.18	2.45
Overall average	4.04	4.51	4.27	3.11	3.20	3.15

*The highest possible score is 5 on both desirability and probability scales. AA = academic administrators; LD = library directors; T = is the combined scores of both groups.

Most likely to occur is the more rapid publishing of research articles. Greater control by academia, freer access to information, and more rigorous publishing standards were not seen as very likely to occur. Somewhat anomalously, networked publishing might well result in improved methods for current awareness, but this was considered unlikely to reduce information overload on the individual.

The two respondent groups, library directors (LD) and academic administrators (AA), do exhibit some differences. Overall, the library directors are more positive about the potential benefits of electronic publishing but little more optimistic concerning probability of achievement. They are less optimistic that costs and information overload would be reduced. Perhaps most surprisingly, the library directors give more weight than academic administrators to the importance of greater control by academia and to the possibility of freer access to

information. The library directors were more positive toward new ways of presenting information in the electronic medium and felt more strongly that this is likely to occur.

The second question identified six possible obstacles to the implementation of a scholarly publishing network and asked respondents to indicate the seriousness of these on a five-point scale. The results are presented in Table 2. The greatest obstacles are those associated with the academic establishment's ability to implement, manage, and support a publishing network. In general, respondents feel that the academic establishment is not well equipped to take on the task and would be unable or unwilling to support it financially. Given the ready availability of high resolution workstations, readers are considered more likely to accept network publishing than authors are, although the academic reward system is not considered an impossible barrier (i.e., respondents feel some hope that refereed electronic publishing will be acceptable in promotion and tenure considerations[1]). The possible dangers of electronic publishing (e.g., associated with the immutability of an author's work) were not given great weight. The library directors and the academic administrators showed considerable agreement on the significance of these obstacles.

TABLE 2.
FACTORS AFFECTING IMPLEMENTATION*

Factors	*Significance as Obstacle to Implementation*		
	AA	*LD*	*T*
Author acceptance	3.42	3.24	3.33
Reader acceptance	2.62	2.72	2.67
Academic reward	3.05	2.90	2.97
Organization and administration	3.79	3.81	3.80
Cost of implementation	3.79	3.65	3.72
Dangers	2.89	2.68	2.78

*On a 5-point scale: the higher the score, the more serious is considered the problem. AA = academic administrators; LD = library directors; T = combined score for both groups.

The final question (see Table 3) identified eleven possible priorities for the assignment of university resources over the next few years and asked respondents to weight their priorities, again on a five-point scale. Implementation of a scholarly publishing network was included to see how this would rate in comparison with the other priorities.

TABLE 3.
ACADEMIC PRIORITIES*

Activities Ranked by Assigned Scores	*Scores*		
	AA	*LD*	*T*
1. University libraries	4.12	4.50	4.31
2. Undergraduate instruction	4.20	4.37	4.28
3. Technological infrastructure	4.05	4.46	4.25
4. Faculty recruitment and retention	4.32	3.93	4.12
5. Student minority representation	3.99	4.10	4.04
6. Faculty minority representation	3.97	3.96	3.96
7. Financial aid	3.71	3.93	3.82
8. Faculty research	3.92	3.71	3.81
9. Buildings	3.29	3.52	3.40
10. Network publishing	2.97	3.76	3.36
11. Comunity service	3.25	3.35	3.30

*On a 5-point scale. AA = academic administrators; LD = library directors; T = combined scores for the two groups.

The academic library community will be pleased to see that support of the university library appears at the top of the ranking. Not unexpectedly, it is the highest priority of the library directors, but it is also the third priority of the other academic administrators. The library directors give somewhat greater weight to the student-oriented priorities (quality of undergraduate instruction, minority representation, and financial aid) and less to those that are faculty oriented (recruitment and retention, support of faculty research).

Among these rather major academic concerns, the subject of the survey, establishment of a scholarly publishing network, was the lowest priority for the academic administrators and close to the lowest for the library directors despite the fact that the "technological infrastructure" of the university is a high priority for both groups.

The survey instrument presented other opportunities for respondents to express interest in the subject of the inquiry. By supplying a telephone number where they could be reached, respondents indicated a willingness to discuss the issues further. Twenty-two of the academic administrators (i.e., 41 percent) and forty-six of the library directors (64 percent) did so. Sixty-four of the academic administrators (82 percent) and sixty-seven of the library directors (93 percent) asked to receive a report of the survey. Despite the low survey response from the academic administrators and the fact that they gave

networked publishing the lowest of priorities in the allocation of university resources, those administrators who commented on the survey were (almost without exception) strongly supportive of the idea behind scholarly electronic publishing. Some typical comments were:

> "In principle, the vision described in the cover letter is exactly the way to go...I applaud this initiative."
>
> —an Academic Vice President

> "I think this is highly desirable nationally."
>
> —an Associate Provost

> "I think it will be transformed, with books as much as journals, and we need to prepare."
>
> —a Vice President for Research

> "It has to occur. The current system is too slow and too expensive."
>
> —Vice President for Research

> "This is extremely desirable. Some of us believe it's inevitable."
>
> —an Associate Vice Chancellor

In at least one case, the survey was discussed in the Graduate Council of the university, and their response was a composite of the results of this discussion. Acceptance of electronic publishing by authors and by bodies involved in promotion and tenure decisions was the problem most often mentioned by administrators, although one Associate Vice President for Research claimed that "a major stumbling block will be the Association of Research Libraries which spearheads the measure of library quality by the count of books and journals on the shelves." Other administrators pointed out that needs and acceptance will differ from one discipline to another.

Comments from library directors indicate that many feel that the library must take a leading role in such a publishing transformation. They see the library community as more receptive to this type of enterprise than much of the rest of the academic community. Progress will be slow, they feel, because of entrenched interests of faculty and the publishing industry. Perhaps the most cogent of all the comments was one from the director of a major library on the west coast:

> You have identified the critical hurdles which must be crossed before this can happen: capital to invest in the change, display technology which readers will accept, and reluctance of authors and editors to invest their careers in a new method of publishing until the community shows that it will reward people for doing so. This last is a "chicken and egg" dilemma. I don't know how it will be resolved, but because the system of paper journal publishing is collapsing around us even now, some resolution must

> occur, and when it does it will happen rapidly. It will be a tragedy, however, if the new mechanism for electronic publishing is commercially based; in that event, our costs will be no less and our control no greater. Yet that is the outcome which the major STM publishers are actively (if not intelligently) pursuing.

Based on the survey results and on the comments of the respondents, the author is left with the following impressions: (1) the whole idea is completely new to very many of the academic administrators; (2) among the administrators, there exists a small group of enthusiasts that would like to push forward with an academic publishing network; (3) library directors are more aware of the problem and more enthusiastic about the electronic alternative; (4) neither group is very optimistic that such a network will materialize in the near future; (5) administrators, in general, do not consider the academic community well equipped to take on an enterprise of this kind and would not give it a high priority in allocation of university resources.

APPENDIX

Networked Electronic Publishing of the Results of Academic Research

POSSIBLE ADVANTAGES

Below are listed a number of possible advantages that a networked electronic approach to scholarly publishing might have over existing procedures. For each, please indicate (a) to what extent you see it as a real advantage, and (b) to what extent you consider it likely to be achieved in a networked electronic environment. Please use the final page for additional comments you would like to make on any of these issues.

	Desirability not at all highly					Probability not at all highly				
Results of research made available more rapidly	1	2	3	4	5	1	2	3	4	5
Academic community has greater control over its own research output	1	2	3	4	5	1	2	3	4	5
Refereeing of research articles handled more expeditiously	1	2	3	4	5	1	2	3	4	5
Open peer review of research articles facilitated (by reader comments and evaluations linked to each article)	1	2	3	4	5	1	2	3	4	5
Results of research made accessible to potential users at lower cost	1	2	3	4	5	1	2	3	4	5
More effective means for a scholar to learn of new research in areas of interest (by electronic matching of interest profiles with newly published articles)	1	2	3	4	5	1	2	3	4	5
Electronic format allows new ways of presenting research results (e.g., electronic models or simulations replacing some static diagrams and narrative text; programs to allow users to manipulate research data for themselves)	1	2	3	4	5	1	2	3	4	5
The more collaborative academic environment allows freer access to information (e.g., less copyright restriction)	1	2	3	4	5	1	2	3	4	5
Insulation from profit-making interests leads to more rigorous standards for acceptance of articles for publication	1	2	3	4	5	1	2	3	4	5
Information overload reduced because electronic capabilities facilitate selectivity of access	1	2	3	4	5	1	2	3	4	5

If you can identify other possible advantages, please record them here:

FACTORS AFFECTING IMPLEMENTATION

Below are several statements relating to factors that might influence the successful implementation of a networked electronic approach to the publishing of research articles. Please indicate the extent to which you agree with each.

	strongly agree				strongly disagree
Authors will want to contribute to electronic databases instead of printed journals	1	2	3	4	5
With high quality display facilities readily accessible to them, scholars will want to use journals in electronic form	1	2	3	4	5
The academic bodies participating in promotion, tenure and salary decisions will accept electronic journals as equivalent to print-on-paper journals	1	2	3	4	5
The academic community is not well equipped to organize and maintain a publishing operation of this kind	1	2	3	4	5
the academic community would be willing to absorb the costs of such an operation	1	2	3	4	5
A completely electronic publishing system has too many dangers associated with it (e.g., problems of "integrity" of the contents of databases)	1	2	3	4	5

If you can identify other possible factors affecting implementation, please record them here:

ACADEMIC PRIORITIES

In assigning university resources over the next few years, how much priority should be given to each of the following activities?

	Very low priority				Very high priority
Improving quality in undergraduate instruction	1	2	3	4	5
Faculty recruitment and retention	1	2	3	4	5
Support of faculty research	1	2	3	4	5
Achieving good minority representation among faculty	1	2	3	4	5
Achieving good minority representation among students	1	2	3	4	5
Developing a networked approach to publishing research articles (the subject of this survey)	1	2	3	4	5
Buildings and other capital improvements	1	2	3	4	5
Financial aid to students	1	2	3	4	5
Service to the community (local, state, national)	1	2	3	4	5
Technological infrastructure of the institution	1	2	3	4	5
Support of the university libraries	1	2	3	4	5

RESPONDENT DATA

Name: _____

Title: _____

Institution: _____

If you would be willing to discuss these issues further in a telephone interview, please give a number at which you can be reached: _____

Would you be interested in receiving a brief report on the results of this survey? 9 Yes 9 No

Would you be interested in attending a small conference to discuss the issues raised by such a publishing alternative and problems of implementation? 9 Yes 9 No

If you have any thoughts on the implications of such a publishing transformation for the academic library, please record them here:

If you would like to comment further on any of these issues, please do so here:

THANK YOU FOR YOUR PARTICIPATION.

REFERENCES

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