

# The End Of Periodical As We Know It?

## Introduction

PERIODICALS are the primary cause of the rapid rise in the cost of library services in the academic and industrial library sectors over the last 10-15 years. The escalating cost has forced libraries to re-examine their basic acquisition policies and goals and question their relationships with other libraries.

Librarians are already battling with exchange rates and/or inflation which is never adequately matched by budget increases; and they are disturbed by rampaging subscription costs, and the steady stream of new titles or even old titles divided into parts with separate subscriptions as the number of papers per issue reaches an unmanageable number.

It might be expected that librarians faced with the impossible would question whether so many periodicals are required, and if the prices of these periodicals are not artificially high. Since periodicals cause most of the problem, one might have expected that most of the cuts in a librarian's budget would be applied to subscriptions. Perhaps not unsurprising when pressure from the reader is taken into account and the accepted view that periodicals are vital to the research function, this has not happened until the last 2-3 years, and the balance of collections has increasingly been skewed as monograph purchase has dropped dramatically as libraries strive to maintain their subscriptions.

Nevertheless, subscriptions are now being cancelled probably at an increasing rate, and as the print-run drops so the unit cost of each periodical rises, and in its turn the subscription price rises as the publisher strives to maintain his profitability, and subsequently the libraries cancel more titles. So the downward spiral continues. New courses are introduced at universities and polytechnics or a new technology is developed in an industrial firm and as a result new periodical

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titles are requested. But no longer can the librarian order on demand — he/she now looks for an equivalent cost saving in the cancellation of existing periodical subscriptions. One reader's benefit is becoming another reader's loss.

In this paper I want to look specifically at the effect on a major national library and the effects on the readers. But also I wish to question the relative value placed upon the periodical by librarians, the reader and the publisher. Indeed, has the reader a place or are we and the publishers in a closed circle of publish/purchase/process/place into which the reader only intermittently breaks? Are the publishers reaping ever increasing profits or are they desperately trying to maintain falling profits? Are we librarians building empires which have had their day? Is the Library's changing role — access rather than holdings — causing the publishing industry irreparable harm? What are the alternatives? Are there any new dissemination mechanisms which new technologies have facilitated? Do we have to fall back on invisible colleges or will the periodical hold its own?

## British Library Periodical Cuts 1990/91

Over the past few years the number of periodicals held in the Science Reference and Information Service of the British Library has steadily fallen from over 30,000 to about 25,000 as annual subscription price rises of up to 15 or even 20% have exceeded the money available from grant-in-aid and revenue.

Until 1990, it had been possible to cancel low-use low-value titles in a normal professional approach to collection building and development leaving key subject areas substantially intact. With the steady

influx of new titles from the publishing industry we have taken the view that such changes generally serve to improve the collection and the majority of the cancellations have been accepted without regret by the readers.

At the same time we have been developing a common stock approach with Document Supply Centre allowing us to retain the bulk of our collection but shed low-use titles already held by DSC - our partner in the Science Technology and Industry division of the British Library.

This cost-effective and sensible approach broke down in 1990 when we were faced with a substantial drop in our periodicals budget against an inflation level in subscriptions of about 12%. £100,000 plus had to be cut and therefore our only recourse was to cancel some 200 high value titles, the majority of which inevitably were perceived as high-use, and some were not even held at DSC. A further 400 low-cost titles were also cancelled. Thus in 1990 we cancelled a total in excess of the total holdings of many special/national libraries.

The continuing increases in periodical subscriptions mean that in 1991 a similar exercise may be necessary. However, the impact on readers may be lessened as a result of an evaluation of all SRIS periodical holdings carried out during 1990. This exercise will enable us to select more carefully those titles which we feel do not justify retention when measured against price, quality, relevance and a number of reasonable alternatives. Nevertheless, such an exercise is costly — assessment of 25,000 periodical titles is not completed in an afternoon!

Nevertheless, our expectation remains high that the steady attrition of the national scientific/technical periodical reference collection could continue throughout the 1990s without any relief as periodical subscriptions increase and budgets remain fixed. At the same time librarians throughout the world will be steadily reducing their own commitment to periodical collections and thus the unit costs of publishing are rising at rates continually above inflation. It is quite possible that by the year 2000 some 10,000 further titles will have gone — wiping out some subject areas.

Of most concern to us and I hope the publishers and sub-agents, however, is the fact that complaints from the reader have been very low whilst publicity for the cancellations has been just the opposite, with the Press presenting the story almost as a national disaster!

Our perception is that the effects on the reader are increasingly severe: we are cancelling European periodical subscriptions at a time when we are moving towards greater harmonisation in Europe, with the effect that the incentive for UK businessmen and engineers to read foreign language serials is being withdrawn; fewer English language foreign scientific journals are available, reducing awareness of overseas research and development; the balance of our collections, particularly as we have already ceased buying monographs, is being skewed and the reader can no longer be certain that periodicals scanned in a particular subject area will reveal all he must find before initiating his own research.

For the publisher the situation must be just as serious: lower print runs of titles reduce his profits or force him to increase prices excessively, further reducing sales. But in contrast to this the drive to produce new titles to attract more customers is being fuelled by the academic demand to publish to support grant applications, to further the opportunities a faculty has for research, and to improve the perceived quality of individual curriculum vitae.

But for the reader, fewer and fewer of the articles in any particular periodical are relevant to his/her interests. There appears to be a reducing interest in scanning when time is short because the return in terms of retrieval of relevant papers is now so low.

### **What Value Should We And The Reader Put Upon The Periodical**

There is evidence that this issue is being addressed seriously. The following quotes are indicative:

“French scientific journals are of such questionable quality that few researchers outside France either read them or are willing

to contribute to them". (New Scientist, 16 February 1991)

"10% of journals in ISI database (4,500) get 90% of the citations including self citation. This evidence raises the possibility that the majority of scientific papers make negligible contributions to knowledge." (Pendleberry, ISI Analyst)

"There are obvious concerns which will worry some - namely that the work is redundant, its me-too type of follow on papers, or the journals are printing too much." (Frank Press, National Academy of Sciences)

"Academic culture encourages spurious publications: it drives people to stress numbers of publications rather than quality." (James Duderstadt, Michigan University)

"If the bottom 80% of the literature just vanished, I doubt that the scientific enterprise would suffer." (Richard Young, MIT Biology Professor)

"Based on citation analysis, 50-75% of the scientific literature could be worthless." (D Hamilton, Science, 7 December 1990)

The statistics vary but the end product does not — more periodicals!

We are being buried in a flood of information, and serious questions clearly are being raised about the ability of the medium — the scholarly and technical periodical — to meet the information needs of the user. The multiplicity of periodicals results in scattering of papers which makes it impossible for the scientist to keep informed of new developments; impossible for the librarian to cover a field adequately let alone completely; and impossible for abstracting/indexing services to include all, or even most, relevant papers, and this again ignores the quality of those papers.

What is more, the university scientist no longer has the time to look! Financial pressures, the seeking after industrial contracts and sponsorship, increased administrative demands and reduced staffing levels have much reduced the traditional

availability of time to read and browse. A look at many university displays of current periodicals shows 75% are in mint condition after a month or possibly three months on display.

The quality and uniqueness of papers is also being challenged. Visible duplication occurs. Two examples of this come to mind: some years ago when the Community Land Act was introduced, 145 papers appeared in one year, many with similar titles all appearing on the ACCOMPLINE database; in 1990 when the British Library carried out a search to compile a literature guide on the Channel Tunnel, a similar number of papers were identified, 75% of which had identical or similar titles and a scan through a number of these showed little, or no, original work. All were duplicates of previous reports or earlier and fuller journal articles. The view of the editor of our literature guide was that the articles were being used by publishers as fillers on the perhaps reasonable assumption that the Channel Tunnel was topical and duplicated coverage could be justified. All were being abstracted and indexed however, appearing on on-line databases, and costing substantial sums to retrieve. (Incidentally, my favourite example from some years ago is an article on the information explosion and the problems it was causing which appeared in three different journals.)

There is also growing evidence albeit scattered and unbalanced that the periodical is not being read as assiduously as it used to be, say, 10 years ago. A few examples from my own observations will demonstrate this:

A random sample of journals on environmental sciences including noise, air pollution and waste all of particular relevance and topicality held on our shelves at SRIS in 1990 showed that possibly 20% of copyright periodicals had not been received for up to 12 months. In one case the journal title had changed and the new title had not been received. In another the journal had split into two parts, and one part had been removed from the shelves for some months. Not a single reader had drawn attention to the gaps!

In 1990, I hosted a "focus group" of five

engineers — two electronics engineers, one mechanical, and two civil engineers. Four were from industry and one from a university. Not one admitted to regularly reading any periodical, although three had had articles or books published. All glanced at newsletters and one of the civil engineers occasionally read the news section of *New Civil Engineer* produced by the Institution of Civil Engineers, his own institution.

All said that increasing pressure of work prevented them from reading anything other than standards and job specifications. The industrial engineers claimed that staff cuts in their companies now meant that time had totally evaporated when they could read to keep up-to-date with developments in their industry. The mechanical engineer did not even know that his own professional institution journal had changed its name and format.

One final example: one of the country's leading pharmaceutical firms which currently takes some 1,200 scientific periodicals has analysed usage and come to the conclusion that over 50% are never read!

Of course, none of these small investigations and experiments are conclusive, but a slow and random gathering of evidence suggests that in some subject areas the librarian, the publisher and the author are in a closed circle into which the reader is only intermittently breaking. Also there is increasing evidence that scientists bypass their libraries and are less rigorous in their research, cutting out the essential scanning/browsing function in the research programme.

### Alternatives to the Commercially Produced Periodical

If my thesis that the scholarly scientific periodical is in decline over a 10-20 year period is correct, what are the alternatives? Any replacement faces stiff challenges. It must win the approbation of both readers and producers of the information, and perform the current printed periodical functions of

authentication and certification underlying peer review, establish proprietary rights for the research and development information, current awareness for those outside the inner circle of the research world, and archiving for future reference.

The electronic journal has been seen by some as the saviour which can meet all these requirements, yet so far it has failed to find acceptance both technically and socially. On-demand publishing linked to selected dissemination of information has its supporters, and advanced communications and computer technology are providing efficient means of achieving this. The publishing industry is understandably suspicious of this way forward.

However, the increasing sophistication of university networks such as JANET and BITNET offers a future mechanism which might be seen as a development of the '50s and '60s concept of invisible colleges and already transmission of pages is occurring on a regular basis.

Perhaps a more serious challenger is linked to the arrival of desktop publishing. This new technology has encouraged another alternative which I can only describe as the research monograph in a new guise which seems to be inherent in the academic publishing world, and the small publisher with only low capital to invest in new titles. In this development, the publisher approaches academics with specialist research backgrounds.

The academic is often young, having only recently completed his/her PhD. The publisher offers a flat fee for the research findings in the form of the thesis or an adaptation of it. He then has it reviewed by an expert and publishes cheaply using desktop publishing with a low print-run but ready to sell on demand. The price of the ensuing document is often set at a relatively high level, using the argument that the high quality of the monograph content justifies the price. Occasionally the small publisher will sell on before printing to a larger firm if he judges that his marketing costs will outweigh revenue from sales.

One small publisher known to me has some 60 or 70 of these monographs already published or in process of production — the majority from British universities and research institutes. Each author

will have received £1,000 as an upfront fee, and the title will sell at between £50 and £80. This is perhaps only 25% of a periodical subscription which might contain only one or two relevant papers of the same quality over a full subscription year.

The next step for such research monographs may be production as video-text or as a video-disc. The capacity and technology are available but the social attitudes to reading in formats other than print will have to change, and the failure of readers to accept microform technology over 50 years is an indication of the magnitude of that change in attitude which is required.

A further alternative often proposed is for universities and research institutes to become major publishers in their own right. The editorial skills and the technology are now available in most establishments but of course there is no guarantee that such an approach cutting out the commercial publisher will improve the quality or lessen the number of spurious papers.

There is growing evidence that direct contact between research workers is on the increase cutting out the need for formal publication of research findings in periodicals. Again networks such as JANET are improving communication between universities and, as the faculties become more technologically aware, the ability to communicate across the wires is being recognised on a much wider scale. Over a long period this method of scientific communication will become increasingly attractive as it cuts out the long cycle of assessment and acceptance in the scholarly publishing process. On the debit side dissemination will be limited, and access to the research findings in future years will be denied.

One other alternative could be greater use of what we know in our profession as grey literature. The presentation is rarely as attractive as the periodical but the waste in terms of articles of no interest to the readers is cut out, the speed of production is usually much more rapid, and there is often less of a restriction on length so that a research or development worker's findings can be presented in full. This form of production can be seen as a

shorter and less expensive version of the desktop published research monograph. The library profession over many years has to a large extent neglected this form of literature for reasons which are not entirely clear. It could simply be based on the fact that grey literature appears in different sizes and shapes and makes the job of the librarian in acquisition, processing, shelving and storage so much more difficult. Yet quality of content is usually high, and presentation is much improved over earlier years.

Finally, a national pool of papers available on demand is another way forward using information technology for storage and distribution. ADONIS has shown the way on a small scale in medicine. A national centre covering its costs and supplying through the technologies may be a radical departure which cuts out the publisher from the market — unless such a centre is operated by the publishers!

## Conclusion

Because of the publish or perish dichotomy, publication productivity has become the primary criterion for career advancement in many institutions, and the scientific and technical literature is bloated with papers, many of dubious quality or duplicating existing research, and an ever increasing number of journals has been coming onto the market. Quality rather than quantity is the real requirement of the research and development world, but this is not easily achieved if the economics of publishing and dissemination continue as they are now. Major databases such as INSPEC and Chemical Abstracts depend upon the periodical article for their business, and librarians for all their distress at the escalating cost of this form of literature would have great difficulty justifying the existence of their collections without the periodical which plays such a major part.

Peer review needs to be much more rigorous, research funding should cease to be so dependent upon a faculty or institute's scientific paper output, and research is much needed to investigate the culture conflict between dissemination of ideas and

information for the purpose of advancing knowledge, and the dissemination of knowledge for profit.

Severe pressure such as shrinking library budgets, rapidly increasing prices and escalating article production are going to force changes on the periodical and publishing industry — some of these changes will be unpalatable to readers, scholarly scientific producers and librarians alike.

The periodical will not disappear until either it is realised that the reader does not want or even need to know what information is available between its covers, or a socially and technically acceptable alternative to the periodical becomes available. I believe the decline has begun.

As librarians and information scientists we have a responsibility to bring the periodical to the reader in a more positive way than in the past. It is not sufficient any longer just to passively display, shelve and then bind — even if only 20% of the content is worth reading! The periodical will have to become a disposable asset which is taken to the reader rather than the reader to the periodical as reader behaviour and his/her needs change.

Authors, publishers, librarians and funding agencies need to address the underlying problems, and considerable research on reader behaviour is urgently required to assess and arrest what many of us see as a potential catastrophic downward spiral in the information chain.

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