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## **The Future of the Scholarly Journal**

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### **Clearing the Ground**

Before entering onto the main substance of this paper, it will be useful to clear the ground on a number of points.

The first thing to remember is that publishing journals is a large international industry. Much of the content of journals is brought to fruition in universities, and universities are prominent buyers of the ultimate product. What goes on in between is an industry. The shares of journal publishing companies and subscription agents are quoted on the Stock Exchange. Journal publishing companies draw up accounts which reveal profits and losses. They raise capital for new ventures. In the final analysis, they know that unless they trade profitably, they will end up in liquidation.

Some academic publishers take a longer term and less commercial view of their operations, but their constraints are getting tighter, too. Some societies have hived off their journals to commercial companies, either to be rid of the administrative burden, or with the object of generating increased income. Sponsoring institutions also take a much less indulgent view about the spending of the institution's money on a journal, for example by the provision of administrative support in the office of a teaching department. Where they might once have done this just for the prestige, now they are more likely to demand financial compensation.

If we are speculating about the future of the journal, we are also anticipating change in the industry. Large international industries do not make radical change tidily, and fortunes can be made and lost in the process. I cannot think of any industry which has successfully restructured itself solely as a result of customers (which is what we librarians are) sitting round tables and talking about their problems. So, while I think that exchanges of views among players in the journals industry are very much needed at the present time, I do not expect miracles of

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readjustment to flow from them.

The second introductory point concerns the number of players in the journals industry, librarians, publishers, serials agents, document delivery services, writers, editors, users of journals. Some players do more than one thing. Writers of articles are usually readers of journals. Blackwells is an agent and a publisher. CARL is a document delivery service based on libraries. The result of this is some confusion of roles. Obviously, the players do not all have identical interests. A particularly interesting question is: who are journals published for? Is it for librarians who buy them but rarely read them? Is it for library users, who curse if they are cancelled, but have little financial stake in the purchasing process? Is it for writers (usually themselves library users also) who want to see their work in print because of the academic prestige attached - and even though they may suspect that very few people will ever read it? Journal publishing clearly is an industry but in some respects it is a very strange industry.

My third introductory point concerns the complexity of the journals problem. There are some features, copyright for example, which are worth a whole series of lectures in themselves. Every debate on the future of journals risks foundering on interventions like: "yes, but you have forgotten to mention such a thing". I propose to concentrate mainly on two factors, the economics of the situation and the impact of technology. This is for two reasons. First, because I think they are, in the final analysis, the most important, and secondly, because the other problems are often produced or intensified by these two. For example, the problems of copyright often arise because of activities libraries get up to in respect of journals to which they cannot afford to subscribe or because of the remarkable opportunities opened up by information technology - opportunities which many journal publishers regard as threats to their ownership of copyright.

### **Economic Aspects of the Journals Problem**

There are many ways of looking at the economic aspects of the journal problem. Let me get one of them out of the way to begin with. In all the conflicts about the cost of journals, I have little time for the demonising of any of the parties to the conflict. Some publishers are no doubt wicked profiteers, just as a few (but very few) librarians are cavalier about the rights of copyright owners. On the whole, I think publishers want to make a decent living like most people in an industry, and some of the economic problems of dwindling circulation lists and price increases which continually exceed the rise in the retail price index are problems they would prefer to do without if only they thought they could.

I therefore need to restate the economic problem, and I present it, first, as follows:

"The scholarly community in general and academic libraries in particular cannot at present afford as much scholarly communication of a print-on-paper

kind as they would like".

Economists would probably say there is an excess of supply over demand, and it was one of those economists who identified the journals problem in those terms, and asked me in a rather exasperated way: "Then why are prices going up instead of down?"

One answer undoubtedly is that demand for journals is quite a funny concept in economic terms. Normally, we associate demand for a product with the economic power to purchase it. Most managers of academic libraries do not themselves demand journals; the demand comes more from their users who do not have to pick up the bills. This is a potent factor in the way that supply and demand in the journals industry operates. I could therefore try a further restatement of the economic problem in the following terms:

"The scholarly community in general would like more scholarly communication of a print-on-paper kind but academic libraries consider that they cannot afford it from their present resources and have often been unable to achieve the increase in resources necessary to afford it". If there is an excess of supply over demand in the journals industry, and there seems no prospect of an increase in demand, the obvious alternative is that supply ought to fall. However, whichever way you look at it, supply is tending to increase. We are getting more articles in our existing journals. We are getting more new journals - though old ones are dying too. All this should be evidence of burgeoning demand; and so it is, but demand from the users of journals rather than their purchasers, the libraries. The normal self-read justing tension between supply and demand fails to operate.

In effect, we have looked at two possible responses to the mismatch between supply and demand. One is to increase demand - but libraries cannot seem to get more money. The other is to reduce supply - but it is increasing. A third would be to reduce costs - but costs too are increasing. So cancelling subscriptions is very understandable, and many economists would see it as tending to remedy the mismatch between supply and demand. Unfortunately, the whole situation is so untypical that the librarians' response has so far shown few signs of putting things right.

### **Just in Time and Just in Case**

Another noteworthy thing about journals as a product is that you can consume journals in one of two ways. The normal way we consume journals is by subscribing to them. We can also consume them by ordering individual journal articles from document delivery services. This is not unique to journals. Some people do not own cars but can nevertheless avail themselves of motorised transport. They can hire a self-drive car or take a taxi. The car owner has made a "just in case" purchase; he spends because he has a general expectation of his

needs. The hired car or taxi user is a "just in time" consumer; he spends because he has a precise and immediate need.

It is now becoming clear to me that the future of the journal involves a battle over "just in case" and "just in time" in the journals industry. Like the consumer who does not want to afford to own a car and falls back on "just in time" car hire, the librarian who cannot afford to subscribe to a journal "just in case", falls back on "just in time" provision, that is from a document delivery service. We may care to note, in passing that, in a user service environment, "just in time" is usually more accurately described as "just too late". The user normally would like something at the time of asking and the delay while the document is delivered may be acceptable but is usually second best.

The more important thing is this. The "just in time" car user makes a fairly realistic contribution towards the cost of the product; he pays the car hire firm or the taxi driver. By contrast, the "just in time" journal user makes a very poor contribution - but the contribution is increasing as document delivery services increasingly collect royalties on behalf of the owners of the journals from which they supply copies. Royalties are not liked by librarians but they do make for a more realistic choice for the consumer between "just in time" and "just in case". They also help to ensure that the "just in time" approach does not irretrievably damage the financial viability of the product on which it is dependent.

As we all know, document delivery services are improving dramatically at the present time, and it looks as though information technology will allow further improvements. I have already referred to document supply as an example of "just too late" provision. With improvements in networking and in the terminals available to end users, and with the advances in such technologies as CD-ROM, it is becoming increasingly possible to take journals in electronic form, either by subscription, or by the purchase of individual articles as required. There is an increasing number of experiments taking place. Some publishers are offering electronic versions of their journals, alongside the traditional product. Some are pursuing new service concepts, in such experiments as ADONIS, TULIP and RED SAGE. Some are launching entirely new journals in the electronic medium only, such as PSYCOLOQUY. The number of those is growing steadily but from a very small base. Some document supply services - and CARL is the obvious example - are making increasing use of fax. The overall effect is that the tardiness of document supply looks like an adiminishing factor. Libraries and end users feel increasingly confident that document supply services will soon be able to meet their needs quickly enough - at a price.

### **Contingent Factors**

This welcome trend contains lots of problematical factors and I ought to enumerate some of them.

There are technical problems. Can the networks cope with the bandwidth? The answer seems to be "yes" as long as we are talking of a few experiments, but "possibly not" if we are thinking of this as a heavily-used technique. Can the end user terminals cope with the bandwidth? The answer is "by no means all of them", and for the time being a terminal adequate to present high resolution illustrations is more expensive than a standard terminal for word-processing and spread sheets. Are the formats for articles satisfactorily standardised? No. Are there outstanding questions about user interfaces? Most certainly. The trouble-free transmission of journal articles of all kinds and in large numbers is still technically some way in the future.

Then there are the financial problems. In principle, one copy of a journal in Boston Spa or Hanover can feed photocopies of articles to every library there is, and the price the user would pay at present is mainly one of delay. With technical advance, one electronic copy of a journal could satisfy the world, and delay would be minimal or nil. So far, the way of paying for such a development has not emerged. Indeed, plenty of people are not sure it needs to be paid for. They believe "the age of the free lunch" has really arrived. I think a way will be found to enable people to pay in advance "just in case" for electronic journals as they do for printed ones. There are examples such as CD-ROM and the BIDS services, launched in recent years in the UK, which can help us to sort this out. I also believe that some system of licensing users will impose the necessary controls to protect revenue.

Questions of copyright are tightly bound up with the financial problems. I can remember the days when photocopies were spewed slowly and wetly from a foul smelling chemical sink- and nobody attached any importance to copyright, because it was very difficult to contravene to any significant extent. Copyright became a serious issue with the growing ease of photocopying. With the lightning ease of electronic transfer, the serious issue has become a potential nightmare for a publisher interested in protecting copyright, and by implication his revenue stream. So far, we are barely at the stage of defining the issues sufficiently clearly to suggest a blueprint for a possible solution.

An increase in dependence on photocopied articles has made some people question whether the journal or the journal part will survive as a unit of publication. It is suggested that the individual article, identified through an indexing or abstracting service and obtained through a document delivery service, is now the focal point. However, the demand for journals of a traditional kind continues among library users, and I hear a great deal from ordinary library users in defence of browsing, or rather in enthusiastic advocacy of browsing, enough to satisfy me that it has to be taken seriously and allowed for, if possible. To my mind, the forecast that the individual article as publishing unit would rise in triumph, like a phoenix, from the ashes of the dead journal, was more fashionable a year or two ago than it is now.

The last point I want to make in this section of my paper concerns the question of how the great abundance of conventional printed journals will decline and disappear. Our own behaviour and the behaviour our users expect of us suggest that the least popular journals will be replaced first, because those are the ones we cancel and for which we first come to depend on modern methods of document supply. This makes the exciting new technology a crutch for our weakness rather than a banner for our ambitions for the future, a strange role indeed. What does look certain is that secondary source periodicals, such as indexing and abstracting tools, in printed form, are in terminal decline. Otherwise, the broad image of the future shape of events is still surprisingly unclear.

### **Rebirth of the Journal**

In addressing the economic aspects of the journal problem, I have slipped imperceptibly into talking about technology. I now embark on a more formal discussion of technology from one significant aspect. Let us imagine, if we can, that the potential of the network had emerged in a setting where the exchange of knowledge was not already underpinned by a host of printed journals. What do we observe on the network? We can see people informally exchanging information in the most natural way. We can see this process being organised into discussion groups so that people with common interests can have readier access to one another's views.

We can see a controversy starting to emerge as to whether the flow of knowledge should be entirely unmoderated or whether there should be some discipline and some prior assessment of the value of each contribution. We can sense increasing concern about the sheer exuberant volume of communication. How can we be sure we are not missing somethings ignificant? How can we avoid being swamped by masses of trivia and irrelevant detail? We can already notice anxieties about the economic future of this massive information flow. For now, it is all happening for nothing, but persistent rumours about charging for the Internet at the point of use refuse to lie down. We can hear some people saying that a policy of charging for access to information over the Internet would simply be a sensible mechanism for securing the future of this medium of communication. We can hear other voices saying that freedom of information means that access to information should be free and that the chance to implement such a radical proposal is with us now. We can also identify the demand that the system should have a means of clearly fixing each intellectual contribution to the exchange, so that there is no argument about who said something, what they actually said and whether they can establish a claim to be the first to say it.

The interesting thing to me in all this is that I can see history repeating itself.

In the early growth of scientific communication, and in the appearance of the first scientific journals, we can see some of these same important considerations asserting themselves, especially the individual's desire to establish the primacy of his or her discovery, and the role of the peer group in establishing the authority of a medium of communication and in assessing the intellectual value of a particular finding or report, before it is promulgated. As the history of the journal has developed, we can see the same considerations about the importance of scientific communication as a social process coming to the surface. There is a kind of special irony in the fact that, as the printed journal is today trying to face up to the difficult challenges of its uncertain financial future, the electronic equivalent is already posing the question: how can we ensure that, as a medium of communication, it can serve its purposes, and, at the same time, pay for itself?

### **Conclusion**

I therefore see two convergent developments taking place as a result of the availability of electronic networks. In the first, I can see the possibility that electronic networks will remove most of the delay involved in the "just in time" provision of journal articles. This process has already raised questions about the nature of the journal, why articles are bundled together in the way they are, and whether a new communication technology will provoke radical change. In the second, I can see a new parallel process of knowledge communication growing up; and the present signs are that it is tentatively moving towards operating conventions which strongly echo the conventions of the traditional print-on-paper product.

As for how quickly these changes will take place, I would first say that it is likely to vary from subject to subject. Having said that, I am very mindful of the so-called millennial religious sects. From time to time the end of the world, like the end of the printed journal, is prophesied. So far, it has never come about and so we tend to laugh at further such predictions. Some people say that the world will never end, just as they say the printed journal will always be with us. They could be right but on the whole I don't believe them. Whether I will be around to see them being proved wrong, I wouldn't like to predict.