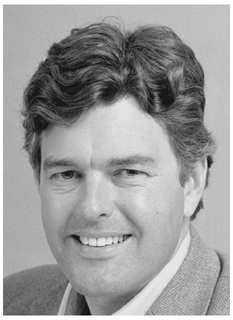
Individual article supply: some strategic directions

Mark Rowse



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Keywords

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Abstract

Examines the increase in individual article supply and the resultant effects on journal subscriptions and site licensing, noting that pressure on library budgets has resulted in subscription cancellations but an increase in separates ordering, via document delivery and interlibrary loan (ILL). Increasingly sophisticated search and navigation tools enable users to navigate from a variety of primary, secondary and tertiary resources directly to an article – regardless of where the article is hosted or by which vendor it is sold. The implications for all the participants in the scholarly communications chain are examined and some pertinent questions are asked, including: does individual article supply erode existing publisher business; does the big (consortia) deal provide more value; and is ILL the most economical form of individual article supply? Concludes that both publishers and libraries must re-examine their business models to counteract end-users seeking freely available Web-based or e-print material, which is undermining the traditional, peer-reviewed, scholarly communications process.

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Glossary

As more focus is being brought to bear on the numerous ways in which readers are able to access articles from journals without having a subscription to that journal, it is becoming clear that similar terms in use in what were, previously, separate activities, and in different countries, mean different things to different people. In the absence of a converged industry-wide taxonomy, and with apologies to those trying to create one, within this article I will use the following terms to mean the following:

- "Individual article supply": the reading of an article from a journal to which the reader does not have authorised access through a subscription arrangement.
- "Document delivery": the purchase by an individual or library of an individual article for a fee which includes a copyright payment to the rights holder in that article.
- "Interlibrary loan": the supply of a journal article to an individual or institution under terms which, under local legislation, do not have to include the payment of a copyright fee to a rightsholder.

Introduction

One of the most commonly debated issues surrounding the development of a new online information economy is that of the evolving relationship between individual article supply, the journal subscription model, and the site license model.

We would appear to be moving towards an environment in which the article, rather than the journal, will become the primary unit. Ongoing pressure on library budgets has resulted in subscription cancellations, which in turn have led to an increase in separates ordering, via document delivery and interlibrary loan.

Individual article supply is also supported by increasingly sophisticated search and

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navigational tools. These have multiplied the opportunities for article discovery, enabling users to navigate from a variety of primary, secondary and tertiary research resources directly to the article itself – regardless of where the article is hosted or by which vendor it is sold.

However, the impact that consortial licenses and the "big deal"' are currently having on the separates economy should not be underestimated. Consortial licences have greatly increased the amount of content available to libraries, reducing the demand for individual article supply via inter-library loan, document delivery and other transactional systems.

There would seem to be two somewhat contrary trends at work. This article will outline some of the recent drivers for change, providing insights into the way this market is evolving and what possible future strategies might benefit publishers, libraries, and other participants in the scholarly communication chain.

User behaviour

Because individual article supply is directly triggered by user request, changes in user behaviour will necessarily impact upon levels of demand and influence evolving business models and methods of delivery.

The individual user has assumed more responsibility for article discovery and retrieval in recent years. Users now have access to a wide range of automated search engines and navigational tools that may take them directly to a cited article – for example, via links from citations in journals or in A&I databases, or via embedded URLs in search alerts. They are also more likely to expect seamless access and efficient desktop delivery. It is not uncommon for users to by-pass the central library altogether, or to be unaware of the scope of the electronic services their institution provides.

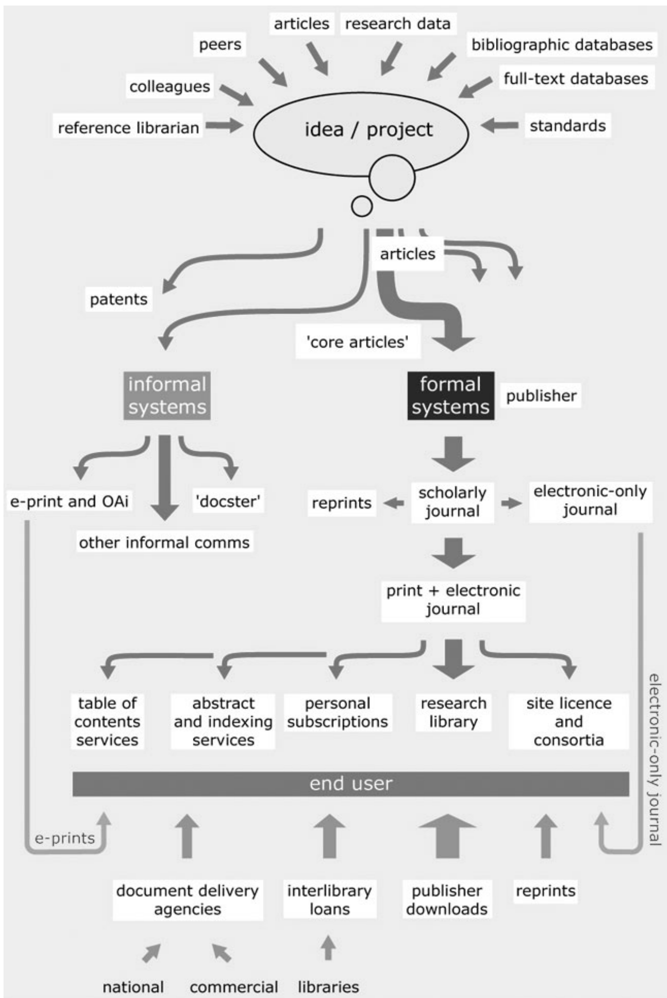
It is widely accepted that electronic availability has led to greater use. Drawing on his longitudinal studies of journal usage, and on data gained recently from 15,000 surveys of US scientists, Don King confirmed in the latest Ingenta Institute study that the average number of journals now used by scientists has increased to 20 journals per scientist, up from 13 journals 25 years ago, a fact attributed directly to online availability of journals and improvements in the efficiency of article discovery via automated search engines.

The electronic environment has also led to the migration of other "separates" online: versions of articles which previously would have been circulated informally are now being posted in publicly accessible repositories. A single article can now appear as a working paper on a Web page or a pre-print within an e-print server; it may then be published as an article in a peer-reviewed journal, and may subsequently be archived anew in an e-print server as a "post-print". The circulation of these versions multiply the instances of an article's formal and informal publication, and its chances of discovery, as the route-map (Figure 1) illustrates.

The central conundrum

At the heart of any analysis of strategy in this area lie the apparently irreconcilable objectives of the two sets of protagonists. Libraries need to provide their patrons with

Figure 1 Access and delivery options: a route map



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access to any content they might want, but have a stable or even declining budget, relative to their growing costs. Publishers want the security of steadily increasing income. Can these two objectives both be achieved or are they mutually exclusive?

Library priorities

While users are growing in number, accessing more material, and becoming more expectant of seamless access and desktop delivery, libraries have to face an increasingly tough challenge in catering for specialist, as well as core, user needs.

The library has an obligation to satisfy its users' requests for information whether the library holds it or not, even in the face of budgetary constraints that have sometimes led to dramatic cuts in book acquisition and widespread journal cancellations.

To satisfy current (and future) user demand, libraries have traditionally maintained core collections: title selection, archiving and collection development have been fundamental to the role of the librarian. Any requests for articles that cannot be met from central holdings are mostly satisfied by individual article supply. Depending on national location, the library has the option of requesting the article from another library via inter-library loan, using a national document supply service, or using a commercial vendor. It may also choose to make pay-per-view purchases directly from the publisher's online journal collection, where this option is available.

However, the route chosen varies considerably depending on the library's type and country. In the USA, where there is no centralised national library document delivery system, the vast majority of article supply is accounted for by inter-library lending. The total number of inter-library loans taking place annually in the USA has been estimated by Tenopir and King (2000) to be 40 million for the year 2000.

Outside the USA, academic libraries make use of other libraries' holdings via union catalogues or, where available, use national or central libraries which support a centralised document delivery service. These national systems operate within the respective copyright acts of each country, each of which gives an interpretation of fair use that enables the end user to receive the article at a subsidised cost if they can confirm the request is not related to commercial gain.

There are significant variations in copyright in different countries. For example, in the UK, if the document is requested by a non-profit making institution and levels do not exceed certain limits, the request may fall within fair use provisions and no royalty is payable. In Australia, there is a very low copyright fee levied on academic individual article orders, while in Germany, a newly formed library co-operative, SUBITO, is causing concern amongst the STM publishing community by providing a wholesale document delivery service that makes articles available electronically at a rate of €4 each, and which takes no account of royalty rates set by publishers.

Libraries may also, of course, choose to use commercial vendors to satisfy their document supply requirements, particularly if they have large volumes of demand and wish to benefit from the supporting services offered that help track levels of usage, cap spending, and match orders to subscription holdings, so to prevent unnecessary ordering. Vendors may also offer price discounts to large customers.

Publisher priorities

For publishers, the dominant priority is to maintain and increase market share and to safeguard and grow revenues over time. Their fundamental business model has been the subscription. This purchasing method has been central to publishers' business strategies, bringing as it does the advantages of annual revenue that can be collected in advance of the delivery of the product, high levels of repeat business, and an international market with predictable budget cycles that has historically perceived much of the publisher's portfolio as "must have" content.

In the last four to five years, publishers have additionally begun to offer special consortial arrangements in which groups of libraries gain access to bundled collections of content. Having already established the infrastructure to deliver electronic content to their existing users, it is relatively cheap for publishers to extend access to that content to additional users, and has proved an efficient way of generating additional revenue and increasing market share.

Both the subscription model and the consortial licence maintain the integrity of the journal volume as the unit of sale, and

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publishers have traditionally feared that individual article supply and pay-per-view access could undermine this model and its associated revenues.

The current environment

The serials crisis

As has been well documented, there have been major changes in the journal system that have had far-reaching implications for all participants in the scholarly communication chain.

The "serials crisis" – in which journal subscriptions have risen at levels well beyond annual increases in library acquisition budgets – has impacted directly on the ability of libraries to build comprehensive core collections for current users and long-term archives.

The US Association of Research Libraries reports that libraries are acquiring fewer serials and monographs than they did 14 years ago. The average ARL library subscribed to 16,312 serials in 1986, but by 2000 that number had fallen to 15,223 serials, despite the fact that more titles are being published and the average library is serving more users. During the same timeframe, the number of items borrowed by the average ARL library via interlibrary loan has almost tripled (ARL Statistics Trends, n.d.).

Although ILL levels have experienced remarkable growth in the USA, document delivery levels elsewhere have not followed this pattern. In the UK, for example, the British Library Document Supply Centre (BLDSC) document delivery activity has been declining since 1997 at a rate of around 2 per cent per annum, with the total number of articles supplied in the year April 2000-April 2001 falling from 2.9 million to under 2.7 million.

Furthermore, it is believed that the UK NESLI site licence impacted directly on document delivery demand. Between 1999 and 2000, demand from the UK at BLDSC fell overall by 12 per cent for the year, while overseas demand fell by 8 per cent (Brown, 2001).

The advent of consortial licensing and the "big deal'

The mapping of subscription and individual article supply trends has been further complicated by the advent of the "big deal" and consortial licences.

The adoption of consortial purchasing arrangements has grown rapidly in the past five years to become one of the predominant ways of negotiating subscriptions to scholarly journals. For libraries, it has expanded the amount of content they deliver to their users, but has also meant a move from a print-based "owned" collection of journals, to a licence-based right to access online content. Research undertaken for the 2002 Ingenta Institute programme showed that the proportion of consortia-member libraries' holdings derived from consortium deals averages around 50-60 per cent, while many large and medium-sized serials publishers now rely on library consortia for between 25 per cent to 58 per cent of their total revenues.

Both publishers and libraries have benefited from this new purchasing model in many ways. Libraries, particularly smaller libraries, have been given access to a vastly increased number of electronic titles for relatively little extra cost. They also have experienced budgetary stability via price-capped multiple year deals. Research has shown that where average increases for subscription print holdings were running at between 16 per cent and 22 per cent, consortial licence increases have averaged around 6-7 per cent.

One of the major beneficial effects has been the rapid and widespread penetration of electronic content, and the consequent increase in usage of that content. Authors have benefited from greater exposure, and readers from access to a broader information resource, and from efficiencies in the discovery and access of articles. Publishers have reported dramatic increases in downloads and believe that such increases in usage will help to increase citation and protection against cancellation.

Publishers have also, of course, enjoyed step-increases in market share as their content is made available to a greatly expanded user base. They have also benefited from the advantages of supplementary revenue streams, stable revenues over long licence periods, and in some cases the option to protect existing subscriptions through non-cancellation policies.

The widespread adoption of consortial licences and the spread of the "big deal" have clear consequences for individual article supply. As libraries gain access to a broader

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resource, their need for individual article ordering via document delivery and inter-library loan is reduced.

In the light of these complex and at times somewhat contrary forces, both publishers and libraries will need to gain a precise and detailed understanding of their environment in order to be able to formulate strategies for the future.

Questioning of assumptions

For all participants, it may prove salutary to test some current assumptions and to look more closely at the complexities of the relationship between individual article supply and the subscription and consortial models.

Does individual article supply erode existing publisher business?

Historically, publishers have been concerned with the negative impact document delivery and other transactional payment models might have on their core revenue streams, derived from the subscription model. However, research has shown that it is almost totally misplaced. In 2001, the Ingenta Institute research programme set out to examine how scholarly information is sourced and used, and to replicate a 1996 ICSTI study (ICSTI, 1999) into the relationship between journal subscriptions and document delivery. In 1996, ICSTI looked at the relationship between the sale of subscriptions by a sample of academic publishers for a selected number of journal titles, and the requests received by document delivery services for copies of articles published in those journals. The results from this study demonstrated significant overlap between the two channels with, at the top of the scale, 62 per cent of all document supply requests emanating from institutions subscribing to that particular title.

In 2001, the Ingenta Institute updated the ICSTI study, setting out to measure any important variations from the 1996 results and to identify any significant trends. Supported by ICSTI, the Ingenta Institute research project consisted of three qualitative and quantitative studies undertaken by the British Library, industry analysts Electronic Publishing Services (EPS), and David Brown, Director of Strategy at Ingenta.

Working with BLDSC and CISTI, the research team matched institutional document delivery requests for 28 journal titles from 15 different publishers against subscriber lists, supplied by the publishers. Findings showed that individual article supply poses no discernible threat to journal subscriptions and often answers a significant need on the part of organisations. Indeed, in line with earlier studies, there was a 15 per cent overlap between document article requests and subscriptions between journals subscribed to and requested.

Rather than using document delivery as an alternative to subscription, it was apparent that the vast majority of organisations use document supply to meet occasional needs. In general, almost 50 per cent of orders were for articles published over three years previously, and on average each journal in the study experienced only around three orders per institution.

Does the "big deal" provide more value?

Another key question that needs to be addressed is whether the apparent "win-win" scenario offered by the "big deal" is sustainable for the publisher and the libraries involved.

Commissioned by the Ingenta Institute for its 2002 research programme into the impact that consortial site licences are having on libraries, publishers and users, UK-based research consultancy Key Perspectives recently conducted focus groups and personal interviews with an international selection of senior publishing and consortia representatives, to identify what participants perceive are the main issues to have emerged from consortia purchasing[1]. It became apparent that both publishers and librarians believe that there are significant drawbacks to this model in the medium to long term.

Librarians are concerned that the "all-you-can-eat model" and non-cancellation policies leave little room for choice. Acquisition decision making has in some cases moved beyond the immediate control of the departmental or university librarian, as consortia purchasing becomes more centralised, while the all-encompassing nature of the "big deal" means a library may be paying for titles that are of little relevance to its users, and so have less money left for the purchase of additional subscriptions from smaller or society publishers.

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Publishers, too, have reservations. Those that have yet to enter into consortial deals may find that they may now be too late, as consortia budgets become allocated to players who are already established. Participating publishers may encounter restrictions on revenue in the longer term, having adopted price-capped policies that could impose restrictions on future revenue growth. Furthermore, bundling all journals into a whole-list bulk sale also runs the risk of whole-list cancellation, should a consortium decide to discontinue with that package, which would have a dramatic impact on revenue and market share.

Is ILL the most economical form of individual article supply?

As previously stated, US libraries in particular are increasingly turning to inter-library loan to satisfy user demand. ILL may be preferred to document delivery, in so far as it is seemingly lest costly to fulfil.

However, there are significant "hidden" costs associated with this method of article delivery. The 1995-1997 ARL ILL/DD Performance Measures Study (ARL, 1997) provided baseline data which showed that, on average, the unit cost to research libraries of borrowing an item on interlibrary loan was $18.35, and that of lending was $9.48.

The survey also highlighted the high overheads associated with such activity, while delivery speeds are comparatively slow. Over three-quarters (77 per cent) of the ILL operating costs go toward staffing, while the average borrowing turnaround time was 16 calendar days[1].

Strategic directions for institutions

Review budget allocation policy

The rapid take-up of consortial licences by libraries in the past few years was in part underpinned by the availability of extra funds, in many cases provided at national or regional level, or top-sliced from the library's institution.

However, when current consortial licences come up for renewal, it is widely expected that extra funds will no longer be available. With reduced purchasing power, it is unlikely that libraries will be able to finance the "big deal" as it currently exists without undertaking substantial cuts elsewhere in their budgets. This could mean wholesale cancellations of non-consortial subscriptions and further reductions in the book acquisition budget.

Given that libraries are already concerned at the all-inclusive nature of big deals and would prefer to be able to protect funding to finance niche titles from other sources, institutions will need to review their budget allocations carefully.

Preference for core subscriptions to "must have" content

Indications suggest that libraries would like to see a return to greater selectivity in the acquisition process, and may prefer to move away from the current "all-you-can-eat" model. Ideally, they would like to be able to select high quality journals, and to purchase journals bundled by subject, or in other ways more appropriate to their users' requirements.

Increase allocation to individual article supply, or "by the drink" allocation

Libraries may in future prefer the option to access less used titles on an occasional "by the drink" basis. It is likely that they will be attracted to more flexible purchasing models that enable them to combine subscriptions to core collections of relevant content, with transactional-based payments for more occasionally used titles.

New purchasing models may emerge that are no longer based on historical subscriptions and single article delivery, but on measurable and relevant levels of actual use, particularly as the environment moves towards more electronic-only content.

Institutions need to quantify the real costs of ILL

As more content migrates online, and as online pricing models evolve to take in transactional and usage-based payments, libraries would do well to quantify carefully the real costs they incur via inter-library lending and borrowing. There may come a point at which other delivery models – such as electronic document delivery or metered usage – introduce new efficiencies and cost-savings into the current system and prove more viable than the traditional ILL system. Since most of the cost of ILL is accounted for by staff, and since the staff involved often also perform other duties within the library, this analysis will be complex. Change is likely to be painful, and to happen relatively fast but

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only when the economics of budgets force a decision.

Investigate charging to departments and research projects
Rather than relying on the library budget to fund all university research information requirements, institutions not already doing so may wish to consider introducing devolved budget allocations that would give individual departments and research projects responsibility for the management and funding of their own specialised information needs. While the library may continue to act as a central ordering and delivery point, transactions could be tracked and charged back to individual research budgets.

Changes in consortia
Consortia themselves may evolve. At present, the majority of consortia are made up of a heterogeneous membership, often consisting of academic, public and special libraries. Consortia whose member libraries are of similar type and purpose could prove the most successful in future, able to negotiate licences for collections of content that are more consistently appropriate to their members' needs.

Strategic directions for publishers

Faced with static library budgets and reservations within the library community about the value the "big deal" actually delivers, publishers will need to innovate in a number of ways to maintain and grow revenues over time.

Adding value to the current "big deal"
Publishers will need to improve on the coverage, quality and user features of their current offerings, if they are to find additional income over and above that already committed by via price-capped agreements.

Experiment with pricing models
Publishers should consider unbundling some content, particularly lesser used titles, from whole-list and "big deal" packages, and experimenting with new pricing models which enable their customers to customize purchases to actual user needs. Some foresee a scenario in which hybrid purchasing models will emerge, combining consortial licences with transactional and usage-based systems. The introduction of new transactional models could also help publishers to reach out beyond the academic market.

Publishers may wish to explore the possibility of co-operative ventures, for example, supplying consortia with multi-publisher packages of bundled content – for example, subject-based collections.

Improve usage data
There is wide variation in the usage statistics publishers and intermediaries provide to libraries. Both libraries and publishers agree that there needs to be an improvement in the way usage of electronic resources is measured so that libraries can gain more detailed information about how the content they have licensed is being used. Project COUNTER, a working group made up of many key industry players, is currently working on an internationally agreed code of practice which should pave the way for significant improvements in the consistency and accuracy of usage data. These improvements could be fundamental to future innovations in purchasing models, paving the way for a move away from the historical subscription model, to models in which usage will be key in determining the value of content.

Reduce the cost of ILL
The high volume of inter-library lending within the USA presents publishers with an opportunity. If they can improve on the cost and efficiency of an average inter-library loan there is a vast market of separate transactions to tap. While libraries need to become more aware of the actual costs of ILL, publishers need also to appreciate that individual article supply need not be discerned as a threat to core subscription business.

Conclusion

In conclusion, it seems that libraries and publishers will need to display significant creativity and imagination if their respective sets of objectives are to be met. Libraries will need to analyse the real costs of service delivery with brutal honesty, and will need to look into new pockets to find budget allocation. Publishers will need to find new models for their bargain with libraries which include both "all you can eat" and "by the drink" elements for different parts of their

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collection. But the real driver for both parties is that unless they do so, the traditional peer-reviewed scholarly communications process will be increasingly by-passed by end-users seeking freely available Web-based or e-print material without understanding the implications for the quality of their teaching, learning and research – an end game that neither publishers nor librarians want.

Note

1 The Key Perspectives report referred to in this article is due to be published as part of the *Proceedings of the Ingenta Institute, 2002* (forthcoming).

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