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Cooperation and collaboration in electronic journal acquisition; a preliminary investigation

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Abstract

Library consortia have traditionally been formed in order to share print-based resources, but more recently have sought to enhance access to electronic journals. Their development has provided new opportunities both to evaluate their impact, and to identify the Critical Success Factors in cooperation in the librarianship and information field. This paper aims to review the key features of these consortia that are indicated by the literature and the extent to which they have been objectively evaluated. The key features include the benefits of consortial purchasing of electronic journals not only for libraries and their users, but also for publishers; and the different pricing and licensing models in use. This is followed by a review of the different approaches to the organization and operation of library consortia established for this purpose. This covers what is involved in forming a consortium, the different types of consortia and administrative infrastructures, and arrangements for negotiating with publishers and for cost sharing between members of the consortium. Finally the paper considers the challenges for libraries of working together in partnership. Evidence examined to date suggests that, whilst many of the claims made about the benefits of consortia may be valid, there is little empirical evidence to support most of them, and the various approaches to the organisation and operation of consortia have not been evaluated.

Introduction

Research by behavioural scientists into factors underpinning innovation and development has noted the significance of communication channels not only in transferring awareness of innovations but also in influencing individuals to adopt new ideas (Rogers, 1995), and scholarly journals clearly play an important part in this process. Librarians are expected to support research and development by other disciplines, and throughout the twentieth century they have done this by initiating approaches to resource sharing as a contribution to meeting researchers' needs for information. Most commonly they have sought collaborative approaches to enable them to cope with the increasing demand on academic and research libraries' finite budgets caused by an 'information explosion' in which the growing number of scholarly journals has been a significant feature.

One form of resource sharing that has become more prominent in recent years has been the establishment of library consortia. Consortia were traditionally formed by libraries in order to share printed resources between member libraries that did not hold certain titles in their collection. Collaborative efforts to share purchases and enhance the range of printed material available were supplemented by or paralleled by the creation of union catalogues of holdings and inter-library lending schemes. The new Information and Communication Technologies are increasing not only the potential for libraries to provide a range of electronic publications for their users, but also the users' expectation that a wider range of their requests should be met. Libraries have therefore been forming consortia to provide access to electronic resources across the Internet (Potter, 1997). Thornton (2000) states that the most prosperous library consortia now offer three basic functions. These functions include not only sharing physical resources, but also providing connections to the Internet and the WWW, and providing access to electronic resources.

Library managers are well aware that effective networking and lobbying with decision makers can win support for initial or continuing ventures such as consortia, but equally recognise that there are debates when incontrovertible facts about the actual or likely impact of their activities need to be deployed. However, studies suggest that librarians need to make significant efforts to devise meaningful approaches to evaluating the impact of its own activities (Wavell, Baxter, Johnson, and Williams, 2002), and it is also arguable that they are not as effective as they might be in communicating the significance of that impact to decision makers (Johnson, Williams, Wavell, and Baxter, 2004).

Similarly, whilst there have been generalised studies of academic cooperation (e.g. Eldridge, 2000), much of the evaluation of such activities has been based on opinion drawn from individual's experience, and librarianship has not been subject to the evaluation of collaborative activities that have been widely undertaken in fields such as business management or research policy. Whilst these opinions may eventually be proved valid, they have not yet been tested by rigorous investigation, using recognised research methodologies, and there is, in particular, little empirical evidence about how librarianship and information work benefit from cooperation and collaboration, perhaps because the benefits are taken for granted or deemed to be self-evident.

Certainly, as a profession, librarianship is not well served by empirical research into emerging or even ongoing policy issues, partly because there is only a small academic community and limited funding to undertake the research, and partly because the practitioner community appears to be neither active in research nor particularly supportive of it. Little empirical work has been undertaken to evaluate the implications or benefits of consortial collaboration. Sloan (1998), working largely in a period when electronic journal purchases had not become so significant an issue for library managers, tested some of the common assumptions about and attitudes towards resource sharing. Gatten and Sanville (2004) have examined usage patterns of titles across a consortium's member institutions to determine whether cancellation of individual titles within a 'Big Deal' would disadvantage users in one or more member institutions. Scigliano (2002) has attempted a cost-benefit analysis of one consortium's purchases. Shoaf (1999) has made a very simple study of the effects of consortia membership on library planning and budgeting. Schonfield, King, Okerson, and Fenton (2004) have examined changes in library operations and costs between print and electronic formats. Gatten (2004) has used data from LibQUAL studies to assess the impact of one consortium on its users' perceptions of the library services. Shachaf (2003) examined the factors that influence the life cycle of consortial activity.

The development of consortia has, however, provided a rich literature, albeit still largely experiential in character, which offers the basis for further study. To identify the opportunities and challenges presented to libraries, this paper aims to be an initial exploration of the key areas in the literature - reasons why libraries are working together in formal consortia to purchase electronic journals, and practice in the management and operation of these consortia. In doing so, it discusses the need and scope for empirical research into aspects of consortia working in general and collaboration in particular.

The origins of consortia purchasing of e-journals

The growth in the number of journals, and in the demand for electronic journal services has largely been user-led. Because of the implicit or explicit pressure for the results of research to be published, the Twentieth Century witnessed substantial growth in scholarly publications - a well-noted phenomenon usually referred to as the 'information explosion'. To cope with increases in the volume of papers published in all disciplines, established journals increased the number of papers that they published, but the growth in the volume of papers was largely accommodated by the creation of new journals devoted to more specialist areas. At the beginning of the Nineteenth Century, there were about 90 scientific journals published worldwide. The number of scholarly journals published today is estimated to include about 16,000 titles in English, perhaps 15,000 in Spanish (although many of these may not be being published regularly or indeed currently), and about 8,000 in Chinese. However, the global market for scholarly journals is dominated by six or seven publishing companies based in North America and Europe, partly because of their use of the English language which is currently regarded as the principal international medium for the exchange of scientific information, and partly because of their ability to publish their journals regularly and their adherence to quality standards through the application of a well-established peer-reviewing system to the selection of journals' contents. This has been emphasised by the inclusion of a significant proportion of their journals in the ISI Citation Indexes, which until recently have only included peer-reviewed journals published in English and which have provided the only global measure of the international standing of an individual or a country's research.

It became generally recognised that conventional publishing of printed journals was inefficient because the increasing number of titles - and increases in prices as publishers sought to retain their share of the funds available to purchase journals - resulted in fewer purchasers for each title, and the contents of each journal consequently enjoyed limited and declining visibility amongst potential readers. This was a cause of dissatisfaction both to librarians, who were unable to increase budgets to maintain all their subscriptions, and to researchers, who felt that they were effectively being denied access to the information that they required to sustain their efforts.

The emergence of the Windows interface and the World Wide Web in the early 1990s stimulated interest in the potential of the Internet as a medium for communication, and has encouraged its rapid and increasingly widespread adoption, although the proportion of the population that has access to the Web through a networked PC still varies widely between countries. According to Chan (1999), Sondak and Schwarz had conceived the first scholarly journal in electronic form in 1973, distributing computer-readable "archival files" of journals to libraries, and various experiments subsequently took place to distribute journals on CD-ROM. The commercial journal publishers had commenced their first online experiments in the early 1990s, but it was the emergence of Web technologies that stimulated the widespread availability of online electronic journals. The journal publishers have since added a range of features to make their electronic services more attractive, and have been so successful in encouraging use of the new media that they have been expected by the users to invest in digitising older material. Today, some 90% of the current English language scholarly journals and a growing proportion of older issues are available online. To improve their offer to prospective purchasers and thus to maximise the return on their investment, the major publishers have engaged in a policy of consolidation within the industry, acquiring smaller publishers or the rights to reproduce their titles, promoting sales of collections of their titles which have come to be known as the 'Big Deals.' The scale of investment made by the publishers, an acceleration in prices to recover their outlays, and the introduction of the 'Big Deals' added to the problems of librarians who were already in many cases failing to maintain the library's budget as a proportion of their institution's overall income. Recognition that large purchases of electronic media could attract a discount on the headline price led to an interest in consortial purchasing.

Benefits of consortial purchasing for library users

Whilst librarians have been concerned about the impact of escalating journal prices, the research community has been more concerned about access to information. Hiremath (2001) claims that it is increasing user demands for information that have caused many libraries to consider entering consortial agreements. Purchasing by consortia does appear to have led to a significant increase in the quantity of information available to users. For example, a consortium may have a purchasing agreement whereby its members subscribe to all a publisher's titles. Alternatively a consortium may have a "cross access" agreement whereby a library can access its own titles and those of other libraries in the consortium to which it does not have subscriptions (Anglada and Comellas, 2002). A major study has already been undertaken to quantify the impact of electronic journal services in terms of cost per use (Schonfield, King, Okerson, and Fenton, 2004), there appears to be scope for a more thorough and more wide ranging evaluation of the benefits arising from enhanced access to larger collections. What is the value that the users could derive? How does that translate into benefits for society, in scientific, economic, and social terms? And can that be quantified in a way that is meaningful?

Benefits of consortial purchasing for libraries

Clearly consortia membership is attractive to libraries. A report on the Anatolian University Libraries Consortium (ANKOS) in Turkey suggests other advantages of being a member of a library consortium. At its inception in 2000, the ANKOS consortium had 12 members who subscribed to 5 databases. Three years later in 2003, the consortium had 70 members and subscribed to 20 databases. Akbaytürk (2003) attributes this increase to:

> "the cost reduction made possible due to this collective action and to the successful policies conducted by the ANKOS Steering Committee".

The principal advantages claimed by libraries involved in consortial purchasing are:

- Electronic access to existing subscriptions at a reasonable cost;
- Greater control over price increases because the consortium can negotiate not only lower purchasing prices but also a reduced rate of price increases

Librarians Aerni (2005), amongst others, has noted that certain services to libraries can be enhanced or provided at reduced costs "due to economies of scale", where an increasing number of services or products provided means that each individual service or product will cost less. Sanville (1999), the Executive Director of OhioLINK (a large American library consortium), has asserted that many libraries have saved between 20% to 70% when buying as part of a consortia than as individual institutions. Costs of interlibrary lending are also reduced by increased online access to electronic media, according to Anglada and Comellas (2002).

Moreover, if a library belongs to a consortium, it probably has to have an organized, discriminating, and participatory approach to collection development (Thornton, 2000). Consortia purchasing may enable libraries to offer:

- Access to a publisher's journals that may only be available electronically
- Access to additional titles within established fields of interest at little or no extra cost;
- Very low-cost access to titles of lesser interest or of interest to minority of users;
- The chance to offer a "level playing field" to everyone in a city, province, or country, regardless of their institutional affiliation.

Consortial purchases are said to offer more benefits than simple discounts on licences to use electronic information, such as access to a pool of new resources that can be used to develop value-added services. Hiremath (2001) also maintains that, as members of a consortium, libraries will enhance their "risk-sharing capacity, collaborative technical expertise, and unified lobbying potential."

However, it has also been alleged that large, multi-campus universities may not receive any advantages from consortia purchasing (Aerni, 2005). The consortium may only seek to purchase materials that match the general consensus on user demands, with little attention to the most unique materials that match profiles of users' specialist interests (Stern, 2003). As a consequence, it is alleged that some libraries increasingly maintain memberships in larger groups that may offer good discounts on basic services while maintaining membership in smaller consortia that focus on specialized services or needs (Carlson, 2003). Moreover, an individual library's expenditure on journals may still increase even though they are members of a consortium (Hiremath, 2001).

However, there still appears to be scope for validating many key issues such as the impact on libraries' budgets and for evaluating the benefits to libraries.

Although some work has been done to investigate the impact on libraries' users (Gatten, 2004), does this, for example, translate into articulated support for increased budgets, and how?

Benefits of consortial purchasing for publishers

The reported benefits of consortia purchasing may not be one-sided. Sanville (1999) asserts that consortium purchasing benefits the vendor as well as the library. While the library's "unit cost of purchase" is reduced, the vendor's revenues and profits are improved. Library consortia may help publishers expand their markets for electronic journals by making it possible for libraries to acquire more journals than they would otherwise have done (Potter, 1997).

A consortial license may provide a stable market for the publisher. As it builds an electronic-delivery infrastructure, the publisher could reap certain benefits:

- Guaranteed retention of subscriptions that might otherwise be cancelled;
- Potential income from new customers;
- Additional income without much additional expense;
- One point of contact; one license negotiation; one payment (Ball, 2004).

Publishers could also gain from stability as agreements with consortia usually extend over a 3-5 year period, and it is claimed that they frequently experience an increase in turnover because:

> "the amount paid is unlikely to be less than the sum of the amounts received by the publisher from each library in the consortium." (Anglada and Comellas, 2002)

The cost of negotiation and management of journal subscriptions are claimed to be lower. Although the negotiation period may take longer with consortia than it would with an individual library because agreements have been studied and reached between many institutions, publishers could also reduce costs by working out deals with the "single negotiating voice" of the consortia (Anglada and Comellas, 2002).

Publishers can expect an increase in use of their products as they become more visible to the user community. Increased use of journals that are otherwise not accessible to some users may result in more citations, and could in turn stimulate demand for access and increased sales (Ball, 2004). If articles in a journal are cited more frequently, this may be used to justify an increase in the price of a journal (Anglada and Comellas, 2002).

Commercial confidentiality may restrict what can be done in this area, or at least what may be permitted to appear in the public domain, where it involves an examination of publishers' operations. Nonetheless, when negotiating with publishers, it may be useful for libraries to be able to present some evidence of benefits that the publishers accrue from consortia deals.

Publishers' Pricing Models

It is not uncommon for the subscription price to be based on the costs of the previous subscriptions. Anglada and Comellas (2002) comment that a pricing structure that is based on the participants' previous subscriptions may be perceived as fair. The smaller libraries get the best deal, but they would not be able to participate otherwise, and they can generally be expected to generate much less use than the larger institutions;

Various pricing models have evolved to increase the market share for publishers and lower the price for consortia. Stern (2002) states that there are usually two different forms of consortial pricing models: 'discount/differential' and the 'Big Deal'.

The 'Big Deal' model offers reduced prices to individual libraries or consortia if they subscribe to all titles produced by the publisher. This model allows smaller libraries to have to access to an increased amount of titles for allegedly little added cost. However, this model may mean that they may also be being subsidised by the larger libraries. One consequence may be that review of titles by data on their use is overlooked, leading to the continuation of infrequently used titles (Stern, 2002).

In some kinds of consortial agreements a lump-sum fee is charged for a package, no matter how many members participate, so if some of the members opt out the others would have to pay more. In the discount/differential model, a complex sharing algorithm is used to provide each member with a discount. This price can sometimes be the same for all members or there can be differential pricing within the consortia. In some cases, each member can decide to pay for the online versions of only the current print subscriptions or for a larger set of desired titles or services from within the entire package. In this scenario, larger members often end up subsidizing smaller members (Stern, 2002; Karasozen and Lindley, 2004). This model is also said to create a larger guaranteed revenue base for the publishers (Stern, 2002).

Stern (2003) describes 'differential pricing' as being based upon projected local use levels such as an estimate of use, as determined using criteria such as population size, institutional research level, use statistics, etc. A topic of great debate is pricing based on FTE versus simultaneous users. An academic library or consortium should be able to estimate the likely number of staff and students who will want access to the material. If the estimate is too low, it could prove frustrating for some users. If the estimate is too high, more money may be spent on the subscription than necessary. To cope with this, it is suggested that the licence should be sufficiently flexible to facilitate automatic upgrading to the maximum number. McKee (2005) states that pricing by FTE is the preferred method in commercial institutions, where the number of staff in "Full-Time Employment" are likely to have a single focus, but this method could be problematic for academic libraries where the "Full-Time Enrolment" of students would encompass students from a diversity of disciplines. Stern (2003), however, comments that while this pricing plan is straightforward for educational institutions, a fair structure for commercial research laboratories and government departments still needs to be developed.

Some licences will permit a number of concurrent users, perhaps controlled by users at participating institutions sharing a designated number of access ports. Other variants include:

- A charge per user with volume discounts;

- A charge according to the size or nature of institutions, with pricing based on population size, or research intensity;
- A charge for each added institution or site, with the initial site paying the base price, and discount being given to subsequent sites.

McKee (2005) states that some publishers and content providers permit consortia to choose either approach, and that it should also be possible to start with one kind of pricing scheme and then change to the other. Baker (2000) suggests that there is a need to investigate:

> "a hybrid pricing model for national offers that will aggregate both an FTE and simultaneous-user model into a single agreement that benefits all types of libraries".

Model licences

McKee (2005) describes pricing structures of electronic products as "complex", and argues that consortia need and should demand easily understood pricing information. The Association of Research Libraries was quick to establish a set of principles for licensing electronic journals (Gammon, 1998). In an effort to simplify negotiations with publishers, a number of model licenses for electronic journal services have been developed in consultation with five major subscription agents (Blackwell, Dawson, EBSCO, Harrassowitz, and Swets), and made available in the public domain (Cox, 2000). When a license agreement clearly benefits both the publisher and the consortium, its elements tend to be adopted by other publishers, so agreements are becoming somewhat more standardized (Anglada and Comellas, 2002).

Bosch (2005) discusses the use of model licenses and the advantages and disadvantages of using them, commenting that:

> "Model licenses have not solved all problems associated with the licensing process, but they prevented the collapse of the process as licensing continues to see explosive growth."

He argues that model licences improve understanding within an organization by:
- Using a common language expressed in plain English;
- Providing efficiencies regarding the management of licenses;
- Simplifying the review process;
- Making editing of documents easier;
- Reducing legal liability.

Publishers' licensing conditions

Hiremath (2001) and Cox (2002) provide information on a variety of different models. License agreement between publishers and a consortium may include many conditions, such as:
- A fixed price for each print or electronic subscription for one format;
- A fixed surcharge to receive both the print and electronic versions;
- A multi-year license requiring each participating library to maintain its current subscriptions in electronic format;
- A cap on price increases for subscriptions during the period of the agreement;
- A fixed price offer of access to the remainder of the publisher's journals;
- Electronic access to journal back files.

At the end of a 'Big Deal' agreement, the publisher may demand that the consortium either pay a large increased subscription or cancel (Ball, 2002, 2004). Usage statistics of e-journals should be required as part of the licence, as this will indicate which journals are valued more by users and make it easier to select or cancel future subscriptions (Ball, 2004). However, it may still be difficult for libraries involved in a 'Big Deal' to cancel subscriptions of certain journals in order to subscribe to new ones. This makes it impossible for libraries with static or reducing budgets to respond to changes in user demand by subscribing to new journals (Gibbs, 2005).

Once purchased, printed journals could remain in a library's collections on a permanent basis. An electronic journal licence does not necessarily mean that the library will have an automatic right to retain access to the materials once the subscription to the product comes to an end, and it has been unlikely that the supplier's licence would automatically include it – although this practice now seems to be changing. Pedley (2003) therefore recommends that the issue of perpetual access is clarified in the consortium's contract.

Everything is negotiable. Library consortia can be powerful entities (Ball, 2004), and in most cases, the composition of each consortium will influence the final deal (Sloan, 2000). Gatten and Sanville (2004) have examined the implications of the 'Big Deals' for consortia purchasing. However, the various approaches to pricing and licence conditions do perhaps need to be better and more widely understood.

Different types of consortia

There are many different types of library consortia. For example, a consortium could be based on type of library e.g. public or academic (also known as "multi-type consortia" (Bostick, 2001). A nationwide or state-wide consortium could contain all its libraries, including private institutions and government funded institutions (Shachaf, 2003). A regional consortium could be developed on a geographical principle, or there may be an existing organization of libraries or the institutions that host them that could become a purchasing consortium. Some library consortia have centralized funding from a national, state, or provincial legislature, or government or private grants (Bostick, 2001).

Hiremath (2001) has reported that there are over 100 large electronic consortia in the USA alone, taking a variety of forms. For example, about half the states in the USA have state-wide arrangements for consortia purchasing. OhioLINK (Ohio Library and Information Network), provides a good example of how a large group of academic libraries can cooperate to increase the level of access to electronic journals at a price that all sizes of libraries can cope with. OhioLINK is a state-wide consortium consisting of Ohio's college and university libraries and the State Library of Ohio, and was formed in the late 1980's. OhioLINK currently serves faculty, staff and students at 85 institutions via campus-based electronic library systems, the OhioLINK central site, and Internet resources. OhioLINK offers six main electronic services: a library catalogue, research databases, a multi-publisher electronic journal centre, a digital media centre, a growing collection of e-books, and an electronic theses and dissertations centre. A Governing Board consisting of 13 voting members and some ex-officio members supervise the OhioLINK program (OhioLINK website, 2005). Funding for OhioLINK has been allocated by the state legislature to the Ohio Board of Regents, which supervises the State's higher education system (Potter, 1997).

VIVA (The Virtual Library of Virginia) is a consortium of the non-profit academic libraries within the Commonwealth of Virginia in the USA. Its members include independent institutions as well as state-assisted colleges and universities. VIVA receives funds from the Virginia General Assembly as well as from library budgets and other grants, and claims that "VIVA brings $5 of value for every $1 spent" (VIVA website, 2006).

Bucknall (2005) describes how a group of 38 libraries in the USA came together to form the Carolina Consortium. He points to the success of the Carolina Consortium arguing that it is not only institutions with shared interests that can work together to increase resources, but institutions with different missions and backgrounds.

In Britain, the Joint Information Systems Committee (NESLI website, n.d.) established the National Electronic Site Licence Initiative (NESLI) as:

> "a national initiative to secure better value for UK academic libraries in the purchase of journal subscriptions" (Ball and Friend, 2001).

However, NESLI is a loose consortium and involvement in any specific deal is voluntary. Individual universities decide, in the light of their own subject interests and budgets, which journal packages to purchase at the price agreed between NESLI and the publisher. Negotiations are conducted by a Managing Agent, who acts on behalf of all the government funded universities and who is funded by a small percentage of the discount negotiated in the various deals that are marketed (Ball and Friend, 2001). It could be argued that the voluntary take-up of the deals weakens the bargaining position of the negotiator, and fails to obtain best value for the universities.

eIFL (electronic Information For Libraries) is an independent organisation that was established in 1999, with initial support from the Soros Foundation, to assist libraries in transition and developing countries, and now has 2,200 member libraries in 50 countries. eIFL initially focused on negotiating affordable subscriptions on a multi-country consortial basis, and by means of two public tenders requested prices for national site licenses so that an unlimited number of publicly funded libraries of all types in a country could register for access and an unlimited number of users could use the services simultaneously. Since 2002, the newly created eIFL Foundation, supported now partly by Soros but also by other partners, has worked to support the emerging national library consortia in member countries. The Foundation still act as an agent negotiating for content on behalf of participating national consortia, but also offers training, consultancy and a range of other services (eIFL web site, n.d.). For example, this author is about to embark on project with eIFL and others, funded by the European Commission, concerned with defining best practice for electronic libraries in Syrian Higher Education institutions.

Whilst the national consortium is arguably the best model for developing countries and the former communist countries whose economies are in transition, its initiation could be resisted by established consortia in other countries, and its advantages and disadvantages need to be fully articulated.

Organization and operation of consortia

Libraries are increasingly aware of the potential for an attractive consortial discount when purchasing electronic journals or a full-text database. However, some equally important points to take into consideration before forming or joining a consortium are suggested by Stern (2002; 2003). These include:

- "Is joining a consortium a priority for reasons beyond the journal purchases (e.g. cooperation on other strategic decisions)?
- Are customization options (the control of service costs and selection/modification of materials) more important than reduced costs with limited customization and control options?"

An informal agreement and a consortial name could satisfy some vendors. Others may require the establishment of a legal entity. Wade (1999) investigated 11 small to medium sized consortia to discover the circumstances when an informal consortium changes to a 'formal legally incorporated body', and identified the following factors as being important in determining when and how incorporation should be considered: payment of services, protection under the law, joint ownership of assets, and provision of joint services.

Bowman and Cooper's (2004) experience of how one University library established a consortial purchasing agreement suggests the following list of key components of successful collaborations:

- Communication;
- Face-to-face initial meeting between publisher and consortium representatives;
- No hidden agenda;
- Team approach;
- Trust – honesty;
- Investment of time and money on both sides;
- Publisher's understanding and flexibility in licensing;
- Appreciation – both sides appreciated the efforts of the other to make this
- deal happen; and
- The consortium members had a common goal/purpose - providing greater access to STM information.

Sloan (2005) has collected web accessible documents dealing with the governance and administration of library consortia and cooperatives. It is important to note that library consortia have varied purposes and structures, and are constantly changing. What works for one consortium may therefore not work for another (Bowman and Cooper, 2004), but there may be some value in a broadly based study of opinions on this topic.

Consortia management and finance

A new consortium without an established infrastructure requires a commitment of time from some people on behalf of others. Negotiating license agreements, determining and implementing the cost-sharing plan, and especially communicating with the participants can take an immense amount of time. In the United States, consortia are usually governed by a Board of Directors typically made up of the directors of the member libraries. In a large consortium, decision making by the Board of Directors can be unmanageable, so it is often the case that a smaller governing council is elected by the Board of Directors. An executive director is also often hired to manage the routine activities and coordinate daily work of the consortia. The director supervises committee work and is in direct contact with all the member libraries. The executive director may have staff reporting to him/her if the consortium is particularly large (Bostick, 2001).

Interestingly, several serials subscription agents have reinvented themselves in response to a new business climate in which consortia could and do deal directly with publishers, offering the following services to facilitate deals and to substitute for a consortium's administration:

- Planning and consultancy:
  - Identifying consortial and organizational objectives, requirements, and reporting needs
  - Compiling an inventory of journal titles and expenditure in each member library
  - Identifying the range of titles published in relevant subject areas
  - Collecting information about publishers' subscription charges and conditions
  - Collecting demographic information about the member libraries
- Brokering:
  - Communicating the organisation and financial realities of the consortium to the publishers
  - Communicating publishers' terms and conditions to the consortium
  - Providing quotes, negotiating with publishers, and resolving licensing issues
- Administration:
  - Ordering and renewing
  - Assuring electronic access
  - Handling budget allocation invoicing and payments
  - Training and support.

This represents a substantial commitment. Whilst some (e.g. Stern, 2003) have claimed that libraries' administrative costs are reduced, others have pointed to a growing recognition that managing electronic serials is far more complex and time-consuming than managing a collection of print journals, and consortium working demands more or more highly qualified staff to manage the acquisitions process. Approaches to providing support for the consortium's administrative infrastructure vary. For example, the Council of Prairie and Pacific University Libraries (COPPUL), a consortium of university libraries in Canada:

> "has a fixed structure of membership fees based on the overall operating budget of the entire university. There are nine levels of fees, starting with a $1,500 fee for a university with an operating budget of $25 million and under, up to a $10,500 membership fee for universities with an operating budget in excess of $350 million" (Sloan, 1999).

Some consortia do have professional staff who will handle the substantial amount of work it takes to complete a successful agreement and to manage its implementation, and there is clearly potential for an examination of the administrative costs that consortia members might have to bear, and to compare these with the cost of services provided by subscription agents who may be able to share the costs across several consortia.

Negotiating with publishers or agents

Consortia can take more control by observing the standard procurement cycle, outlined by Ball (2004) as:

- identify the need;
- prepare the specification;
- find the supplier;
- award the contract;
- measure and monitor suppliers' performance.

Negotiating a plan of action agreeable to all members of the consortia is the foundation for smooth negotiations with publishers. Consortial arrangements always involve some internal negotiations. The larger the group, the more latitude it will have in negotiating agreements amongst members and with publishers. If one of the member libraries opts out, the others will need to decide whether they will still participate. In this case, their costs may remain the same, but they could have access to fewer journals. Meeting every institution's needs can be problematic, not least because the process could change from year to year as participants join in or leave an agreement. Not only must consortia deal with these problems institution-by-institution but, if the consortium does not have an administrative infrastructure, the participating libraries will be on their own in negotiating a license agreement, and the publisher/vendor must also institutionalize processes for each consortium (Carlson, 2003).

The schedule for a consortium's negotiations with the publishers is established by the Board of Directors. Those who are responsible for electronic journal selection will then establish the libraries' level of interest in proposed purchases. Even in some formal consortia, a "sponsor" library with the strongest interest might take the lead in brokering a deal. This can cause tension, particularly if the proposed consortium deal does not meet the goal of an individual library, and means that member libraries need to take into consideration what is best for the greater good of the entire group and not just what is best for them individually. The range of journals to be purchased, the overall cost, and the multi-year commitment are particular issues on which an individual library may be required to compromise to achieve its own goals. This can often be the case in multi-type consortia, where different kinds of libraries need to find 'commonalities,' or when a consortium consists of a mix of private and publicly funded institutions. It is therefore considered good practice for the Board to establish, in advanced of any negotiations with publishers, a mission statement and a plan of action agreeable to all members. This will often include a statement as to level of participation expected of members. When agreeing on licensing, some consortia call for the participation of all members and some do not. This decision can influence vendor negotiations because some vendors will only be interested if all members participate (Bostick, 2001).

McKee (2005) suggests a number of points to help libraries and consortia negotiate the best possible deal, such as:

- established policies on the terminology that is acceptable in the licence;
- agree on invoicing arrangements and cash flow;
- closely examine the proposal;
- identify disadvantageous conditions;
- be clear about where the authority to take decisions lies in the vendor company;
- aim to fix deals near the end of the publisher's financial year.

Vendors often impose an unrealistic time frame for a decision on a consortial agreement; for example, a certain discount may only be good until a certain date. However, if the consortium is moving at a reasonable pace towards a decision, an extension to the deadline can usually be agreed.

Electronic journals are sold in a variety of ways – by the publishers themselves, by aggregators or portal services which try to bring together journals from different publishers on related subjects, and by the established library serials agents. It is possible that vendors may be able to offer more flexibility in terms of pricing and other conditions if they are primary vendors than if they are secondary vendors who are only able to negotiate within the parameters of their own deal with the publishers.

Cost sharing

The principals of cost sharing seem fairly obvious, and are ably set out by 'Electronic Purchasing In Collaboration,' a shared initiative of New Zealand libraries, which has adopted the following approach to pricing:

- Pricing should be fair;
- Pricing should aim to be affordable for all libraries;
- Pricing should aim to be attractive to small libraries in every sector;
- There should be clear benefits to membership in the consortium;
- Pricing structure should be simple to understand;
- Pricing model should include a contribution towards administrative costs (EPIC website, n.d.).

In some agreements, the individual libraries' prices are not determined by the vendor, so the libraries must negotiate among themselves for a fair distribution of subscription charges. Indeed, one advantage of receiving one invoice for a consortium is that, even if the vendor has used a pricing formula that is based on characteristics of individual participating institutions, the consortium can redistribute the costs based on other criteria. Reaching agreement on distributing costs can be one of the most difficult matters for consortia. With more members, more options for customization, and more individual choices available, consortial deals can be complex puzzles. A given library may have little choice or minimal involvement in negotiating a consortium license for a full-text database. The less a library's own funds will be used, the smaller its role will be in the negotiation process. The opposite is just as true: the larger the group, the more difficult it may be to work together. Establishing a mutually acceptable distribution formula in advance can save time, shorten the negotiation period, and help maintain good relations among consortia members.

If the members of a Consortium are broadly comparable institutions, the simplest approach may be to divide the costs equally. There are, however, various options for sharing or rearranging predetermined costs where this is not the case.

The starting point for distribution of costs is usually resource based or user based. Some cost-sharing models are resource based. One is to use a sliding scale based on their individual materials budgets. A variant on this is to divide the cost proportionally based on existing print subscription costs. Another is to relate the cost proportionately to what each member would have had to pay as an independent subscriber to the e-journal service(s).

Some consortia use pricing bands to distribute costs based on the size and type of library. These user-based approaches for sharing costs typically use either census data or registered library users for public libraries. Since researchers are expected to make more use of electronic journals than undergraduates, some consortia have developed a formula weighted according to the research-intensity of member institutions.

Whilst usage statistics could be used in distributing costs, usage patterns can only be determined after a consortium has made its first purchase. Some consortia would see charges based on usage as creating a disincentive for using electronic journals. Stern (2003), however, takes a more positive view, and suggests that local customization of services based upon controlled use levels provides a method of programmatically reducing service costs.

Some consortia use a combination of factors to distribute costs. "Good neighbour" policies can come into play in which the libraries that are willing and able to pay will subsidize the participation of the libraries that are unwilling or unable to pay. This may occur if there is a recognised disparity in funding, or if one library is willing to pay a larger share in order to ensure others' involvement that will secure an advantageous deal for itself.

Again, there appears to be a case for a systematic evaluation of the various options to determine which works best, and in what circumstances.

Challenges in working together

Finally, it would be appropriate to examine the area that is most neglected in the literature – understanding the group dynamics within potential and existing consortia. Identifying the barriers and facilitators to collaboration between libraries in increasing the availability of electronic resources is vital to the successful establishment and operation of consortia. Previous analyses of cooperation in library resource sharing have summarised some of the barriers to inter-lending as:

- inadequate human resources to carry it out;
- insufficient funding to start or sustain it;
- insufficient knowledge of foreign regulations, policies etc.;
- negative attitudes or mistrust - reluctance to participate (Seal, 2003).

These perceptions tend to be confirmed by preliminary studies for research into online collaboration in the LIS field that has begun to identify several factors that motivate and/or hinder collaboration:

- Resource accessibility
- Socio-economic
- Professional
- Social networks and personal (Axelsson, Sonnenwald, and Spante, 2006).

There is no shortage of guidance on appropriate methodologies for investigating these issues, nor any shortage of examples from other fields to aid an understanding of them. The literatures of business management and research policy offer many studies of groups facing similar challenges, and it will be necessary to turn to those other disciplines to consider appropriate approaches.

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