

Strategic Challenges Facing Research Libraries

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I am pleased to have this opportunity to bring a North American perspective to these discussions. We have struggled to find coherent and constructive responses to the challenges facing universities and libraries as they engage an increasingly turbulent and exciting environment. My paper is intended to provide a framework for discussing the strategic challenges facing research libraries.

This framework is based on several premises. First, I suggest the traditional library mission is in jeopardy and that it needs to be rethought and redirected. We can no longer be comfortable with a traditional interpretation of what constitutes a library.

Second, I believe the current scholarly communication system is not sustainable. Skyrocketing costs of information resources, new formats for these resources, and a declining investment in the traditional publishing and library models create irresistible pressures forcing change. Libraries need to strategically position resources and services. New publishing models must be developed.

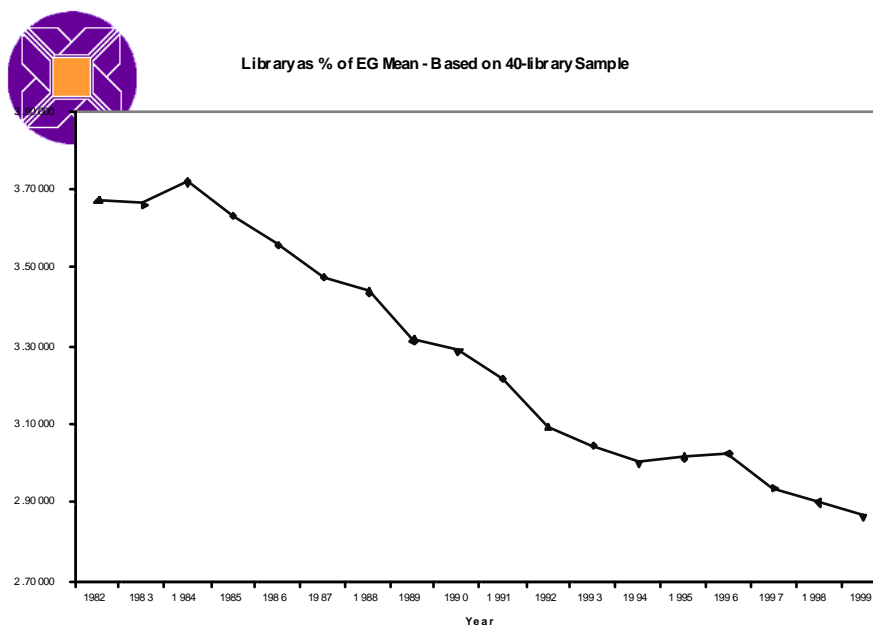
After exploring these premises, I will suggest 10 challenges presented by the need to rethink and reengineer the systems of scholarly communication. In order to get the coherent, constructive changes needed, library leaders have to take an active role in shaping the future collaboratively.

Background

Let me start with a few comments about ‘The Association of Research Libraries’ (ARL) to help you understand our approach to these issues. ARL is a not-for-profit membership organisation comprising the leading research libraries in North America. Its mission is to shape and influence forces affecting the future of research libraries in the process of scholarly communication. ARL programs and services promote equitable access to and effective use of recorded knowledge in support of teaching, research, scholarship, and community service. The Association articulates the concerns of research libraries and their sponsoring institutions. ARL is currently comprised of 124 institutions and 16 of those are Canadian. Most of those institutions are academic Research Libraries, but we also include the National Libraries of the United States and Canada, 2 Public Libraries plus the New York State Library and the Smithsonian Library. ARL is a very selective association, but while our members are few in number, representing only 4% of the 3,400 Higher Education Institutions in North America these few libraries manages 40% of the total information resources available to support scholarship and advance research. In the aggregate, these libraries spend over 2.35 billion US dollars annually with \$727 million going to acquisitions and collection development. One of the fastest changing statistics is the percent of acquisition funds spent on electronic resources – \$123 million in 2001 or 16.25% of total acquisitions. This investment in access to electronic resources is five times as much as was invested five years ago.

The Traditional Research Library Mission is in Jeopardy

While these aggregate numbers capture the importance of research libraries in the scholarly communication system, it is also important to note a disturbing trend. The following chart illustrates the level of investment Universities are making in libraries from 1982 up to the present. This chart portrays the Universities allocation to the library as a percent of all educational and general expenditures of the university.



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Academic Research Libraries were enjoying a level of 6 to 7% of G & E in the seventies. As you can see, by 1982 the average for a sample of 40 ARL members had dropped to about 3.7%. Over the last two decades, this percentage has declined even further to the current level of something around 2.8. . This is a very distressing number. The investment made by research universities in research libraries has experienced a steady decline over the last thirty years when examined as a as a percent of general expenditure. Library leaders need to pay attention to this trend line and assess what it means for the future of the Library. In my opinion, it suggests that the traditional research library mission is in jeopardy.

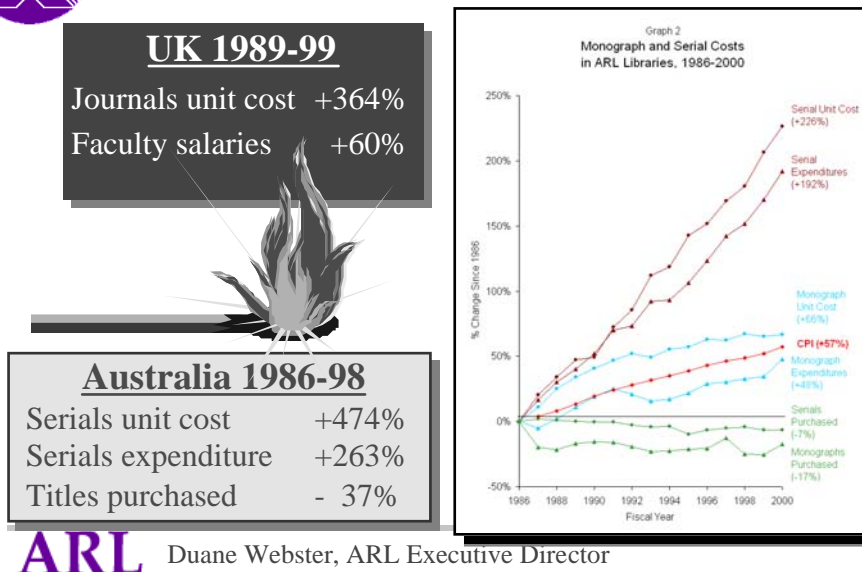
The Current Scholarly Communication System is Unsustainable

With this as background, I will explore next the premise that the current scholarly communication system is unsustainable. There are a number of factors contributing to this premise. There is the explosion in knowledge, both formats and volume. There is the increasing commercialisation of scientific, technical, and medical information placing control of needed information resources in the hands of large corporations with interests that often conflict with the mission of research universities. Furthermore, there is the consolidation of the publishing industry where the big firms get bigger and better positioned to exploit control of needed information for commercial gain.

The factor I want to focus on today is a growing gap between the cost of information and the ability of libraries to pay for it. The skyrocketing cost of information, especially scientific, technical and medical journals, has created dramatic economic pressures on the current system of scholarly communication.



The Global Journals Problem



This chart illustrates that the journal pricing problem for libraries has become a global crisis affecting librarians, researchers, and scholars everywhere. Serial unit costs have increased by 226% for American Research libraries over the fifteen years. Yet the consumer price index in the US has only increased by 57%.

In the United Kingdom serial unit cost has increased by 364% over a similar time frame. And in Australia serial unit costs are reported as increasing 474%.

During this same time frame, spending on these information resources increased by 192% in the US and 263% in Australia. Yet, the serial titles purchased declined by 7% in the US and 37% in Australia.

As you can see, this pattern of skyrocketing costs overwhelms the best efforts of libraries to seek additional resources and reallocate limited budgets in an attempt to keep up with the price changes. The result is a dramatic decline in titles purchased and available for support of research and instruction. This chart illustrates that the current scholarly communication is simply not sustainable with libraries paying more and getting less.

So we have increasing pressure on the scholarly communication system, not only because of the skyrocketing prices for traditional information formats but also because there are so many new and different formats for information that must secure library investments.

For example, we are witnessing a significant increase in the role of electronic resources. This emergent form of publishing comprises many different kinds of information resources offering

numerous distribution options and uncertain costs. The traditional roles in the creation, publication, distribution and use of scholarly information are undergoing transformation. For example, libraries now rent access essential information resources rather than owning them. This raises important questions of persistent access over time. Moving into the electronic environment, puts pressure on all parts of the traditional scholarly publishing process to adapt and engage. As I noted earlier, ARL members are now investing over 16% of current acquisition budgets on electronic access.

Strategic Challenges Facing Research Libraries

With these two premises in mind: the traditional mission of the research library is in jeopardy and the current scholarly communication system is unsustainable let me now turn to the array of strategic challenges facing research libraries. I have tried to frame this array of issues going from very broad externally driven issues, to the more specific, operational challenges. My point in this arrangement is to highlight the very broad issues, as the more important, fundamental challenges facing our communities. If we do not engage in them successfully, we will not be able to deal with the internal or more specific ones as we move forward.

Reshaping the marketplace for scholarly resources

If the scholarly communication system is unsustainable what can be done to reconstitute it. The key response is to reshape the marketplace for scholarly resources. We need to encourage competition, to exert pressure to reduce prices or at least minimize the recent pattern of double digit increases. We need to strengthen the not-for-profit publishers because they deliver better value for cost with higher use to cost ratios. We need to find ways to distribute scholarly works more freely on the Internet in order to break the stranglehold commercial publishers' current hold on the supply chain. We need to look at innovations such as separating the peer review process from publishing to allow distribution of peer reviewed work over the Internet and contain the decision making role of the commercial publisher. We need to encourage institutional repositories (digital archives for faculty works) to position universities more prominent in maintaining and providing access to the information resources created under their sponsorship.

All of these elements of strategic response to the market place are captured in an enterprise called the Scholarly Publishing and Academic Resources Coalition (SPARC). SPARC is an alliance of universities, research libraries, and organizations built as a constructive response to market dysfunctions in the scholarly communication system. SPARC serves as a catalyst for action, helping to create systems that expand information dissemination and use in a networked digital environment while responding to the needs of scholars and academe. . This enterprise operates under the legal and administrative umbrella of ARL, but delivers a distinct program.

SPARC's agenda focuses on enhancing broad and cost-effective access to peer-reviewed scholarship. This objective is pursued via three strategic thrusts:

- Incubation of competitive alternatives to current high-priced commercial journals and digital aggregations. This is implemented by publisher partnership programs and advisory services that promote competition for authors and buyers, demonstrate alternatives to the traditional journal business model, and stimulate expansion of the non-profit sector's share of overall scholarly publishing activity.
- Public advocacy of fundamental changes in the system and the culture of scholarly communication. This encompasses outreach targeted at various stakeholder groups (e.g., librarians, faculty, and editorial boards), as well as ongoing communications and public

relations activities that publicize key issues and initiatives. The advocacy thrust leverages the impact of SPARC's publishing partnerships, providing broad awareness of the possibilities for change and emboldening scholars to act.

- Education campaigns aimed at enhancing awareness of scholarly communication issues and supporting expanded institutional and scholarly community roles in and control over the scholarly communication process.

Since its formal launch in June 1998, SPARC has advanced this agenda by:

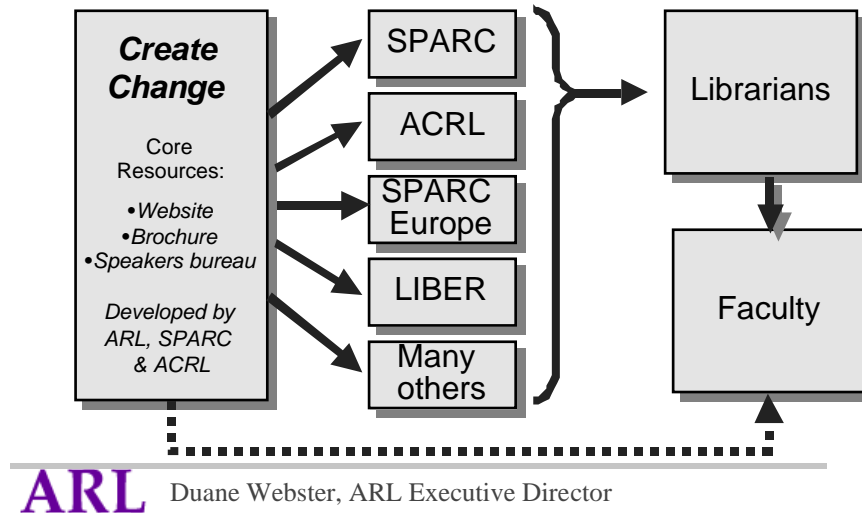
- demonstrating that new journals can successfully compete for authors and quickly establish quality; effectively driving down the cost of journals; creating an environment in which editors and editorial board members claim more prominent roles in the business aspects of their journals;
- stimulating the development of increased publishing capacity in the not-for-profit sector and encouraging new players to enter the market;
- providing help and guidance to scientists and librarians interested in creating change; and
- carrying the methods and message of change to international stakeholders.

Today membership in SPARC numbers approximately 200 institutions in North America, Europe, Asia, and Australia. It is working with the Ligue des Bibliothèques Européennes de Recherche (LIBER) and other European organizations to establish SPARC Europe, and is investigating the potential for a similar initiative in Japan. SPARC also is affiliated with major library organizations in Australia, Canada, Denmark, New Zealand, the UK and Ireland, and North America. More information on the SPARC program is available at <http://arl.org.sparc>.

Our newest effort, one that was just announced last week at IFLA, is SPARC Europe, a pan European alliance intended to influence positively the development of the market place. David Prosser, from Cambridge University Press has been appointed Executive Director and is taking up duties in October. The organization chart below illustrates the relationship of ARL to SPARC.



Carrying the Message of Change



We provide the legal and administrative framework for SPARC, to work very broadly, and we are doing this in the way that LIBER is providing that framework for SPARC Europe. We're very pleased to see this development.

Engaging the academy in an exploration of scholarly communication issues

Engaging the academy in an exploration of scholarly communication issues is essential to the challenge of reshaping the market place for scholarly information resources. This is because the marketplace issues are larger than the library. The creators, reviewers, and users of knowledge resources have a central interest in the reworking of the traditional system and this involvement will lead to a more complete understanding of the pressures for change as well as a commitment to new directions. Fundamental change in the scholarly communication system needs to come from leadership within the academy.

One expression of interest in these issues by the scholarly community is the recently announced Budapest Open Access Initiative (OAI). The OAI is one promising response to this crisis by a community of concerned scientists working with librarians. OAI calls for *free, unrestricted access* on the public Internet to the literature that scholars give to the world *without expectation of payment*. The ultimate intent of OAI is to accelerate research, enrich education, share learning among rich & poor nations, and enhance return on taxpayer investment in research.

How can OAI accomplish this ambitious goal? Their proposal is to use existing funds to pay for *dissemination*, not access. Let me illustrate. We have established that the revenue for commercial publishers is roughly \$4000 per article. We can also establish that the first copy cost of preparing research for publication is roughly \$200 to \$1,000 per article. Arguably, the marginal cost of electronic network distribution is virtually zero. This means that if you are able to achieve the benefits of web distribution, you could save potentially \$3000 or more per article. This equation gives the community a radical opportunity to rethink the economics of scholarly communication. More information on Budapest Open Access initiative is available at: www.soros.org/openaccess.

Rethinking ownership and management of intellectual property

New copyright laws and a movement to rethink the ownership and management of intellectual property created within the academy are prompting widespread examination of intellectual property practices and policies. Issues here include:

- Growing concern for limitation of access to electronic resources maintained by commercial interests
- Helping faculty to understand their intellectual property rights and copyright privileges
- Influencing national and global legislative and regulatory actions
- Understanding the implications of new national legislation such as the Digital Millennium Copyright Act in US.

I want draw your attention to two recent publications that examine these issues. First, there is a report recently issued by the American Association for the Advancement of Science. It is entitled 'Ceasing the moment - Scientist authorship rights in the digital age' and looks at the impact of the current legal structures and the promises of electronic publishing. It concludes that current copyright law is an impediment to fulfilling these promises; and argues that trying to change the law is a long up-hill battle. The report instead recommends instead that authors use their leverage as creators to negotiate a different arrangement with the content industry, with the scientific publishers.

Another report you may find interesting is called 'Who owns teaching', and is the outcome of the Knight collaborative round-table on teaching, which was held at Princeton University last year. It gathered faculty from a wide range of disciplines to look at where we are going with teaching and how the forces of commercial competition and public accountability are shaping the question of who actually owns teaching. These reports indicate that there is a fundamental and growing discussion going on in the United States about what the relationship between the scholar creating new knowledge and the institution's support for that creative process.

Advocating traditional library values in the emerging networked environment

Now, more than ever, libraries are assuming a key role in facilitating the evolution of the networked information environment. Libraries engage both their traditional role and their evolving role in the networked environment to advocate values central to society and public interest. These values embrace:

- Intellectual freedom: the right to express ideas and receive information in the networked world.
- Privacy: The freedom to choose the degree, to which personal information is monitored, collected, disclosed, and distributed.
- Intellectual Property: A legal and policy framework to stimulate creativity and innovation, and to promote the progress of science and the useful arts through a fair and equitable balance of the rights and privileges of users, creators, and owners.
- Equitable Access: User-center, barrier-free, and format-independent access to information for present and future users.
- Infrastructure: cost effective use of physical and social architecture that enable and affect the operation of the networked world.

These values have worked out very well in the traditional print environment, but making sure those values are expressed and allowed to flourish in the electronic environment is very difficult.

Creating new roles and services

As the volume and complexity of information resources and access increases, libraries will need to create new roles and services. Librarians will need to promote innovation and change in order to meet the critical needs faced by the immediate populations that they serve. Issues here include:

- Reshaping the purpose of the library to meet the actual and emerging needs found in the university environment
- Working with academic disciplines to understand changes taking place with instruction and research practices
- Working with other information service providers to extend and rethink traditional service boundaries
- Expanding the influence of the library within the university; integrating the purpose and goals of the library with the university's direction
- Developing strong information management competencies within the student populations
- Enabling libraries to take on new institutional roles in advancing emerging systems of scholarly communication
- Fostering a collaborative North American effort to create and manage digital library content, including the development of portals designed for the particular needs of higher education
- Showcasing innovative approaches for library support of learning pursued at a distance from the sources of library materials and services

Defining Success in the New Environment

Describing and measuring library roles and performance is one of the longest-running and most recognizable activities of ARL. The ARL Statistics and Measurement program is widely recognized for the utility of its time series of descriptive information as well as the quality and timeliness of this information. Quantitative and descriptive statistics have been collected and published annually by ARL since 1961-62. The publication ARL Statistics describes the collections, expenditures, staffing, and service activities of the member libraries of ARL. The whole data series from 1908 to the present represents the oldest and most comprehensive continuing library statistical series in North America.

Research libraries are very concerned with understanding and describing success in the new electronic environment. We are convinced that the traditional measures of such as size of collections, number of staff, amount of expenditures, and titles added to collection while useful in describing common characteristics of libraries they focus more on inputs needed for success rather than outcomes or impact on the communities we serve. We are searching for new measures for understanding role and contribution of the library in the academy. We need to discover more about patron needs and to measure patron perceptions of library success. Once we have these new measures we will be able to reallocate resources and manage capabilities to focus on the distinguishing aspects of success. Other issues here include:

- Discovering more about patron needs and understanding how to reach people currently not using library services

- Developing more precise focus of services in order to connect with user needs. These and other projects that focus on higher education outcomes assessment can be followed at: <<http://www.arl.org/stats/newmeas/newmeas.html>>.

Library as Physical Space and Intellectual Space

Libraries need to enhance their traditional roles as a physical place where users can engage a wide variety of information resources and access tools. In the future library leaders must position the library as the intellectual space facilitating access, creativity, and scholarship. Aging facilities and competing needs for capital investment will demand increasing attention. Issues here include:

- Coping with the lack of space for collections; and identifying increased space options
- Creating, managing, and integrating service from off-campus storage facilities into daily services
- Reconceiving user space as electronic media increase and numbers of students/faculty using the resources increase.

Managing Collections in the Electronic Age and Assuring Long-term Access to Electronic Information

A critical challenge before research libraries is to develop access paradigms that support the changing circumstances of higher education and emerging communication technologies. This issue concerns the challenge of building and enhancing access to collections that meet academic needs, with the constraints of a limited budget; and balancing the growth of digital and traditional collections.

The rapid emergence and development of electronic information technologies make it possible to envision radically different ways of organizing collections and services the library has traditionally provided. Insofar as the finances of collection development approach a crisis, the new technologies offer possible mitigation and perhaps a revolution in ways of knowing. We have lived many generations with a world in which the technology of publication meant that access required ownership. The pressures libraries now feel have driven them to various forms of resource-sharing that begin to provide alternative models. New electronic technologies allow the possibility of uncoupling ownership from access. This possibility is revolutionary.

Traditional collection development issues continue to beg for solutions while, concurrently, the richness of emerging electronic resources exert pressure on libraries to discover ways to both support and connect them with the traditional collections. The creation of “one collection” of all information resources will continue to challenge libraries in the future. Other issues include:

- Financing access to an diverse array of information forms during a period of stable budgets and declining purchasing power
- Developing and maintaining collections while developing and maintaining advanced technologies
- Evaluating degree of usefulness of the collections for specific user populations (e.g. undergraduate, graduate, etc.)

- Maintaining and further developing access to non-English language materials in digital format
- Developing a seamless interface for information services
- Developing the digital library; developing methods of managing and connecting the many digital libraries across the higher education community
- Creating methods to control and access electronic resources
- Integrating electronic journals into the mainstream of collection development and service provision

Recruitment of the Next Generation of Librarians

Appropriate staffing is key to the development of an agile organization capable of meeting the needs of 21st century users. Research libraries need to develop effective strategies to recruit talented staff in a changing demographic environment. Central to this effort will be defining the core competencies for research library staff and identifying the means by which staff can acquire these skills. Research libraries must develop a pool of library leaders who can motivate and direct efforts to adopt new service roles that are responsive to users and to put in place strategies to ensure broad, enduring access to research resources. Issues here include:

- Recruiting and retaining first rate staff capable of meeting the intellectual and service challenges of tomorrow
- Strengthening the roles of librarians on campus in accessing, interpreting, and deploying information resources
- Training and developing staff to use new technologies in both teaching and service provision to faculty and students
- Creating a culture of quality and active service involvement, including developing ways to meet independent learners on campus/off-campus
- Developing strategies to deal with inequitable salary levels and ferocious competition for talent in the marketplace
- Rationalizing a staffing plan and developing priorities for new positions
- Recruiting and retaining professionals from underrepresented racial and ethnic groups
- Developing critical negotiating and influencing skills among staff
- Developing staff capacity to innovate, and to manage change

Strengthening the ability of the library to attract funds and manage costs

Libraries and information services operations continue to experience spiraling cost increases for information in a variety of formats, while budget allocations remain relatively stable. Issues include:

- Financing human resource development and deployment
- Financing the parallel access systems for traditional and digital information resources
- Financing available technological capabilities in demand by an increasingly sophisticated user population
- Building strong donor relations and creating alternative investing opportunities
- Devising new revenue streams that support library operations and development
- Crafting fiscal mechanisms to assure effective and equitable deployment of acquisitions budgets
- Deploying practical tools for cost containment and performance enhancement

Closing Observations

Libraries will remain central to the management of scholarly communication for the foreseeable future but the pressures at work within the scholarly communication process are precipitating a transformation in the character of these familiar institutions. The strategic challenges facing research libraries are reflective of university wide issues as the university prepares for the dramatically changes conditions of tomorrow. Library responses to these pressures will only be successful if they are orchestrated as collective strategies.

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