Radical change by traditional means: deep resource sharing by the University of California libraries

Based on a paper presented at the 27th UKSG Conference, Manchester, March 2004

Libraries cooperate to expand access to collections, but more importantly to achieve economies of scope and scale as well as market power. Library collaboration is essential to cope with static budgets, rising costs, and the current information marketplace. The University of California (UC) libraries have built a collaborative infrastructure that encompasses a shared online catalog and journal indexing databases, storage facilities, document delivery and online requesting services, shared digital collections and more. Soon, this will expand to include shared print collections and new collaborative services. The combined scope of these joint activities and the interactions between them has created a very complex and highly interdependent system. Methods of adapting to these complexities are beginning to point to some fundamental changes in the ways that UC libraries will operate. Some of the challenges are illustrated through discussion of issues related to management of the UC libraries' shared collection of licensed digital journals.

GARY S LAWRENCE
Director
Systemwide Library Planning
University of California, USA

Why do libraries cooperate?

Traditionally libraries have cooperated in order to expand access to collections beyond the walls that enclose their own holdings. However, the more fundamental reason for libraries to cooperate is to achieve economies of scope and scale and bargaining power that they cannot achieve within their walls. René Olivieri (Blackwell Publishing) has provided plentiful evidence that size matters.[1] It is contended that a single library is simply too small an organization to compete effectively in the modern information marketplace. Libraries collaborate to survive in the face of static budgets, rising labor costs and rising cost of information (see Figure 1). Libraries cannot hope to stay ahead of this curve acting alone.

The University of California (UC) consists of nine (soon to be ten) major research universities under a single governing board. Together, UC libraries comprise about 33 million bound volumes, 340,000 current serials subscriptions and enormous quantities of maps, manuscripts, microforms and all of the other formats that make up a modern research library collection. However, even the largest library, UC Berkeley, with a relatively formidable budget of \$45 million, is too small to be a really effective player in the modern world. By combining the resources of all the UC libraries, about \$250 million (see Figure 2), a more respectable figure, is reached. That is about the same size and the same economic power as OCLC. However, as Figure 2 shows, it still may not be large enough to contend effectively with some of the organizations that libraries have to deal with. For these reasons, cooperation at UC is rapidly becoming central to the libraries' missions and operations.

The infrastructure for library cooperation at UC

Over a 25-year period UC has built a very substantial infrastructure for collaborative action, including a variety of basic services, new digital collections, with the technical services to support them, and capabilities to support electronic scholarship. The basic infrastructure consists of an
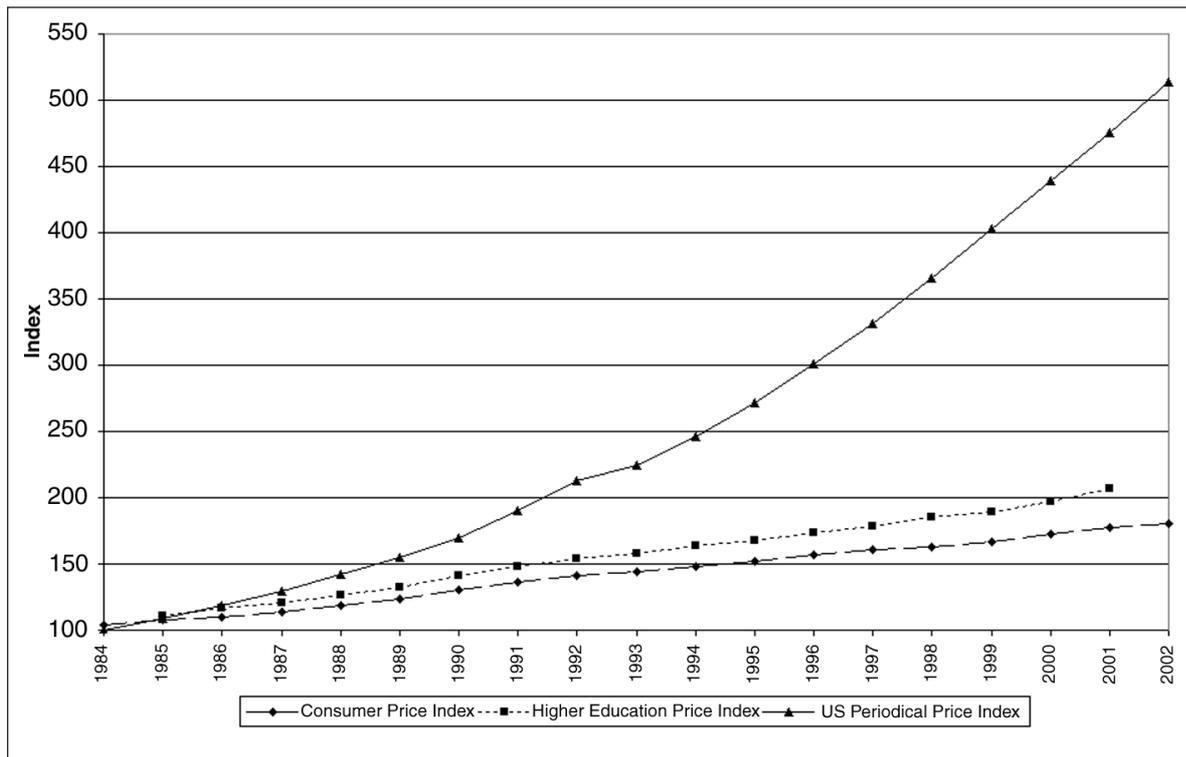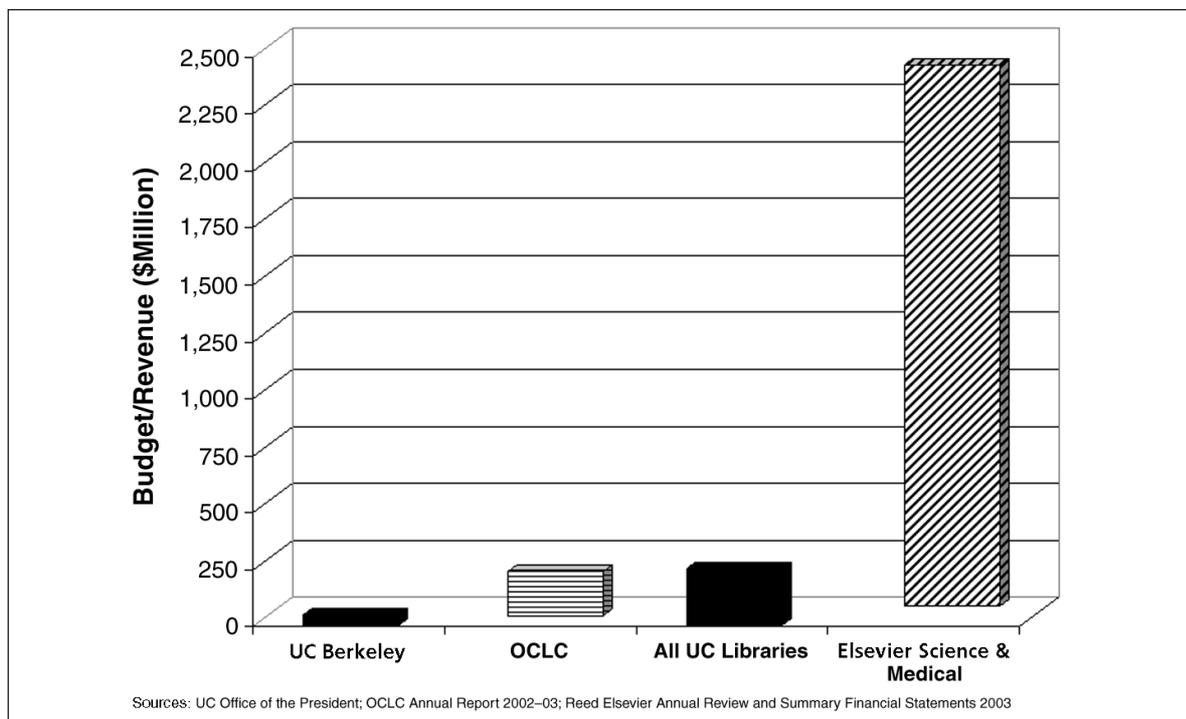
Figure 1. US periodical price increases 1984–2002

Figure 2. Budgetary resources of the UC Libraries

online union catalog that represents the biblio-graphic holdings of all UC campuses, two regional library storage facilities that provide high quality, low cost storage for infrequently-used materials, an overnight courier service for rapid delivery of material between all the campuses, abstracting and indexing databases to provide access to the contents of UC journal holdings and, more

recently, a user-initiated intercampus lending request service that allows all users to quickly identify and order the material they need from any campus.

With the establishment of the California Digital Library (CDL)[2] in 1997, UC has collectively added a number of significant digital collections that are available without restriction to faculty and students at all UC campuses. Where there are no license restrictions, these are also accessible to the general public. The most-used digital collection is the 8,000-title licensed shared digital journal collection.

The Online Archive of California[3] provides a database of encoded finding aids and, where available, links to digital surrogates of the content for the University's special collections, archives, museum collections and the similar collections of about ninety other memory institutions through-out California. The Counting California service[4] provides user-friendly access to a variety of demographic and economic data about California and Californians. UC has recently launched a digital preservation repository that will allow the digital content for which the libraries are respon-sible to be more reliably and persistently curated.

UC e-Links, a link resolution service, provides a way to move easily from an article or book citation in a database or library catalog to the full online content of the item. For print materials UC e-Links automatically looks for a UC library location for the item. To process the materials it acquires, the CDL contracts with the San Diego campus to pro-vide acquisition and cataloging services for the shared digital collections, chiefly, but not exclu-sively, the shared journals.

UC has also created platforms to support electronic scholarship initiatives through an eScholarship program.[5] The eScholarship Reposi-tory offers UC faculty a central location for deposit-ing any research or scholarly output deemed appropriate by their participating research unit, center, or department. Full-service support for digital journal production and distribution is also provided. UC has recently announced the avail-ability of the first peer review journal supported entirely by eScholarship facilities.[6] Services are also available to manage the access and distri-bution for electronic books.[7] UC works very closely with the University of California Press in much of this.

The beneficial experience with shared digital collections has led to the launch of a new initiative for the development of shared print collections. The first of these is the prospective acquisition of print titles for which a license for the digital format is already held. UC is currently creating a shared print archival collection of journals licensed from Elsevier and the Association for Computing Machinery and will shortly create a similar set of collections for titles licensed from Kluwer and Wiley, totaling around 2,000 titles by the end of this year. These collections, which will be housed at one of the Regional Library Facilities, afford the campuses the opportunity to realize substantial prospective budgetary savings if they choose to cancel their own existing print subscriptions, as well as savings in shelf space.

UC is also looking at developing shared collections of highly redundant, low use print holdings that do not have any digital equivalents. For example, government documents, which are acquired in great number, are highly duplicated among the campuses as part of the federal govern-ment's depository program and are generally infrequently used. To complement the prospective journal collections described above, UC is looking to create shared retrospective archival collections of print journals for which there is also digital access. The most obvious example is the JSTOR journals. Because this collection involves making decisions about the disposition of materials that the campuses already have in their collections, it raises some challenges that prospective develop-ment does not. With the exception of the JSTOR collections, consisting of about 465 titles or 23,000 volumes, there are an average of seven copies of each title held in UC campus libraries. If the cam-puses no longer have to house those locally, there is an opportunity for substantial space savings.

Some benefits of deep collaboration

The benefits of these collaborative programs are substantial. UC gains system-wide access to a wider and deeper collection than any of the cam-puses could have provided to users independ-ently. Effectively, UC has moved from nine collection silos, loosely linked by a thin thread of inter-library lending, to a combined collection of 33 million volumes that is equally accessible to

users at any UC campus. This is connected by efficient intercampus lending services and capped by a shared digital collection, and shortly by shared print collections, which are explicitly available to everyone in the system.

This has vastly improved users' ability to discover and obtain information from these collections. The steady growth in inter-library lending of returnable items among UC libraries, shown in Figure 3, has ramped up substantially since 2000 when the user initiated requesting service was made available. The most dramatic growth has been in the use of shared digital collections.

UC is able to manage its collections more effectively and efficiently. The shared print collection initiative described earlier is one token of that capability. There is also a greater capacity to innovate. By way of illustration, the Melvyl union catalog, the regional library facilities and the abstracting and indexing databases were all developed and put in place over a 20-year period beginning in the early 1980s. By contrast, user-initiated inter-library loan requesting, link resolution services, the eScholarship repositories, the digital preservation repository and the shared print collections are all developments of the past five years.

UC has also begun to exploit its collective market power much more effectively. One important result of the concerted effort to focus this power in recent negotiations with Elsevier for renewal of the ScienceDirect product was to hold the inflation level at bay for at least five years. This will allow the redirection of some of those resources to support more fundamental initiatives that may have a stronger long-term effect on scholarly communication.

There have also been substantial financial benefits. Rough estimates suggest that if UC libraries had been able to provide the same level of service they do now, but without their collaborative infrastructure, it would have cost the University at least $80 million more per year, equal to one third of the current total University Library budget.

The effect of deep collaboration on the operations of the UC libraries

With the exception of the new initiative in shared print, there are no collaborative services at UC that have not been successfully implemented to some degree by other groups of libraries. However, owing to the combined scope of all these collaborative activities and the interactions between them, the University of California library system has become a very complex and highly interdependent system. The methods of adapting
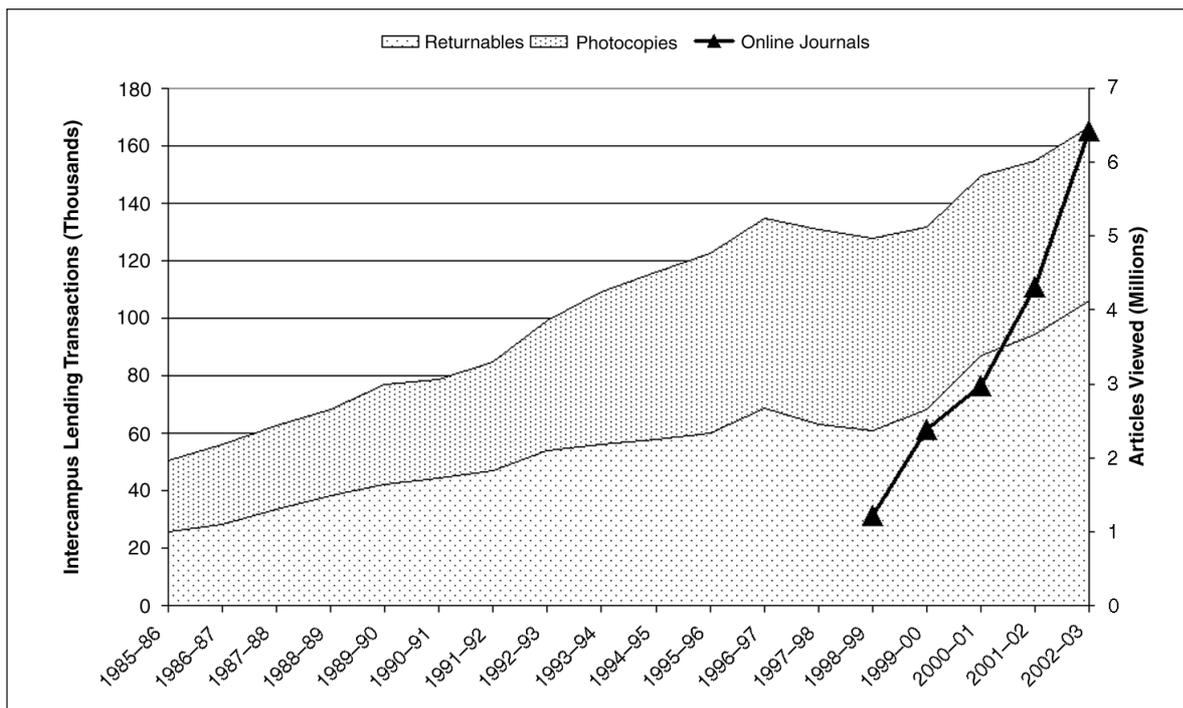
Figure 3. Growth in resource sharing 1985–2003

to these complexities are beginning to point to some fundamental changes in the ways that UC libraries will operate.

There are some challenges in the management of the shared digital journal collection; these functions may differ from their counterparts in a single-library environment.

Licensing

The issues are similar to those of any reasonably large licensing consortium: license management, negotiation, communication among the parties and collective decision-making.

Serials work

Acquisitions, claiming, receiving, inventory control and fund accounting must be coordinated among ten different campuses. Many of the routine products of serials work cannot remain centered within the acquisitions and serials modules of the integrated library system at UC San Diego, but must be disseminated to and used by all the other UC libraries.

Bibliographic access

The shared cataloging operation produces catalog records for everything that is in the collection, but those now must be loaded both in the University-wide catalog and all the campus catalogs. That information must somehow be integrated into and updated within an increasingly bewildering array of journal lists and resource directories of all kinds.

De-selection

Unbundling a journal 'big deal' is a major challenge in a collaborative environment, because it involves collective, University-wide, title-by-title assessment of what to keep and what to drop, as well as the relationship between digital and print holdings that exist on each campus.

Space management

Collective decisions about digital journals imply collective decisions about the disposition of their print counterparts. In early 2000, UC embarked on a research project called the Collection Management Initiative, with substantial support from the Andrew W Mellon Foundation, which intended to find out to what extent the user community was prepared to accept digital journals as a substitute for print.[8] Through a series of extended experiments, interviews and surveys, it was discovered that faculty in all disciplines prefer digital journals to print in most cases, and would like to see more of them, but there are some cases where the print must remain the preferred format for a variety of purposes. The initial shared print journal collections provide a shared print back-up for the digital in order to meet the needs for print that have been identified in the CMI project, even though they are needed very rarely for those purposes. As a result, decision-making for shared collections now includes consideration of the availability of library space on each campus, the space that is required or could be saved for various journals in various locations, and the operating and capital costs of maintaining the collections.

Financial management

Of the total UC library collections budget 62% is located at the campuses for their discretionary acquisitions, 38% is now invested in shared collections. A commitment of that size long ago outstripped the ability of central administration to generate and devote funds to its support. Centrally managed funds only provide 9% of the total collections budget, which means that 29% of the total budget, or about 32% of the budget that is controlled by the campuses, is now devoted to shared collections (see Figure 4). This is a token of the campuses' commitment to the shared collection
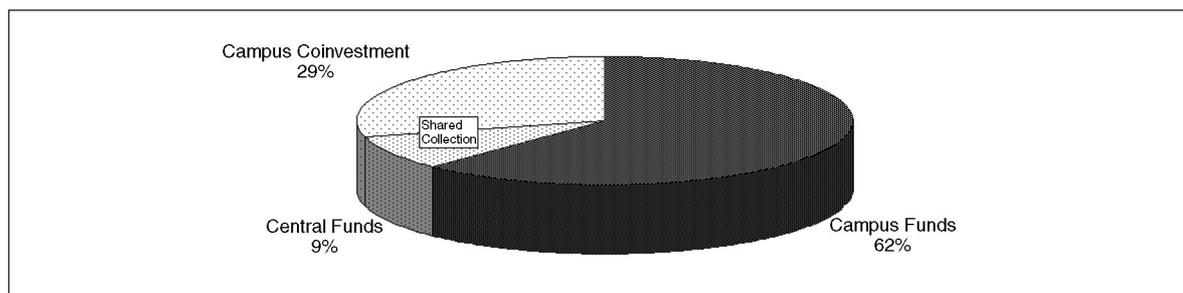

Figure 4. Components of the UC Libraries' collections budget

strategy. It is also a problem, as budgets are being cut in California. Campuses face a difficult choice between continued investment in shared collections and meeting local needs. Moreover, because of the high level of interdependence, individual campus decisions can have a dramatic effect on the extent and quality of the collections and services that are available to all campuses on a systemwide basis.

Organization and administration

As UC moves deeper into collaboration, one of the principal challenges is to plan, manage and administer the joint activities in ways that are both effective and not impossibly expensive. The consultative process illustrated in Figure 5 only addresses the infrastructure in place for making decisions on planning; the structure for operational consultation and coordination is equally complex. New organizational structures will be needed so that UC libraries can make a host of policy and operational decisions collaboratively in 'real time'.

Operational systems

Operational data, stored in silos, are scattered among the campuses, such as acquisitions systems, serials control systems, catalogs, metadata repositories of all kinds. Campus staff now have to harvest these by hand in order to get the information needed to make collective decisions, because these systems do not interoperate and there are no systems on the market that actually meet the full range of UC libraries' collaborative needs.

Service models

The information that UC users need to search and access the information resources available to them is similarly scattered among a variety of systemwide and campus catalogs and information repositories, as well as publisher sites and other external locations. UC has managed to glue these together in something of an ad hoc fashion in order to deliver systemwide services. Work-arounds, such as loading records for shared resources in all the campus catalogs, are enormously expensive, not entirely successful, and do not provide a good
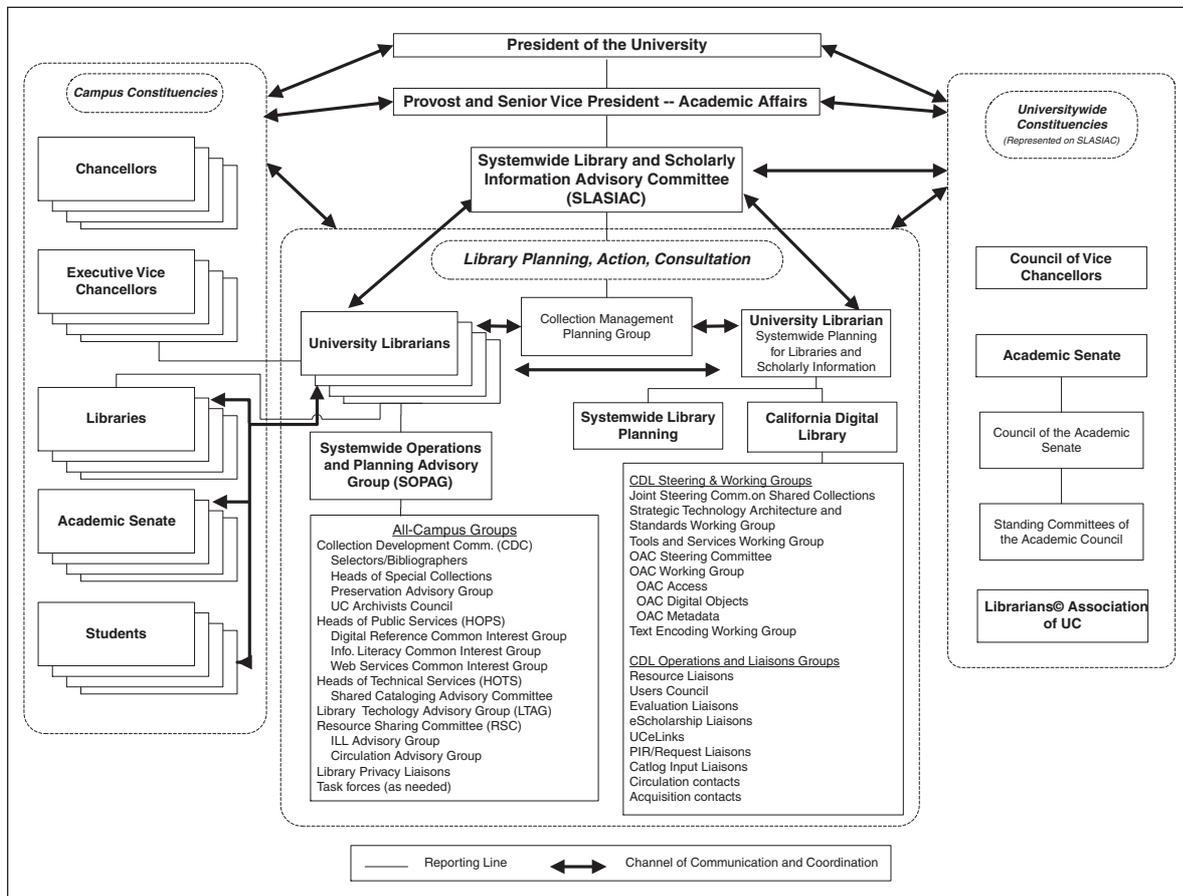

Figure 5. Components of the Planning & Consultative Structure for UC Libraries

experience for users. Eventually, solutions must be developed to effectively and efficiently provide a system wide (and broader) view of the universe of available information to users, while at the same time giving campuses more flexibility to develop the services that are most needed by their individual user communities in the most cost-effective manner.

Archival responsibilities

As UC libraries develop shared collections they will have to be very explicit about how the collections will be used, and about the trade-offs between archival persistence and access that will characterize them. These considerations require a more thoughtful and analytical approach to defining and supporting the archival responsibilities of UC libraries.[9]

In conclusion, it is evident that any single library, even the largest, is really too small to compete successfully in today's information technology and publishing marketplaces. Deep collaboration can address these issues, but is deeply challenging and very difficult. It raises complex problems to which current professional practice and available technologies do not offer any ready answers. UC has made a solid start at finding a new way for libraries to work together to gain the maximum leverage that is available from its resources and still provide the best quality service to a very diverse user clientele.

References

1. Morris, S. and Olivieri, R., The secret life of STM publishing, also published in this issue of *Serials.* The quotation referred to was quoted in the original presentation.

2. For more information see: http://www.cdlib.org/

3. For more information see: http://www.oac.cdlib.org/

4. For more information see: http://countingcalifornia.cdlib.org/

5. For more information see: http://escholarship.cdlib.org/

6. For more information about *InterActions: UCLA Journal of Education and Information Studies*, see: http://repositories.cdlib.org/gseis/interactions/

7. For more information see: http://texts.cdlib.org/escholarship/

8. A description of the project and a report of its findings are available at: http://www.ucop.edu/cmi/

9. See, for example, Schottlaender, Brian E.C., "You say you want an evolution. . ." The emerging UC libraries shared collection, *Library collections, acquisitions, & technical services*, 2004, 38(1) 13–24.

■ **Gary S Lawrence**
Director, Systemwide Library Planning
University of California, Office of the President
1111 Franklin Street, 11th Floor
Oakland, CA 94607-5200, USA
Tel: (510) 987-9461
Fax: (510) 587-6401
E-mail: gary.lawrence@ucop.edu