Reflections

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Bensman and Wilder's "Scientific and Technical Serials Holdings Optimization in an Inefficient Market: A LSU Serials Redesign Project Exercise" (see p. 147 of this issue) is an attempt to create a theoretical foundation to guide analysis of the scientific and technical journal system. Bensman and Wilder's findings are the concentration of value on a small set of titles, the concentration of cost on a small set of titles, and the low overlap between the two sets. The purpose of the present paper is to reflect on these primary findings and the implications of those findings for library and university administrators faced with developing a response to the crisis in scientific and technical serial pricing.

The Concentrations of Value and Cost

Throughout the scientific and technical (ST) journal literatures, measurable value is concentrated on a relatively small number of titles. These elite titles are generally published by U.S. associations, and most have been rated at the top of their fields for many years. The stability in these ratings suggests that these journals will tend to remain elite for the foreseeable future (p. 176). At the other end of the value continuum, the ST journal literatures contain large numbers of titles with little value. These titles are generally commercial publications.

The cost of ST journals also concentrates on a relatively small number of titles (p. 208). There are, however, few titles that appear in both the high-cost and the high-value lists. Herein lies the core of what Bensman and Wilder's analysis offers administrators: Libraries can cut serial costs dramatically without reducing the intellectual content of their ST serial collections by basing subscription decisions on journal value rather than by seeking comprehensive subject coverage.

Can a study of LSU's faculty, collections, and library services be used to make such sweeping statements? Bensman and Wilder present substantial evidence that academic science functions as a single system, with discipline-wide consensus on what is important research, which institutions tend to produce it, and which journals tend to publish it (p. 171). For example, while LSU's wetlands-related science faculty have a unique set of interests and attributes, they operate within a single national and international community of wetlands scholars, with a community-wide consensus on which are the most prestigious programs, researchers, and journals. Under these circumstances, data from LSU can function as a microcosm of the larger system.

A Theoretical Application of these Principles to One Serial Collection

Bensman and Wilder demonstrate how a collection strategy based on value would affect LSU Libraries' ST journal collection. It should be said that this analysis is

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strictly theoretical; it is not a reflection of strategies actually in effect at LSU Libraries.

Bensman and Wilder first combined the list of journals named by faculty as desirable but not on subscription with the list of all ST journals on subscription. The combined list was then separated into 33 subject categories, or cores, to prevent the ratings of larger disciplines from overwhelming those of smaller ones.

Bensman and Wilder established value and cost targets for each core such that the resulting lists would contain 75% of each core's aggregate faculty score, and reduce each core's cost by 75% (p. 187). At bottom, choosing to satisfy 75% of the faculty's perceived value was based on Trueswell's 80/20 rule, but whatever number is selected, it is critically important to avoid setting the value target at or near 100%. When the core lists are sorted by faculty score in descending order, there is little or no consensus on the titles in the last quartile (consensus actually disappears at about 50% of faculty score, but satisfying only 50% of faculty score was thought to be unrealistic in political terms). In statistical terms, use of these titles is random, and they are disproportionately expensive. Both factors make them prime candidates for document delivery. The 75% cost reduction target was set to test the hypothesis that a collection strategy based on value could also reduce costs substantially.

The results of these tests were startling. Using the above parameters, it became immediately apparent that LSU's existing ST serial list was not in fact seriously damaged (p. 194). This was particularly surprising given LSU Libraries' aggressive cancellation projects and its policy of adding no new subscriptions, in effect between 1986 and 1994. An explanation can be found in two aspects of the foregoing analysis. First, at the heart of LSU Libraries' past serial strategy was the cancellation of high-cost ST journals. Bensman and Wilder established that cost is not related to value in ST journals; hence, on the whole, cost-based cancellations did not damage the collection. Second, the policy of adding no new subscriptions took advantage of the high degree of stability among elite ST journals. As a rule, newer titles have lower value to ST disciplines.

The results were also startling in terms of the titles and expenses involved in reaching the value and cost targets. To bring all cores up to the 75% value target, Bensman and Wilder calculated that subscription to only 118 titles would be necessary, at a cost of $81,882. Most of the increase in value stemmed from the top 53 titles, costing only about $39,000. The analysis also identified 342 titles for cancellation, saving $222,409. The net effect of these changes would reduce LSU Libraries' serial list by 224 titles, and its cost by $140,527 (p. 215). One can only imagine the cost reductions this approach would produce at libraries that have not reduced their high-cost serial lists as aggressively as LSU Libraries has done.

Practical Implications

Net cost reduction due to value-based cancellations and new subscriptions is an important consequence of Bensman and Wilder's findings, but this aspect is not to be considered the "solution" to the crisis in ST journal costs. LSU Libraries' hypothetical savings of $140,527 would probably be consumed in a year's time given an inflation rate of 10% on the new list. On the contrary, the benefit of this approach is twofold: first, it puts low-value, low-use literature on a much more cost-effective basis. In so doing, libraries benefit from the movement of commercial ST literature ever closer to the "free market." If commercial publishers are forced to rely for their revenue stream on the quality of individual articles, as judged by their usefulness to the scientific community, the vast and growing bulk and cost of ST literature will surely reverse course.

It is not enough, of course, to state that the growth of ST literature would reverse, because such a shift would cause enormous disruption throughout the sciences and the promotion and tenure system. The disruption would perhaps have its most immediate impact on academic libraries themselves, which provide the funding for the current system and must find ways of adapting to whatever follows. It is impossi-

ble to predict how such disruption would play out. It is equally impossible to imagine how the present system could be supported over the long term.

Comprehensive collecting is an article of faith at many large academic libraries, even for consensus-driven disciplines such as the sciences. Put bluntly, comprehensive collecting is inconsistent with value-based collecting. For libraries obliged or willing to forgo the goal of collecting every title published on a topic, Bensman and Wilder offer a conceptual framework for justifying the move to value, along with a process for doing so. Libraries that choose not to abandon comprehensiveness, however, are likely to find that their low-value, high-cost titles are nonetheless at risk due to declining subscription bases.

According to Bensman and Wilder's analysis, cooperative collection development does not make sense for print journal collections in ST disciplines. This is because the consensus of expert opinion falls on a very small and predictable set of journals. As a consequence, universities that do not own the consensus titles will find it cheaper to own them than to pay for use through document delivery or interlibrary loan. For titles outside the conscribed sphere of consensus journals, there is so little use that document delivery is by far the more cost-effective approach.

If Bensman and Wilder are correct in the assertion that all U.S. ST programs operate within a single system, the titles in the corrected core lists could be considered "core collection" lists for U.S. science and technology as a whole.

Despite the general solidity and stability of the ST system, Bensman and Wilder's model does not describe an unchangeable system. Changes in perceived quality do occur over time, both among academic programs and the journals that support them. One course available to university administrators interested in boosting their program rankings is to focus the publication portion of their promotion and tenure requirements on the high-value journal titles in each discipline.

Concluding Remarks

From a national perspective, the enormous sums spent on ST journals that are high in cost and low in value can be postulated as an unreasonable subsidy. To the degree that this subsidy is crippling academic libraries and capturing resources, Bensman and Wilder's analysis provides a powerful justification for the creation of a national coalition of academic libraries, publishers, and scholars to address this issue. The most promising such initiative is the Association of Research Libraries' Scholarly Publishing and Academic Resources Coalition (SPARC), which is intended to foster alternative publishing channels for the products of academic research (http:// www.arl.org/sparc/).