

# A METHOD OUT OF THE MADNESS: OHIOLINK'S COLLABORATIVE RESPONSE TO THE SERIALS CRISIS

## Four Years Later – Progress Report

*Thomas J. Sanville*

*Electronic desktop delivery allows far greater information use than was previously possible. Based on the OhioLINK Electronic Journal Center (EJC) experience, improved ease of access has demonstrated the high elasticity in information usage. Demand on EJC services provides proof of the dramatic benefits from expanded access. Patrons have executed over 1.8 million article downloads. On average each Ohio university uses 4 times more titles than they previously held in print, and 52% of downloaded articles were not available in print on each campus. Small and two-year colleges are also beneficiaries through first-time access to scholarly journals. Libraries and consortia should promote expanded journal access by taking advantage of a sustainable purchasing model that maximizes information use.*

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### **Introduction**

Four years ago, at the 1997 NASIG conference held in Ann Arbor, MI, Barbara Winters, then at Wright State University, and the author reported on the OhioLINK community's strategy to address the continued problem of declining serials access. This paper was published in *The Serials Librarian*, v.34 no. 1-2 ('98) p 125-39. The crux of our untested strategy was set forth then as follows:

We make a basic assumption that broader, faster, better access makes for more use of information. Our experience with patron based, unmediated, quickly delivered ILL requests of books leads us to conclude that current use of library materials is a poor indicator of the real need and use of information. With every major increment in improved access, use will explode above current levels. It is this premise that drives us to seek solutions to increase journal access rather than more effective ways to ration it. Our goal is to empower faculty and students to make the greatest use possible of an expanding body of information.

Last year, for the 2000 NASIG conference held in San Diego, CA, I provided an examination of the problems associated with the current practices for journal subscriptions and suggested several fundamental changes needed to overcome or minimize these problems. Most importantly, last year's paper summarized OhioLINK's then current experience in the execution of its strategy through its Electronic Journal Center. This paper updates last year's examination. Much of the text dealing with problems of current practice is repetitive although new perspectives have been added. The data for sections on the OhioLINK experience have been totally updated and new analysis added.

The OhioLINK experience continues to strongly support an adoption of the new practices based on consortium-level licensing. Consortium administrators and leaders today have new opportunities to expand the use of information dramatically by the patrons of our affiliated institutions through the intersection of highly portable and accessible electronic information and the collective buying power of our libraries. We can overcome the inherent limitations of the print medium, the entrenched and limiting economic practices of vendors to individual institutions, and the library-imposed, self-limiting, collection development mentality of information rationing that pervades our community. By radically changing the value equation of information delivered per dollar spent, consortia can set the evolution of our industry on a new and better, long-term course.

Critics claim we are doing no more than rewarding publishers who have gouged libraries with exorbitant price increases over the years. That we are buying large pre-set packages of journals that no one needs. That we are becoming more dependent on these publishers and their journals through these deals. That while what we are doing feels good in the short term, we are failing to do the right thing for the long term good of libraries and scholarly publishing.

Critics assume incorrectly that what we are doing today is an end state scenario. They fail to see the long term advantages these licenses provide in negotiating economically sustainable, long term access to a wider array of useful and needed journals. This paper will continue to portray that these licenses are a positive evolutionary step for the library community.

It should be noted that the major critics come from the few large libraries who have what most would consider an enviable wealth of journals and who must believe they are able to meet their patrons needs acting as an independent buyer. These libraries are also the institutions which should have long ago drawn a line in the sand with publishers but failed to do so. Now, the vast majority of libraries who have always lived with severe and forced rationing in their buying behavior have no choice but to forge a new reality in the here and now. We don't have the luxury to wait.

## The Old Rules

The traditional thinking underlying collection development is based on each library as an economic and operational island, with each library buying materials as a separate economic entity to meet the needs of its own users. This island mentality is a rational response to the limited portability of the print medium. Time and space weigh in as heavy limitations on the print medium. In this environment, the needs of most users can only be met by having the material on the shelf. That another library owns a needed document is of little or limited value if significant time or inconvenience is involved in obtaining access.

The publishing production and economic model was built on this physical library island reality: One physical copy for each physical library at a set price per copy. Each library could fill its shelves with physical copies as long as it had funds to do so. As scholarship expanded rapidly after World War II, clearly the publishers' economic model allowed for journal expansion even at very low aggregate subscription levels. But most libraries could not keep up and increasingly have not been able to adequately meet local needs as independent islands. The realities of forced rationing and that "have not" feeling have grown. Only a few libraries exist that might make the claim of meeting their patrons needs.

It is unfortunate that the level of subscriptions needed by a publisher to succeed economically is apparently much lower than that ideally needed by the library community. This incongruence is exacerbated by the strong tendency of libraries to hold on to subscriptions regardless of price increases, thus providing the publisher even more economic comfort and an incentive to keep adding journals.

To overcome the limitations of physical ownership, libraries supplement their collections through interlibrary loan and document supply services. With advances in technology and transportation options these can take on some significance. But, in a print driven world, these will always be marginal activities, incrementing each library's resources but not transforming them in any fundamental way.

With the print-based island mentality, collection development practices have developed

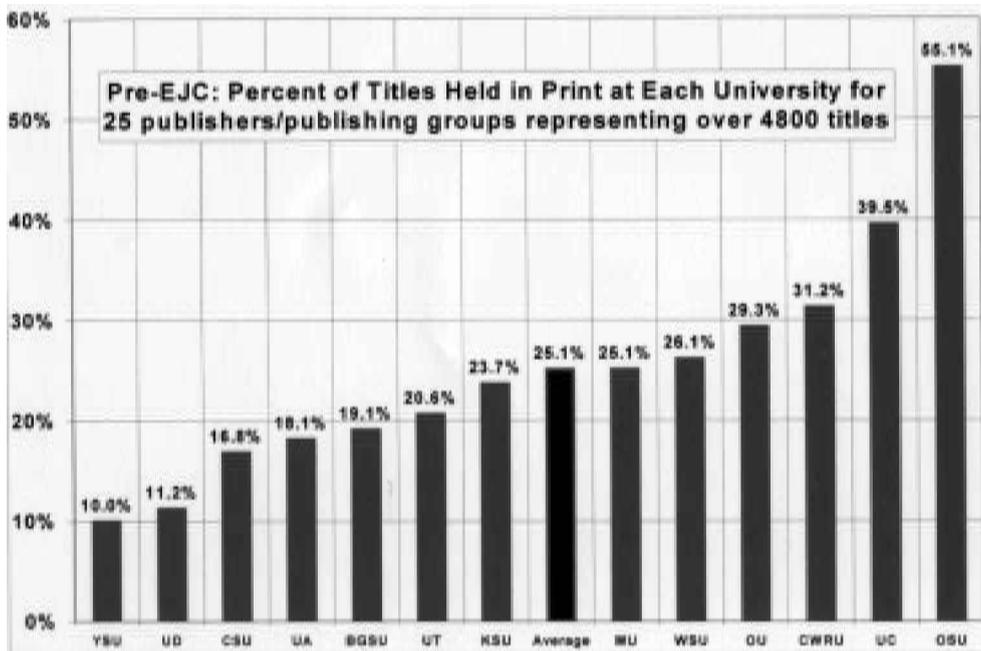


Chart 1

to make the hard decisions of selecting a most-needed subset of published information within each library's economic means. In so doing libraries are trying to reflect the interests of their clientele. At the same time libraries influence the interests of patrons by the limitations of what is made available.

Working under this current set of collection development rules, libraries have been able to buy less of each year's published material. More is published each year and the cost rises faster than budgets. Each year the library survives but does not succeed. Each library meets its mission just a little bit less effectively than the year before.

Most libraries would take no issue with this well-documented reality. It is real and the traditional responses to it were rational. However, it is important to examine our ability to create or respond to a new set of rules that better serve our needs. The accumulated years – actually centuries -- of dealing with the print medium gives us a legacy, a fixed perception of information needs, uses, and economics that inhibit our creating a dramatically improved reality.

Most librarians who play a role in collection development will claim to know what their patrons need. Certain journals or books are deemed essential and others of no value. These

judgments are based not only on the content of the item but also on an inherited and experienced perception of its usability within a print-bound world. There is reluctance by librarians to accept the notion that our judgments are woefully incomplete and inaccurate – especially when the medium of delivery changes use levels radically. We know that library use changes when books can be delivered to the professor's office instead of picked up at the library, when ILL requests show up in two days instead of two weeks, when journal articles are faxed instead of mailed, and when books or journals are located through electronic catalogs and databases and delivered almost instantly to the desktop. Why, then, are we reluctant to accept that the change in medium of delivery should change the collection development paradigm? If libraries, as a buying community, cling to the old rules of making collection development decisions based on the obsolete mentality of use and economics in a print-based world, we do a disservice to the patrons.

For Ohio universities, the old rules created a deteriorating world of individual collections whose trends follow the pattern repeated by ARL members and others; bigger budgets, reduced buying power, fewer books bought each year, fewer journal subscriptions. To illustrate, consider the holdings of 4,824 journal titles from twenty-five

important commercial and society publishers and publisher groups whose electronic journals Ohio academic libraries were interested in licensing.

Chart 1 shows the percentage of the 4,824 titles owned in print by each library. Ten of the thirteen libraries hold fewer than 30% of the titles. Only Ohio State University holds more than half of the titles in print, but barely, with 55.1% ownership. At the low end of the range, Youngstown State University holds only 10.0%. Given these statistics, is it really possible that the collective academic interests of the state justify the collection of, on average, only 25.1% of these published titles? Are the authors satisfied with this low level of ready access to their research in Ohio? What is the probability that in selecting these sets of titles our libraries had to discontinue or not purchase titles of equal perceived need? Surely no libraries would volunteer to create limited journal collections, so how can each library be so sure that it made the best possible collection decisions? Are the libraries and their patrons satisfied that with each passing year we spend more and get less on each campus?

As a consortium, OhioLINK's answers to all these questions lead us to dissatisfaction with the results of the old rules. It led us to conclude that if we were to succeed -- not just survive -- we needed to create a new set of rules that take advantage of the opportunities presented by technology and the collective buying power of the consortium.

### The New Rules

The first, and most fundamental, new rule under which we must operate is that the need for and use of information is highly elastic as access is improved with the rapidly evolving advances in electronic technology. This elasticity holds true for both print and electronically delivered information. In an evolving arena we can be, at best, only partially correct in our decisions for selecting material, and must realize that information is being used in an evolving, expanded, and as yet not totally definable dynamic new way. To achieve effective practices we must focus on enabling this expanded access rather than trying to precisely define it.

The change in mentality from "I know what my users need" to "Let's find out what my users

need" is the cornerstone to the new rules. The latter requires that we find ways to buy a broader array of materials, to make them more accessible, and to enable greater use. When we deliver physical materials more rapidly and bring electronic information to the desktop 24-hours a day regardless of the physical location of the user, we take giant steps towards determining what new information use dynamics are possible.

A second new rule is that the economics of group purchase are far superior to the old rule of the individual library as an economic island. The past pricing practices of vendors and publishers to individual libraries have been translated to electronic media in ways that allow for only a modest expansion in information resources. In fact, sometimes, it has meant a library must re-purchase the same content in another medium, or pay more to access material in several media. As individual buyers, more electronic products just means more resources to buy and more forced choice rationing decisions to make.

Many library products have relatively low penetration levels (market share) so consortium-based buying that promises higher share levels can be mutually attractive to libraries and vendors. Consortium purchasing can enhance vendor revenues and profits while lowering the library unit cost of purchase. Many consortia have experienced this phenomenon, saving anywhere from 20% to 70% when buying as a group compared to accrued individual library prices. OhioLINK has executed group purchases as extensively as any consortium, and as a result we can claim to the State of Ohio administration that rather than additional investments in our libraries resulting in less efficiency, the opposite is now true. The unit cost of information is going down, and now for each dollar spent more information is bought and delivered. This argument provides an enhanced basis for future success and funding.

Critics of the group purchasing of large title packages argue that this just makes us that more dependent on these publishers. Then the publisher will be able to be even more ruthless in pricing practices. Critics fail to recognize that this increased dependence takes place on the publisher side as well. The advantages to the publisher are substantial. No inherent imbalance in the relationship develops and the stakes are raised for both parties. In OhioLINK's experience there

becomes a greater incentive to find common ground for both the buyer and seller then when we are acting as individual buyers. The critics also do not take into account the new information that electronic use data provides at the bargaining table. They do not appreciate that these title packages are not immutable. The OhioLINK experience discussed later in this paper addresses these issues.

The third new rule is that the focus must be on information expansion and cost effectiveness. Rationing information in a way that is more cost efficient is a survival tactic but not a strategic approach for success. In general, the experience learned from the information licensing conducted by OhioLINK is that we should look carefully at what individual libraries will spend to maintain their current and scattered resources, and compare that cost against what it will take to achieve expanded group-wide access. OhioLINK has found that in many cases only a small increment in spending is needed to achieve expanded group-wide access. Even where a large increment is needed, the expanded access often results in a much better value. The remainder of this article will focus on the expanded use of information that results when the new rules are applied.

**The OhioLINK Electronic Journal Center experience**

The high elasticity in the use of information that results from increased access is proven with each

new service that OhioLINK provides. Our dramatic expansion of ILL through the combination of patron-initiated borrowing and rapid delivery has been broadly reported. The myriad licenses for electronic reference, citation, and full-text databases results in over 11 million searches and an estimated excess of 5 million documents delivered annually. However, the major cause of lost library buying power has been in the areas of scholarly journals, and so it is essential that consortial actions address this problem in particular.

The OhioLINK Electronic Journal Center (EJC) is a tool created to improve dramatically our use of scholarly journals beyond the use of print journals. The EJC is an OhioLINK operated software and hardware site designed to aggregate the electronic journals licensed from multiple publishers. It is accessed directly with title and subject category menus or traditional search form options. There are URL links to the EJC from our local and central catalogs, from our locally mounted Institute for Scientific Information (ISI) Web of Science, and from 37 other journal citation databases mounted at our central site, such as Medline, BIOSIS, PsycINFO, INSPEC, MLA, Sociological Abstracts, and Compendex.

The EJC was launched in April 1998 with the available full collections of Elsevier Science (now +1300 ISSN's) and Academic Press (now +200 ISSN's). Project MUSE titles were subsequently added in early 1999 and as available all the

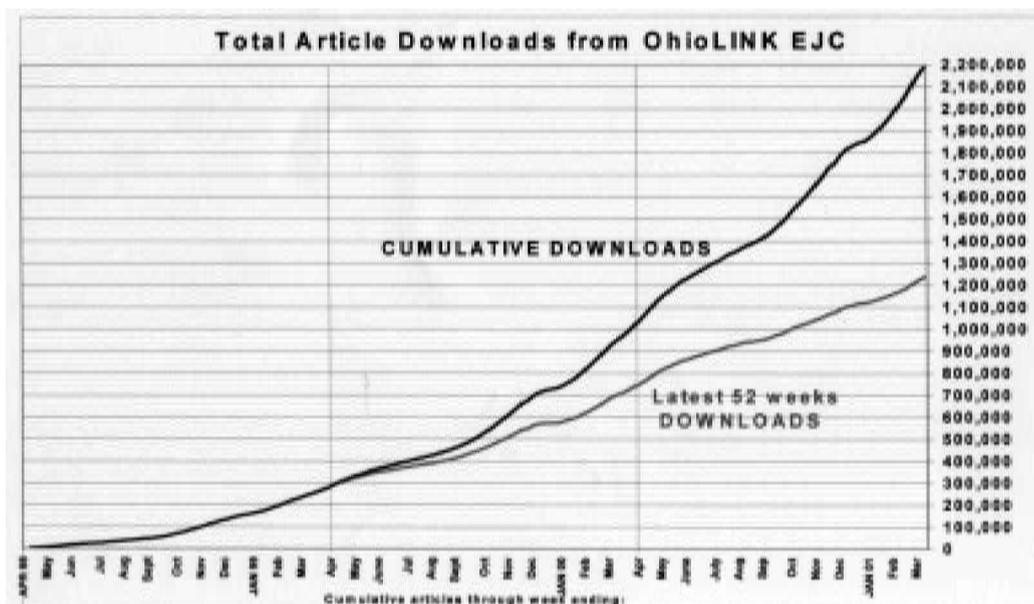


Chart 2

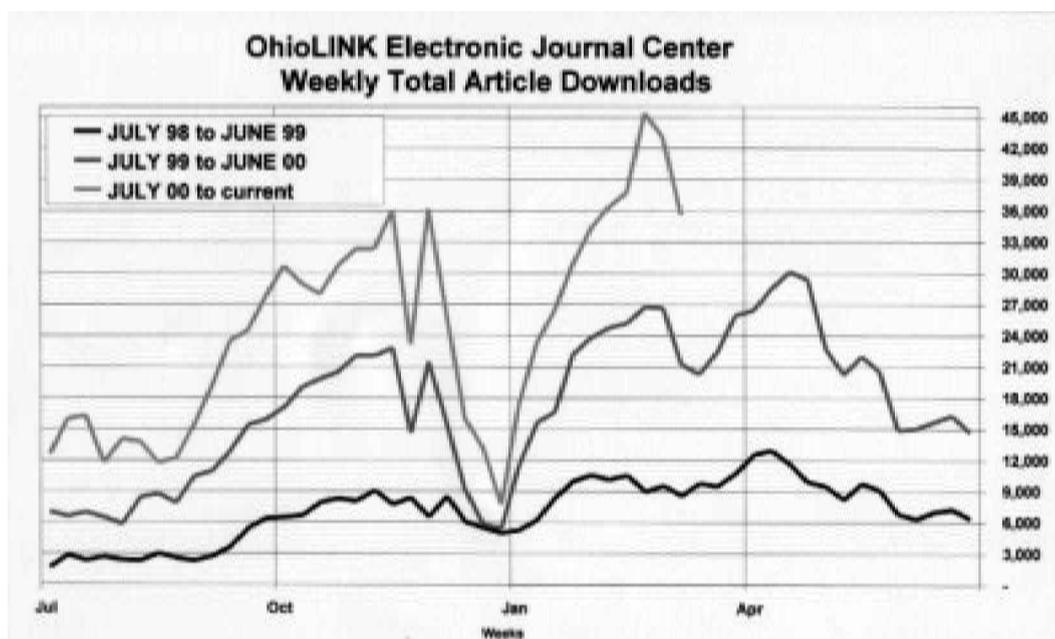


Chart 3

expanded MUSE titles (from 40 to now 135 ISSN's). Added in fall 1999 were the available collections of Wiley (+360 ISSN's), Kluwer (+600 ISSN's), Springer-Verlag (+400 ISSN's), and the American Physical Society (7 ISSN's). Spring 2000 saw MCB Press (150 ISSN's) and Royal Society of Chemistry (28 ISSN's) journals added. Over the summer of 2000 we added Institute of Physics (44 ISSN's), American Institute of Physics (31 ISSN's), and American Chemical Society (31 ISSN's). In 2001 Thieme (31 ISSN's), Blackwell Publishers (+240 ISSN's), and Blackwell Science (+180 currently growing to +275 ISSN's) are being added. Negotiations continue with other interested publishers.

Print titles are still being added to the electronic collections of some publishers and regular additions and changes result in a dynamic and growing ISSN count. All discontinued ISSN's and their past issues stay in the EJC as well. Back files

start at different points in time.

For all titles of each publisher, all OhioLINK publicly supported universities and colleges, and 30 of the 38 member Ohio private liberal arts colleges have access. By June 1999, 1,400 Elsevier and Academic Press ISSN's were available plus the more than 40 titles available from Project Muse. By the mid-June 2000 the total number of ISSN's available has grown to 3076. The total did not jump significantly until fall of 1999 with the loading of Wiley, Springer-Verlag, and Kluwer.

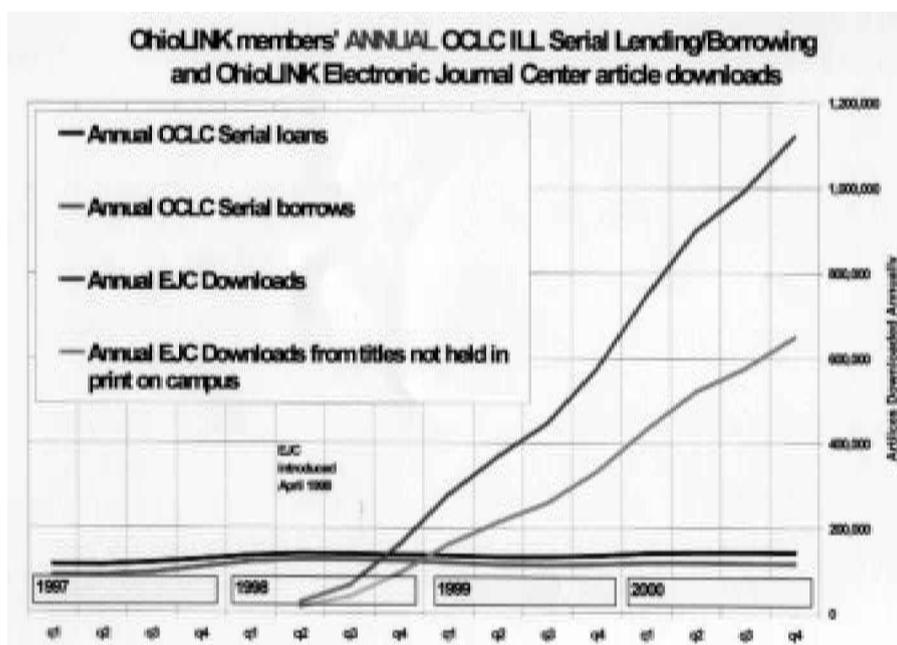


Chart 4

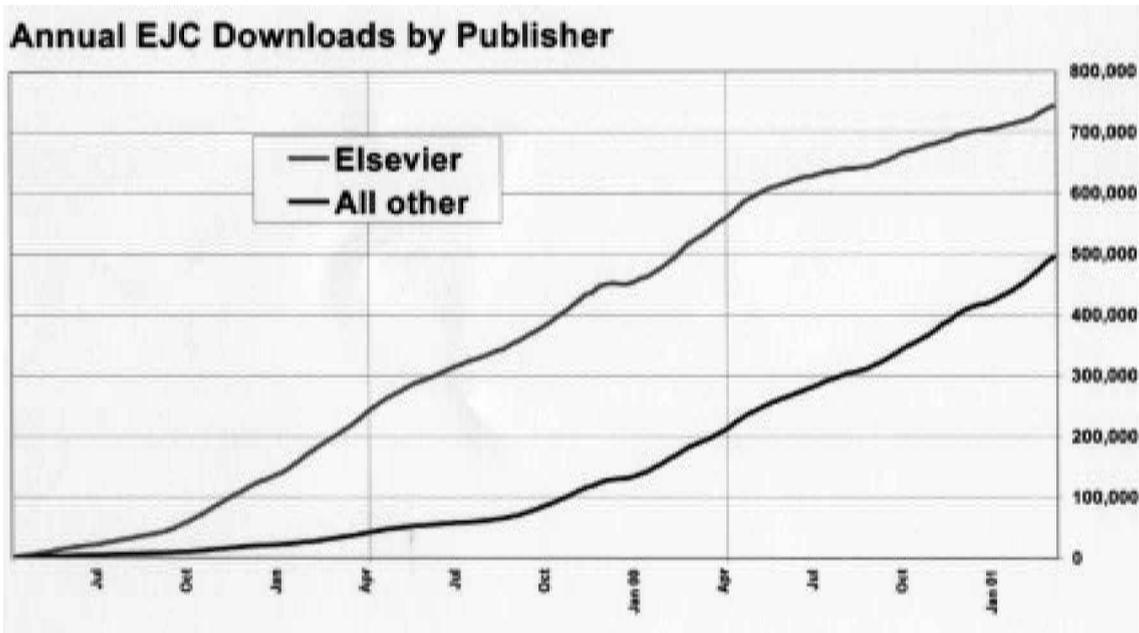


Chart 5

*The EJC Experience:*

During the initial 12 months of operation of the EJC, April 1998-March 1999, users downloaded 280,000 articles from virtually every title published by Elsevier Science and Academic Press. In the second 12 months of operation, April 1999-March 2000 the total number of articles downloaded grew to 740,000 with expanding use of the first 2 publishers and the use of newly added publishers' articles. Unabated growth continued with the annualized articles downloaded reaching 870,000 by mid-June 2000

and 1.1 million by the end of 2000 (Chart 2). The phenomenon of virtually all titles being used continues.

Weekly article downloads (AD) started out at 2,000-3,000 per week during the spring and summer of 1998, and during the 1998-1999 academic year, AD grew rapidly to a weekly peak of 12,500 (Chart 3). In 1999-2000 we had reached a weekly peak of 30,100 and in early 2000-2001 we already reached a weekly peak of 45,000, with a higher peak still to come.

How significant are these download levels?

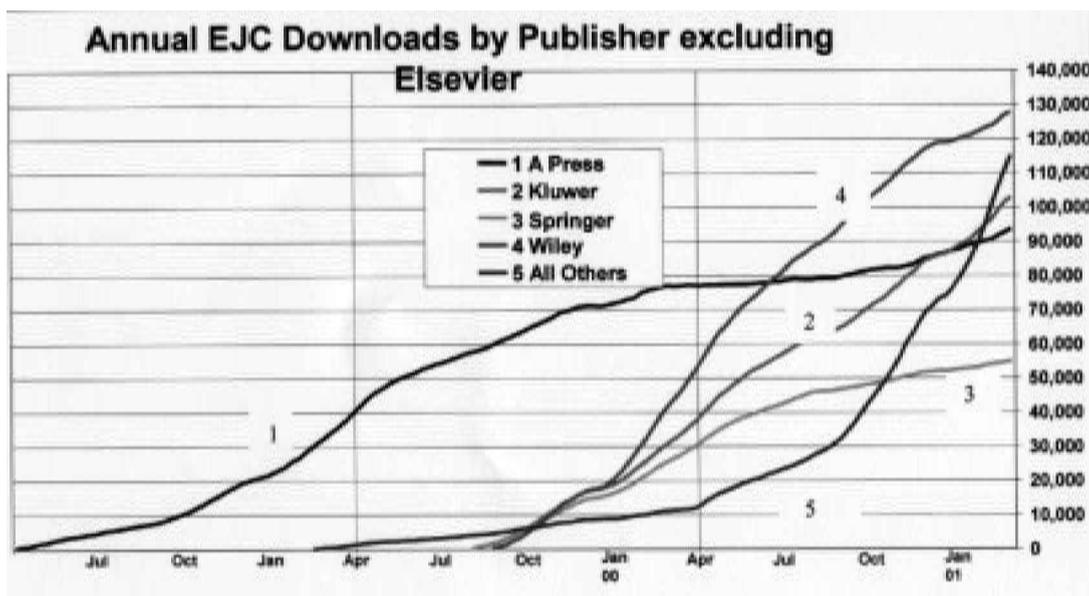


Chart 6

Table 1

	Article Downloads Calendar 2000	Articles Loaded in EJC	Number of Downloads per Loaded Article	Average AD per Loaded Art. indexed to Average
<b>Academic Press</b>	86715	178210	0.487	0.80
<b>Elsevier Science</b>	703486	1244345	0.565	0.93
<b>Kluwer</b>	86385	96713	0.893	<b>1.47</b>
<b>MUSE</b>	17767	16854	1.054	<b>1.74</b>
<b>Springer-Verlag</b>	52213	100842	0.518	0.85
<b>Wiley</b>	119031	118745	1.002	<b>1.65</b>
<b>Total/Average</b>	1065597	1755709	<b>0.607</b>	<b>1.00</b>

Chart 4 compares our EJC download levels for articles not held in print at the patron's home library to our OCLC ILL requests for non-returnable items. Of the 1,120,000 AD in the past year, January 2000- December 2000, approximately 58% or 650,000 AD were from journals not held in print at the downloading patron's library. Universities average 52% with all smaller four year colleges and two year colleges above 90%, many approaching 100%. Traditionally, these articles would had to have been supplied via inter-library loan (ILL).

The number of articles downloaded from EJC journals, not held locally, greatly exceeds the number of ILL transactions among the OhioLINK community on OCLC, which are steady at about 125,000 requests per year. Only through immediate desktop delivery will users make use of journals at these

expanded levels. This is even more impressive when one recognizes that the 650,000 articles were from just the EJC titles delivered electronically to the desktop. At this same time, we delivered over 1,200,000 articles via ProQuest's ABI/INFORM and Periodical Abstracts and numerous other articles via Academic Universe and other databases. As OhioLINK expands to include additional publishers, undoubtedly the total AD will dwarf previous perceptions of journal use and need due in large part to ease and speed of desktop delivery.

The EJC data also is very significant in its distribution among publishers. The introduction of additional major publishers and a more than doubling in the ISSN count has done little to arrest the growth in Elsevier Science downloads (Chart 5).

Downloads of Academic Press were affected by publisher additions, leveling off after the major expansion in titles in fall 1999 (Chart 6).

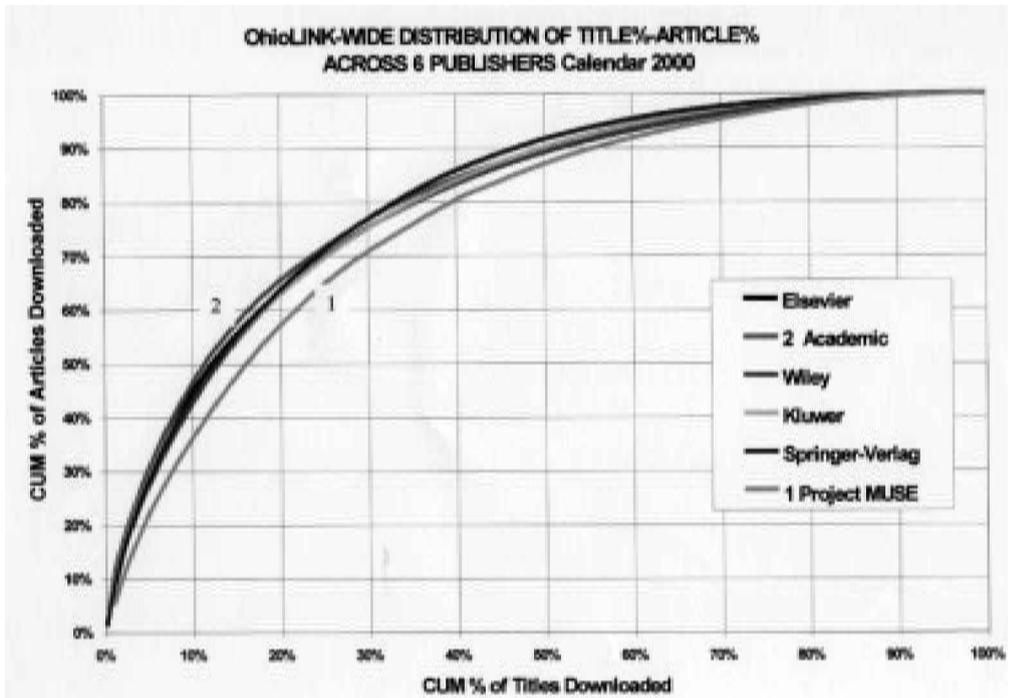
Academic Press renewed growth in the current academic year with the addition of new back file years 1993-1995. Among new publishers Wiley has generated the most activity, 127,000 downloads annually, followed by Kluwer at 103,000, and Springer at only 55,000. The number of titles loaded would heavily favor Kluwer and Springer over Wiley, but the number, currency, and completeness of articles delivered affects

Percentil	ES	A Press	Wiley	Kluwer	Springer	MUSE
10	8,669	4,273	4,618	2,659	1,407	897
9	1,237	1,095	988	356	329	368
8	726	522	553	213	209	255
7	497	388	333	152	136	158
6	369	242	252	109	87	124
5	260	190	176	76	58	86
4	187	139	125	52	38	58
3	122	88	92	34	22	46
2	63	71	62	17	14	35
1	25	27	38	8	7	15
	1	1	1	1	1	3

Table 2: Full Year-2000 Article Download ranges of Percentile Title Groups – descending AD per title

usage. The difference in usage is also a reflection of the inherent demand. Springer downloads have been negatively affected by its inability to

Chart 7



deliver a complete back file and current content.

The "All Others" category is comprised of the publishers generating lesser activity

levels. MCB Press is the leading publisher in this category with 33,000 downloads annually. We can expect both Blackwell groups to generate significant levels as they come online.

At this point we can observe that adding new titles is mostly, if not entirely, generating incremental, increased use. As we add linked bibliographies and enhanced searching options even more articles will be used. It may be some time before we see saturation in demand resulting in a broad cannibalization factor to develop.

It is difficult to make an equivalent comparison of journal usage among publishers. One consistent

phenomenon across publishers is that virtually all titles loaded are downloaded, even if many titles have only a few. Even if all titles are used, when measured relative to the number of articles in the EJC, article download rates vary among publishers. There are significant differences in the

average number of articles per title based on the extent of back files and journal frequency and articles per journal issue. But we can look at aggregate rates of article downloads compared to total articles loaded. We can examine the major publishers for whom we have full calendar 2000 data.

As seen in Table 1 MUSE has the highest use at 74% above the average, followed closely by Wiley at 65% and Kluwer at 47%. Elsevier, Academic Press, and Springer-Verlag have rates of use below the average. Elsevier and Academic Press both have the most extensive back files and thus

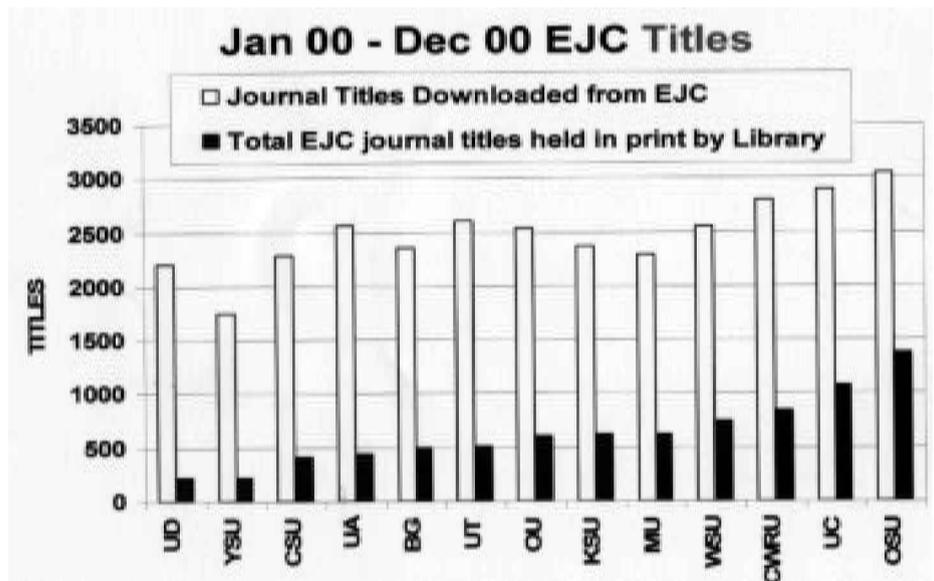


Chart 8

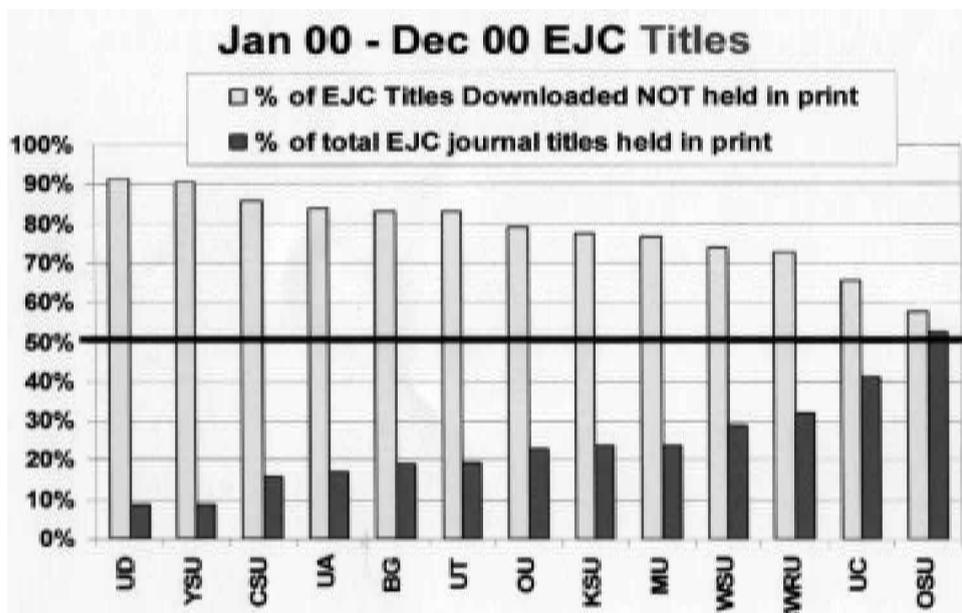


Chart 9

older, lower use articles could affect their use per article loaded. We have not yet conducted an analysis of use of articles downloaded by year of publication to verify this possibility. Springer-Verlag has had the most problems in supplying data and users have complained that this has negatively affected their reliance on the EJC.

Additional insight can be gained by putting each publisher's downloaded titles in descending order of use and then by dividing each publisher's titles into ten equal groups, percentiles. In this way we can compare relative use levels across a publisher's collection and relative to other publishers.

Table 2 provides this analysis. It lists the highest and lowest values of each percentile for each publisher. For example, Elsevier Science's top percentile of titles range from 8,669 to 1,237 downloads. The next percentile of

range profiles while Kluwer, Springer-Verlag, and MUSE have similar but still lower range profiles.

Notwithstanding the differences across publishers in Table 2, there is a very consistent internal distribution of article downloads across titles within each publisher. Chart 7 reveals that for each major publisher about 40% of the titles account for about 85% of the AD. This ratio is broader than the 20/80 rule that some people might assume. The basic distribution curve holds true for all 5 of the major commercial publishers with no significant differences. MUSE shows a slightly less concentrated distribution but only by 5%. On the extremes, the most heavily used titles,

titles ranges from 1,237 to 726, the next 728 to 487, and so forth. It reveals that Elsevier's (ES) heaviest used percentiles have download ranges greater than the comparable percentiles of the other publishers. Academic Press and Wiley show similar

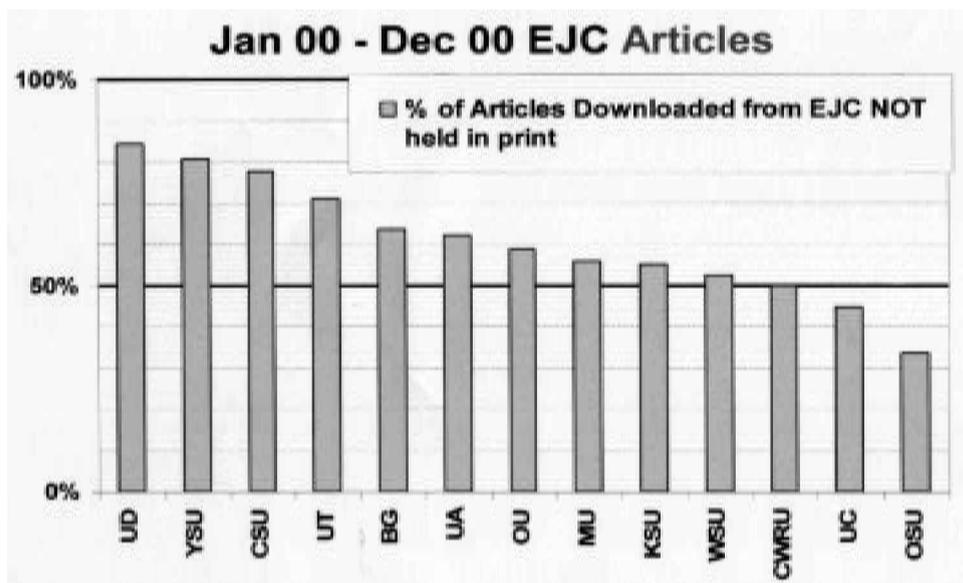


Chart 10

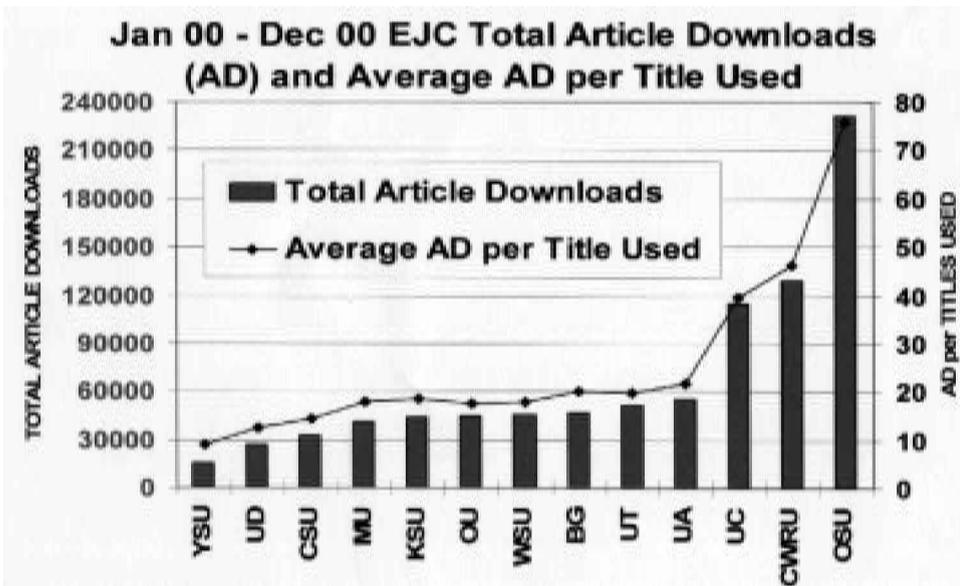


Chart 11

which represent 8-10% of AD, are only 1% of the total titles. The 45% least used titles deliver only about 8-10% of the AD. It is too early to predict which titles will permanently remain high or low AD titles. Patterns will likely continue to shift as we add publishers, improve our database links, and our users adapt to this new resource. And, of course, low use does not necessarily mean low value.

Chart 8 summarizes the dramatic expansion in journals used in our major universities when compared to the titles that were previously owned in print. On average, for the publishers

titles per university, a quadrupling in titles used over print access. The range of this phenomenon was widespread, from a low at Youngstown State of 1749 titles used to a high at Ohio State of 3,050. Some would argue that surely Ohio State, with 1376 of the EJC titles in print, already must be meeting most of their campus' needs. In fact, the EJC more than doubled the title access at Ohio State.

At all campuses, including Ohio State, (Chart 9) the majority of titles with AD's are not held in print. This new access represented over two-thirds of the titles downloaded for all but the two

available in 2000, each Ohio university owned in print 659 titles, based on the year prior to the start of each electronic license. In the twelve months from January 2000 – December 2000, patrons downloaded articles from an average 2,681

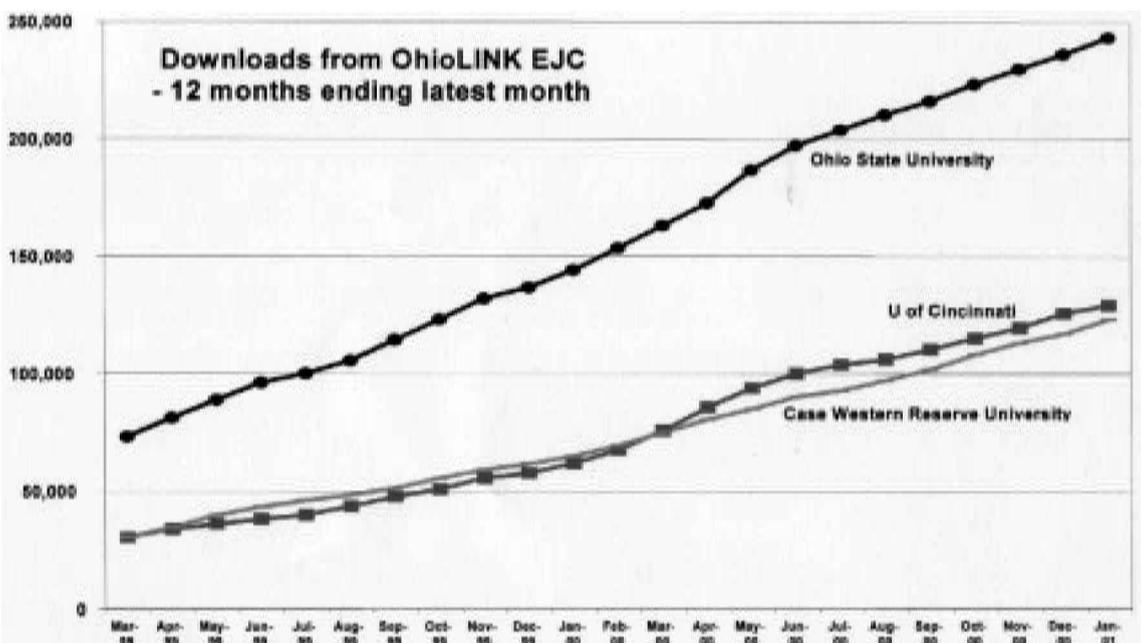


Chart 12

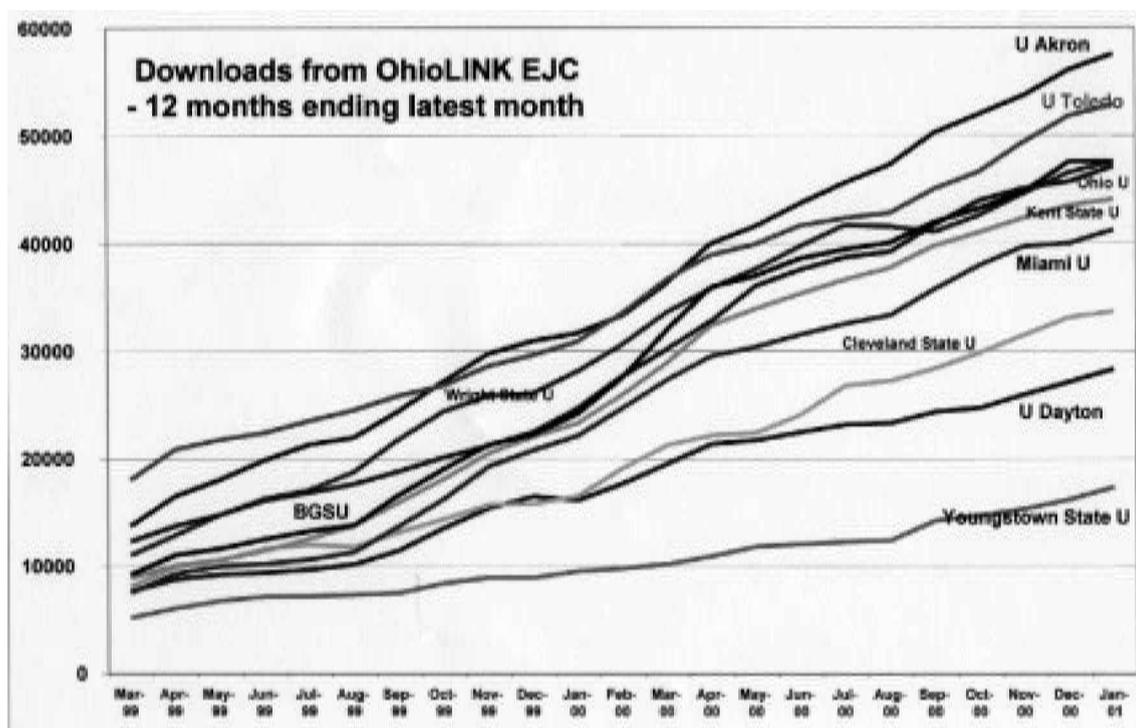


Chart 13

largest libraries in the state, both of which are members of the Association of Research Libraries – Ohio State University (OSU) and the University of Cincinnati (UC). The expansion in the number of titles used over those that were traditionally available in print is highly significant.

Chart 10 lists the total AD at each school and the average number of articles downloaded per title used. For example, the University of Cincinnati (UC) used 2,888 titles in the EJC (Chart 8) for an annual total of 114,450 AD. Dividing 114,450 by 2,888 results in an average AD per title used of 39.6. The patrons at OSU clearly led the way with a 75.7 average. The averages are significant for all schools. Review of these statistics should cause one to speculate on the total cost if these articles had been ordered and received via traditional ILL or a commercial document delivery service. The obvious advantage of the EJC approach is that neither ILL nor document delivery are capable of providing the patron with immediate desktop access to the full-text of the articles.

This high return on investment is also apparent within specialized academic communities.

Although separate data has not been compiled here for the five medical schools in Ohio that are part of larger universities (such as at Ohio State University or at Wright State University), the benefit to university medical libraries of the EJC can be seen in the data for the two institutions that are solely medical schools: Northeastern Ohio University College of Medicine (NEUOCOM) and the Medical College of Ohio (MCO). NEUOCOM owns in print only 224 titles while using 1098 in the EJC for a total of 11,009 AD. MCO owns only 156 titles in print while using 1538 titles for a total of 24,523 AD. Both are very significant expansions illustrating the major benefit to all seven Ohio medical schools.

At all campuses except Ohio State, Case

	TITLES USED	ARTICLES DOWNLOADED		TITLES USED	ARTICLES DOWNLOADED
No EJC titles in print			Fewer than 5 EJC titles in print		
Reckling CC	128	285	Salmon CC	136	230
Jefferson CC	74	119	Cincinnati State TACC	111	218
Southern State CC	602	2736	Clark State CC	329	768
Terra CC	68	128	Edison State CC	132	238
Washington State CC	274	742	Lakeland CC	714	3339
Fewer than 10 EJC titles in print			Northwest State CC	888	1761
Columbus State CC	1276	8415	Sinclair CC	883	3218
Owens CC	577	2299	Fewer than 20 EJC titles in print		
			Cuyahoga CC	744	3344
			Lorain CC	387	1816
			St. Grande CC	175	800

Table 3 – Two-Year College Print and EJC Use  
January 2000 – December 2000

	TITLES USED	ARTICLES DOWNLOADED		TITLES USED	ARTICLES DOWNLOADED
Fewer than 25 EJC titles in print			Fewer than 50 EJC titles in print		
Ashland U	1368	8627	Capital U	900	6300
Baldwin-Wallace C	1213	7124	Denison U	1882	18729
Bluffton C	988	2319	U Findlay	859	3821
Cedarville U	1435	9832	Franciscan U	839	2267
Central State U	143	331	Hiram C	1171	8886
Heidelberg C	821	2894	Malone C	458	1963
C of Mt St Joseph	319	991	Xavier U	1192	9168
Mt Union C	1098	5821	Fewer than 100 EJC titles in print		
Mt Vernon Nazarene C	798	3673	John Carroll U	1484	9443
Muskingum C	892	3653	Ohio Northern U	1846	14198
Notre Dame of Ohio	218	827	Ohio Wesleyan U	768	3120
Ohio Dominican U	493	1858	C of Weeber	1198	7271
Oscarheim C	818	1900	Fewer than 150 EJC titles in print		
Shawnee State U	897	3882	Kenyon C	1322	12188
Tiffin U	381	1121	Fewer than 250 EJC titles in print		
Ursuline C	389	844	U Berlin C	1182	7288
Wilberforce U	180	381			
Wilmington C	484	1161			
Wittenberg U	531	3051			

Table 4 – Small University and College EJC Use January 2000 –December 2000

Western Reserve University, and the University of Cincinnati the percentage of articles from titles not held in print at the time license began represents a majority, with the average being 52% (Chart 11). A total of 476,370 articles were delivered to university patrons from the EJC that were not otherwise available on campus. It is obvious to conclude that the availability of all of the journal titles in electronic form creates vast new opportunities for access that patrons welcome.

The use of the EJC also as a convenience tool for titles held in print is obviously significant at 438,150. On a per title basis patrons use in heavier amounts the journals that they have had on campus in print. On each campus the AD per TD for titles held in print exceeds that of the AD per TD for titles not held in print. Ohio libraries in general were buying in print titles needed by their patrons, and electronic access creates an even greater tendency for those titles to be used. Over time this is not just a convenience, but a necessity as libraries begin to cancel print copies.

As the EJC has expanded publishers, and as patrons have adopted use of the EJC, the growth in EJC usage has been consistent across all universities. Charts 12 and 13 illustrate that over the past two years the growth in annual AD has been universal at all universities.

**Effect on Smaller Institutions - Tables 3 and 4**

The EJC has had similar beneficial effects at smaller institutions in Ohio, such as small public and private four-year liberal arts colleges and

universities and public two-year community and technical colleges. During the past year, 17 two-year colleges and 32 small four-year universities and colleges had EJC access.

In these smaller institutions the ownership in print of any of the EJC publishers is quite limited. Clearly, their use of the EJC is not as extensive use as in the universities, but on a relative scale to previous access in print it

represents a dramatic increase by both two-year and small colleges in use of this material. For small colleges 90-95% of AD were from new EJC accessible titles. Similarly for two-year colleges, 95-100% of AD were from new EJC accessible titles. The benefits to both groups are more than marginal and allow both to upgrade their curriculum and provide faculty far greater access to the latest scholarly publications.

**Conclusions**

The initial results of the EJC reported two years ago with just two major publishers indicated that there is a new horizon in information use that colleges and universities acting separately have not experienced in the print-based world. After almost three years of operation and the expansion to fifteen publishers and beyond we see no slow down or ceiling to this phenomenon of expansion in information use. Our continuing experience validates the underlying assumption that motivated the OhioLINK community to develop the EJC system.

The results strongly indicate that libraries and their consortia are in a rapidly evolving arena in which we know that levels of information use will rise through desktop electronic access, but it is not yet possible to predict how high that rise may be. More experience is necessary before we can say what that new and higher equilibrium will look like or at what level it will stabilize. At this early stage patrons have probably not yet fully absorbed what the EJC can do for them, but OhioLINK has already begun to ask the next level of questions. For example, what changes will take place in user behavior as the EJC continues to become a broader spectrum of journal publishers

and as we find new and better ways to integrate the EJC with our other information resources?

Just as important is the evolution that is required in our economic relationship with publishers to allow continued and sustained access to more information. Our critics miss this point. It is clear that what we have undertaken will be an evolutionary process, in terms of what we license and at what cost. We have undertaken a necessary step to address our immediate and growing shortage of needed information on our campuses while at the same time creating a knowledge base of access and use information to guide us in determining the best long-term equilibrium of economics and content. Acting collectively, with this knowledge, we are in a stronger long-term position to negotiate a healthier long-term solution

The OhioLINK community's approach has been very pragmatic. We have a certain amount of funds currently in the system for journal subscriptions, divided among the publisher community in a certain way. Whether relatively high or low priced we seek to make each publisher relationship more economically sustainable with higher levels of journal access and use. In the short term we cannot simultaneously afford for low-priced, under-capitalized publishers to use a statewide electronic license to make major pricing corrections even as we seek to bring the cost of high-priced publishers under control. With all publishers we are seeking a new economic and expanded access equilibrium. Our users have the need for a great deal of journal material from both low and high priced publishers and we must take a measured, balanced approach to changes in the economic equations with our publishers if we are to provide access across the spectrum of journals in the market.

As a single, state-based library consortium we don't feel empowered to immediately and dramatically change the market's economic fundamentals that many feel are out of balance. But we do have a need to address our information shortages in the here and now. The few large libraries who are able to buy vast numbers of journals and books may have the luxury of opting for long-term solutions even as they continue to buy from the very publishers we all take to task. In the case of the OhioLINK

community we do not have such luxury and must work harder to deal with the tyranny of the urgent and build a bridge to a long-term future.

Whether gradual or sudden, in the end, there must be changes in the market fundamentals. The initial results of the EJC demonstrate that in the long term we do not necessarily need all the titles of Elsevier Science, Academic Press, Wiley, Kluwer, Springer-Verlag, or the other publishers with which we will have licenses. However, the results thus far do indicate that librarians should no longer presume to know exactly what patrons will need in the electronic world based solely upon past patron behaviors in the controlled print environment. We need to avoid electronic solutions that are based on the old rules of limited information use and single site economics. Rather, we should seek solutions that maximize our ability to let information use expand and seek new levels. Until we experience such an environment we can't accurately answer the question of what we need or don't need. Reliance upon old rule solutions ultimately deprives us and our patrons of the opportunity to enjoy a higher level of information access. To move forward, we must assume there is an evolution of information use at work and libraries and their consortia must be enablers rather than gatekeepers.

Our approach certainly has risks and will be questioned as a valid means to advance our long-term interests. The critics that would seem to question our approach make assumptions we are not willing to make. These assumptions seem based on the old rules of pre-selection, rationing, and single-site economics. Our experience indicates it is impossible to accurately pre-select even for the largest libraries. Our users are selecting a much wider array of materials than can be anticipated much less pre-defined. Our experience is that pre-selection under current economic constraints prevent access to materials that will be used if made available. Critics fail to appreciate the evolutionary and uncertain nature of what we are doing. At the very least, what we are doing by opening up access to the broadest array of journal titles is to vastly improve our measure of what will be used and not used, what we really need and don't need. No fundamental changes in the scholarly journal market are possible

without this as a baseline. In the end we too will make selections, but based on a new definition of information use and need.

In putting in place new rule-based solutions we also must recognize that if we don't succeed there may be few options before us other than more information rationing or increased out-of-pocket costs to our patrons. This will hold equally true be it Elsevier Science or SPARC sponsored publishers. Perhaps individual libraries will mask some of the pain through electronic-based access or lower prices on some journals, but acting as individual libraries it will be rationing nonetheless. The new rules allow us to fashion a better value equation by providing more use for the same number of dollars spent. In the end it is

this equation that will provide a solid basis on which to build long-term support for library and consortium program budgets, and to enable information access to blossom.

To further expand information use, the OhioLINK community plans to continue to seek licenses to the full title array of a journal publisher and to create as friendly, fluid, and flexible system of access and retrieval as is possible. As we expand and experience this new world we will increasingly understand what the new horizons and equilibriums of information use will be. So equipped, we will be best able to fashion a sustainable economic model of information purchase that maximizes information use by the patron populations that we serve.

