Electronic Journals in
Swedish Academic Institutions
A usage study of Project MUSE and IDEAL full-text databases

Kari Stange
Acknowledgements

I would like to take this opportunity to thank some of those who have provided data, help and support during the course of this study.

All the academic institutions in the Swedish Consortium allowed me to investigate their usage statistics from Project MUSE and IDEAL. Usage statistics are considered confidential information, and without this willingness to share data my study could not have been conducted.

The staff at BIBSAM at the Royal Library in Stockholm have given me an unique opportunity to learn about electronic journals and national licensing. Several of the ideas for this study were born during my 5-week trainee period at BIBSAM in the fall of 1998. Discussions at meetings and seminars in which they invited me to participate, have also been important for this study.

I would also like to thank the staff at the LIBRIS Department at the Royal Library in Stockholm, both for providing a stimulating working environment during the winter of 1999, and for data on interlibrary loan.

My advisor Erik Peurell did an heroic effort in guiding me across the gap between the natural sciences and the humanities. I have appreciated his positive attitude and interest in my work.

Finally, I would like to thank Craig Johnson, Catharina Rehn, and the seminar group at Institutionen för kultur- & biblioteksstudier, Uppsala universitet for their comments on earlier drafts of this document.
# Table of Contents

**ACKNOWLEDGEMENTS** ................................................................................................................ II

**LIST OF ACRONYMS** .................................................................................................................. V

**LIST OF TABLES** ........................................................................................................................ VI

**LIST OF FIGURES** ........................................................................................................................ VI

**INTRODUCTION** ........................................................................................................................... 1

**SCOPE** ........................................................................................................................................... 3

**MATERIALS AND METHODS** ........................................................................................................ 4

  * Literature survey .......................................................................................................................... 4
  * Data collection ............................................................................................................................. 5

**DEFINITIONS AND TERMS** .......................................................................................................... 8

  * Electronic journals, electronic serials, and scholarly electronic journals ........................................ 8
  * Information providers, publishers, aggregators, and agents ............................................................ 9
  * Library consortia .......................................................................................................................... 10

**BACKGROUND ISSUES** ............................................................................................................. 11

**THE SERIALS CRISIS** .................................................................................................................... 11

  * The rising cost of scholarly journals ............................................................................................ 12
  * Publishers of scholarly journals .................................................................................................. 12
  * The scholarly journal article and the academic reward system ..................................................... 13
  * Access, ownership, and document delivery .................................................................................. 14

**ELECTRONIC JOURNALS ENTER THE STAGE** ......................................................................... 14

  * Library consortia .......................................................................................................................... 15
  * Licensing of electronic journals and full-text databases ................................................................ 16

**EVALUATION OF ELECTRONIC JOURNALS** ............................................................................. 18

**GENERAL EVALUATION METHODS** ............................................................................................ 18

  * List checking ............................................................................................................................... 19
  * Citation analysis ......................................................................................................................... 20
  * Circulation and use ..................................................................................................................... 22
  * Interlibrary loan analysis .......................................................................................................... 22
  * Comparative size and expenditure statistics ............................................................................. 23

**EVALUATION TOOLS FOR ELECTRONIC PRODUCTS** ................................................................. 23

  * Guidelines on usage statistics .................................................................................................. 25

**PROJECT MUSE: DESCRIPTION AND USAGE STUDY** ................................................................. 26

**DESCRIPTION OF PROJECT MUSE** ............................................................................................ 26
RESULTS OF THE PROJECT MUSE USAGE STUDY .......................................................................................................................... 29
Usage within the whole Consortium ....................................................................................................................................................... 29
Consortial usage and print subscriptions ............................................................................................................................................. 31
Usage within individual institutions ......................................................................................................................................................... 34
Institutional usage and print subscriptions ........................................................................................................................................ 36
Interlibrary loan of Project MUSE journal articles ......................................................................................................................................................... 37

IDEAL: DESCRIPTION AND USAGE STUDY ................................................................................................................................. 39
DESCRIPTION OF IDEAL .................................................................................................................................................................................. 39
IDEAL journals ................................................................................................................................................................................................. 40
License terms..................................................................................................................................................................................................... 40
Usage statistics ................................................................................................................................................................................................... 42
RESULTS OF THE IDEAL USAGE STUDY ..................................................................................................................................................... 43
Usage within the whole Consortium ......................................................................................................................................................... 43
Usage within individual institutions ......................................................................................................................................................... 43
Institutional usage and print subscriptions ............................................................................................................................................. 46
Interlibrary loan of IDEAL journal articles ............................................................................................................................................. 47

DISCUSSION ................................................................................................................................................................................................. 51
OVERALL USAGE OF PROJECT MUSE AND IDEAL DATABASES ........................................................................................................ 51
ANALYSIS OF USER BEHAVIOR ......................................................................................................................................................... 52
EVALUATION BASED ON USAGE STATISTICS ........................................................................................................................................... 53
Project MUSE ............................................................................................................................................................................................ 54
IDEAL ........................................................................................................................................................................................................ 55
EVALUATION BASED ON INTERLIBRARY LOAN ANALYSIS ............................................................................................................... 56
Project MUSE ............................................................................................................................................................................................ 56
IDEAL ........................................................................................................................................................................................................ 57
Interlibrary loan requested from libraries with online access to journals .................................................................................................. 57
CURRENT INITIATIVES AND ISSUES FOR FURTHER STUDIES ...................................................................................................... 58
SUMMARY ................................................................................................................................................................................................. 60
LITERATURE CITED ....................................................................................................................................................................................... 62
UNPUBLISHED MATERIAL .................................................................................................................................................................. 62
PUBLISHED MATERIAL, ONLINE ....................................................................................................................................................... 63
PUBLISHED MATERIAL, PRINT .......................................................................................................................................................... 66
APPENDIX 1 ............................................................................................................................................................................................ 68
## List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &amp; I</td>
<td>Abstract and Indexing services</td>
</tr>
<tr>
<td>AP</td>
<td>Academic Press</td>
</tr>
<tr>
<td>APPEAL</td>
<td>Academic Press Print and Electronic Access License</td>
</tr>
<tr>
<td>ARL</td>
<td>Association of Research Libraries</td>
</tr>
<tr>
<td>BIBSAM</td>
<td>The Royal Library’s Department for National Co-ordination and Development</td>
</tr>
<tr>
<td>BIBSYS</td>
<td>Norwegian national union catalog</td>
</tr>
<tr>
<td>Café Jus</td>
<td>Commercial and Free Electronic Journal User Study</td>
</tr>
<tr>
<td>CAUL</td>
<td>Council of Australian University Librarians</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>Compact Disk-Read Only Memory</td>
</tr>
<tr>
<td>CONTU</td>
<td>National Commission on New Technological Uses of Copyright Works</td>
</tr>
<tr>
<td>HTML</td>
<td>Hypertext Markup Language</td>
</tr>
<tr>
<td>ICOLC</td>
<td>International Coalition of Library Consortia</td>
</tr>
<tr>
<td>IDEAL</td>
<td>International Digital Electronic Access Library</td>
</tr>
<tr>
<td>ILL</td>
<td>Interlibrary loan</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>ISI</td>
<td>Institute for Scientific Information</td>
</tr>
<tr>
<td>ISSN</td>
<td>International Standard Serial Number</td>
</tr>
<tr>
<td>JCR</td>
<td>Journal Citation Reports</td>
</tr>
<tr>
<td>JHUP</td>
<td>Johns Hopkins University Press</td>
</tr>
<tr>
<td>LIBRIS</td>
<td>Swedish national union catalog</td>
</tr>
<tr>
<td>LISA</td>
<td>Library and Information Science Abstracts</td>
</tr>
<tr>
<td>NERL</td>
<td>NorthEast Research Library Consortium</td>
</tr>
<tr>
<td>OPAC</td>
<td>Online Public Access Catalog</td>
</tr>
<tr>
<td>PDF</td>
<td>(Adobe Acrobat) Portable Document Format</td>
</tr>
<tr>
<td>RBT</td>
<td>Riksbibliotekstenesten</td>
</tr>
<tr>
<td>SCB</td>
<td>Statistiska Centralbyrån</td>
</tr>
<tr>
<td>STM</td>
<td>Science, Technology and Medicine</td>
</tr>
<tr>
<td>TOC</td>
<td>Table of Contents</td>
</tr>
<tr>
<td>URL</td>
<td>Uniform Resource Locator</td>
</tr>
</tbody>
</table>
List of Tables

Table 1  Articles accessed from all Project MUSE journal titles by academic institutions in the Swedish Consortium, 4th quarter 1998
Table 2a Usage of Project MUSE e-journals available in print subscription within the Consortium
Table 2b Usage of Project MUSE e-journals not in subscription within the Consortium, but in subscription in other Swedish libraries registered in LIBRIS
Table 2c Usage of Project MUSE e-journals not in subscription in Swedish libraries registered in LIBRIS
Table 3 Project MUSE titles and articles accessed by individual institutions, 4th quarter 1998
Table 4 Interlibrary loan of Project MUSE articles, 4th quarter 1997 and 1998
Table 5 IDEAL usage at academic institutions in the Swedish Consortium, 4th quarter 1998
Table 6 Interlibrary loan of IDEAL titles in Sweden, 4th quarter 1997 and 1998
Table 7 Requests for interlibrary loan of IDEAL titles by institutions in the Swedish Consortium, 4th quarter 1997 and 1998

List of Figures

Figure 1 Serials and monograph costs in ARL libraries 1986–1997
Figure 2 Number of titles of electronic magazines and journals registered in the ARL directory 1991–1996 and NewJour 1996–1998
Figure 3 IDEAL usage in the Swedish Consortium June–December 1998
Figure 4 Usage of IDEAL by individual academic institutions in the Swedish Consortium in relation to the number of print subscriptions held
INTRODUCTION

Collaboration and the sharing of resources have always been essential components of library work. Daily, a substantial number of requests for books and articles are exchanged between libraries participating in well established networks of interlibrary lending. Through the sharing of resources, each library gains access to a larger, combined pool of material. With the development of new electronic tools and products, new structures of interlibrary cooperation have evolved. Examples of such tools which have significantly changed the flow of information in and between libraries in Sweden are online public access catalogs (OPACs) and the development of the union catalog LIBRIS. Examples of new products which have inspired new ways of cooperation are the electronic journals and the full-text databases in which these are offered to library consortia through licenses.

The Swedish Consortium of academic, research, and special institutions and their associated libraries (the Consortium in this report) was established in 1997 by BIBSAM: The Royal Library’s Department for National Co-ordination and Development. Member institutions are diverse, from large universities with almost 25,000 students to small public authorities with 30 staff. The institutions are divided into the following categories: 1) Universities, 2) Special Institutes, 3) University Colleges, 4) Other Colleges, and 5) Research Libraries. This consortium is a structure grown out of the process related to the above mentioned tools and products; a new constellation, a new way of collaborating and resource sharing as a response to a changing information landscape.

One reason for the formation of the Consortium was the need to ensure a certain level of access to information resources for students and faculty at academic institutions all over Sweden. A study conducted by BIBSAM in 1994–1995 showed that there were significant differences between the smaller university colleges and the larger universities in terms of resources available to the students (Hagerlid 1996; Harnesk 1996; Lettenström 1996). The possibilities for distance learners – a rapidly growing group of students – to access information were limited. Another driving force behind establishing the Consortium was the manifestation of the so-called serials crisis in Swedish academic and research libraries, a term which refers to problems caused by escalating costs of subscriptions for scholarly journals over the last several years. This increase in expenses has not been paralleled by a similar increase in library budgets. Substantial cancellations of journal subscriptions and/or undesired redirection of resources have followed. When scholarly journals started to appear online many anticipated that this new
distribution format would make journal subscriptions less expensive and offer a solution to the serials crisis.

Currently, most scholarly electronic journals are available through so-called *package deals*. This means that a large number of journal titles are included in full-text databases. Access to the databases is obtained via licenses, and favorable prices are offered if many institutions act as one customer through a consortium. Many different models for organization and price exist for these licenses. One common model for package deal arrangements is that all members in the consortium get access to all titles contained in the database, regardless of how many of these titles that are held in print in each subscribing institution. Among the positive effects of this arrangement is of course the increase in number of titles that becomes available to users at these institutions. This effect is particularly strong in the smaller member institutions of a consortium which are holding few print subscriptions. However, a negative effect of these package deal arrangements is that the subscribing institutions end up paying for many titles that are of little – or no – interest to them.

Many information providers are trying to sell their electronic products and establish their niche within a rapidly changing information landscape. Librarians and consortium coordinators are faced with many challenges in the process of evaluation and selection of full-text databases and other electronic products. What kind of evaluation tools can be applied to identify the most appropriate products – for individual institutions and for consortia? Can usage statistics reveal information about the relevance of full-text databases? How many of the electronic journals, which are made available through package deals, are used at the subscribing institutions? Can the need for the titles included in these package deals be identified though interlibrary loan analysis? The aim of this thesis is to elucidate these questions.

In this study, the contents and usage of two full-text databases are investigated: *Project MUSE* from Johns Hopkins University Press (JHUP) and *IDEAL* from Academic Press (AP). These databases became available to members in the Swedish Consortium in the summer of 1998. They contributed 46 and 175 titles, respectively, to the rapidly growing number of electronic journals which can be accessed through national licenses in Sweden. These databases were selected because:

- they cover different areas of interest – primarily humanities and social sciences (*Project MUSE*) and natural sciences (*IDEAL*) – and are therefore relevant to different user groups
- the usage statistics produced by *Project MUSE* and *IDEAL* differ in format and
content, and the difference in usefulness of usage statistics as an evaluation tool can be illustrated

- the relatively small number of journals included in these databases permitted analysis of total use and interlibrary loan analysis of all titles

Institutions in the member categories Universities, Special Institutes and University Colleges in the Swedish Consortium which were subscribers to IDEAL and/or Project MUSE databases were selected for analysis of e-journal usage. The terms academic institutions and academic libraries are used for these members in this report.

The overall objective of this study is to apply usage statistics data and interlibrary loan analysis as tools to evaluate Project MUSE and IDEAL databases in terms of the relevance of their contents to academic institutions in the Swedish Consortium.

Scope

This thesis is divided into three parts; background issues, evaluation tools, and usage study.

In the first part, topics related to electronic journals and licensing in general are introduced. The serials crisis, a complex issue which has been one of the main factors motivating the aggregation of institutions and libraries into consortia, is discussed in an international perspective. A synopsis of the history of electronic journals is included to highlight the rapid changes within this field over the last ten years. Licensing of electronic resources has emerged as a hot topic for both librarians and information providers. Some key factors related to licensing of electronic journals are introduced, along with the development of library consortia as a response to these licensing arrangements. These chapters are based mainly on a literature survey, and aim to provide a background for the study that follows.

In the next part, evaluation tools for journals and full-text databases are introduced. These are methods and tools used to assess the quality and relevance of the products (electronic journals and full-text databases) to individual institutions and to library consortia. Some of these tools are traditionally used within the field of library collection management for evaluation of printed journals. Possible applications of these methods in the electronic environment are discussed, along with evaluation criteria specifically addressing electronic products.

In the third part, a usage study of the full-text databases Project MUSE and IDEAL is presented. Some of the tools described in part two are applied in order to evaluate the journals
and the relevance of these databases to subscribing institutions in the Swedish Consortium. The objectives of the usage study were:

• to investigate to what extent the electronic journals in *Project MUSE* and *IDEAL* are used at academic institutions within the Swedish Consortium

• to analyze usage based on:
  ◊ the presence of print subscriptions within the member institutions
  ◊ data on interlibrary loan of *Project MUSE* and *IDEAL* journal titles prior to and after the national license agreement
  ◊ additional parameters available from the database providers, such as the number of issues online, the price for single titles, and abstract and indexing (A & I) services registering each title

In addition to the parameters mentioned above, several other factors affect usage and are also reflected in the usage statistics data. One such factor, which is under control of the database providers, is user friendliness and other aspects related to the presentation and functionality of the databases. Presentation, access, and promotion of use locally are other important factors for which the individual institutions are responsible. Inquiries into issues concerning the promotion of use of full-text databases in institutions affiliated with the Swedish Consortium would be a valuable complement to the data material presented here. However, these issues are beyond the scope of this study.

**Materials and methods**

*Literature survey*

Electronic journals in full-text databases have existed only a few years. As a natural consequence, most of the relevant literature on this topic is limited to recently published material. Although they are distributed in a new format, however, electronic journals fit into well established areas of library science such as collection development and collection management. Useful background information for this study was found in *Managing Serials* (Tuttle 1996) and *The International Serials Industry* (Woodward & Pilling 1993).

A stepping stone into the e-journal literature was the bibliographic database *Library and Information Science Abstracts* (LISA). A bibliography by Thomas Nisonger (1996, p. 237–239), specifically addressing issues related to e-journals and libraries, was also informative.
Another valuable source was a special issue of *The Serials Librarian*, in which authors representing both librarians and e-journal providers contributed with views on issues such as preservation (Day 1998), pricing (Robnett 1998), and copyright (Linke 1998).

When approaching the areas of licensing and the development of library consortia, the Internet proved to be the most valuable source. Because of the rapidly changing situation within these fields, information tend to be outdated by the time articles are published in printed journals. Hypertext links from web sites of organizations such as The Association of Research Libraries (ARL) and The International Coalition of Library Consortia (ICOLC) led to documents of interest to this study. In addition, individuals with long working experience within the fields of e-journals and licensing, and who also have the philosophy that the sharing of ideas and information is a good thing, publish texts on their web site (e.g. Okerson 1996a, 1996b, 1997). These texts are often synopses of oral presentations which would not necessarily find their way into proceedings or other printed publications.

Although a majority of the relevant literature originates in North America or the United Kingdom, a number of reports on issues related to journals in Swedish academic libraries have formed the basis out of which the focus of this study has evolved. These include studies by Harnesk (1996), Ericson-Roos (1997), Gustavsson & Svantesson (1997), Persson & Nilsson (1997, online), and Karlsson & Kjellberg (1998).

**Data collection**

Usage statistics for the full-text databases *Project MUSE* and *IDEAL* for the Swedish Consortium were produced by the database providers. Usage statistics are considered confidential information. For the purpose of this study, a questionnaire (Appendix 1, in Norwegian) was distributed to institutions in the categories Universities, Special Institutes and University Colleges which were subscribing to the *IDEAL* and/or *Project MUSE* databases through the consortial license (see p. 1 for member categories). The participants were asked to agree or disagree to 1) whether usage statistics from the providers Academic Press, Johns Hopkins University Press, and EBSCOHost for the institution in question could be permitted for this study, and 2) whether the identity of the institution could be included in the report. Out of a total of 29 questionnaires distributed, 17 were handed out to delegates from the institutions present at an informational meeting arranged by BIBSAM 5 February 1999. The questionnaire was sent by mail to the 12 remaining institutions which were not represented at the meeting. All 29 institutions permitted use of the usage statistics from the databases for this
study. One member wanted some clarifications concerning the privacy and confidentiality of individual users prior to releasing their usage statistics. Three members had reservations about including the identity of the institution in the report. One of these later withdrew the reservation, leaving two anonymous institutions in the data material. In addition to Academic Press (IDEAL) and Johns Hopkins University Press (Project MUSE), the usage statistics from EBSCOHost (Academic Search FullTEXT Elite) were addressed in the questionnaire. However, a usage study of this large database could not be included within the time frame of this project.

Statistics from Project MUSE were available as a summary report of use for all the subscribing institutions in the Consortium during the 4th quarter of 1998. Data were transferred from Project MUSE staff embedded as plain text in a large e-mail, and made available to the author via coordinators at BIBSAM. Statistics from IDEAL were accessed via a web site maintained by Academic Press. At this site, subscribing members can access summary reports for all institutions in the Swedish Consortium. Access to the site is password protected. Login information was provided by IDEAL staff at an informational meeting arranged by BIBSAM 14 September 1998.

One of the parameters used in this study to evaluate the relevance of journals included in Project MUSE and IDEAL databases was the presence of print subscriptions at the institutions within the Consortium. Subscription information for titles in Project MUSE was manually collected from the LIBRIS union catalog. Search queries were run with ISSN for printed versions of each Project MUSE journal title, and library codes for institutions within the Consortium were registered. Some of the large institutions in the Consortium have more than 10 different library codes in the LIBRIS union catalog, and some subscriptions might have been missed in the process of collecting these data. Subscription information for IDEAL titles was included in the supplementary documentation for the contract between Academic Press and the Swedish Consortium (BIBSAM 1998a, Schedule 1B). The total number of print subscriptions in the Consortium, as well as the number of subscriptions at individual institutions, were used by Academic Press to calculate the price for access to IDEAL for individual members. Two groups of IDEAL titles are therefore referred to in this report: 1) titles in subscription in the Consortium, and 2) titles not in subscription in the Consortium. Searches in the LIBRIS union catalog were performed to verify this information when inconsistencies were discovered (e.g. titles listed as “not in subscription” were in fact in subscription within the Consortium). When reference is made to the number of IDEAL
subscriptions held by the Consortium and by individual institutions in this study, uncorrected numbers — as reported by AP — are used.

Statistics on interlibrary loan of journal articles from titles included in the Project MUSE and IDEAL databases were extracted from the LIBRIS database. This material was kindly provided by staff at the LIBRIS Department at the Royal Library in Stockholm. Results were made available to the author as Excel files. While journals in Project MUSE have different ISSN for printed and electronic versions, both formats of the IDEAL journals have the same ISSN. This is reflected in slightly different search parameters for the two databases. The following parameters were specified in the search query:

- ISSN for all Project MUSE journals, printed versions
- ISSN for all Project MUSE journals, electronic versions
- ISSN for IDEAL titles, in subscription in member institutions in the Swedish Consortium
- ISSN for IDEAL titles, not in subscription in member institutions in the Swedish Consortium
- time period before the national licenses: October 1 – December 31, 1997
- time period after the national licenses: October 1 – December 31, 1998
- library code for the requesting library (in)
- library code for the lending library (out)

To be able to analyze what proportion of the interlibrary loan requests that came from libraries associated with the Consortium, the data was sorted based on the library codes for the requesting library. The requests were then manually labeled as in Consortium or not in Consortium, depending on the whether the requesting institution was subscribing to the database in question via the national license. The reservation mentioned above concerning the high number of different library codes used by some institutions applies also in this context. Some of the 2 400 interlibrary loan requests analyzed might have been mislabeled and the data should be considered as approximate numbers.

Definitions and terms

*Electronic journals, electronic serials, and scholarly electronic journals*

What is an electronic journal? Both this term and the related electronic serial have become integrated in the vocabulary of library science literature. The terms are often used
interchangeably and without further definition. There is no standard accepted definition of an
electronic journal, according to Thomas Nisonger (1996, p. 233). He lists different types of
serials which may be covered by the term electronic journals when available in electronic form:
“1) scholarly journals, 2) popular magazines, 3) newsletters, 4) newspapers, 5) self-published
zines”. He also assembled the following list of what electronic journals may be:

1) electronic only, 2) electronic only version of a former print journal, or 3) simultaneously
electronic and print. The term electronic journal has been applied to journals that are available
through: 1) CD-ROM […], 2) online […], or 3) networks […]. Electronic journals can be: 1)
free, 2) paid subscription, 3) pay per use, or 4) licensed for access rights. They can be: 1) stored
on a local library or campus computer, or 2) accessed from a remote site (Nisonger 1996, p. 233).

Karlsson and Kjellberg found examples of both general and specific definitions of e-journals in
their literature survey:

[… ] any serial produced, published, and distributed via an electronic medium. (Newton-Smith;
quoted in Karlsson & Kjellberg 1998, p. 6)

[… ] an electronic journal is one created for the electronic medium and available only in this

[… ] strictly, a journal in which all aspects of preparation, refereeing, assembly and distribution
are carried out electronically. (Harrod; quoted in Karlsson & Kjellberg 1998, p.6)

A Swedish suggestion: “Elektronisk tidskrift är definitionsmässigt en tidskrift som inte
prasslar” (Malmquist 1998, p. 22).

As illustrated in the examples above, the term serial is often used when describing and
defining electronic journals. A definition of a serial, including non-print forms, is found in the

A publication, in printed form or not, issued in successive parts usually having numerical or
chronological designations and intended to be continued indefinitely. This definition does not
include works produced in parts for a period predetermined as finite.

Although a formal and generally accepted definition is lacking, it can be concluded that the
term electronic journals is most often used for serials, as defined in the ISDS manual, when
available in electronic format.

The term scholarly journals refers to publications which are used in scholarly
communication and which meet certain criteria of quality, among which peer-review is of
uttermost importance. Pamela Pavliscak used the following definition in her study of scholarly
journals in an electronic environment:

[… ] scholarly electronic journals are those which function primarily as a publication vehicle for
original research, publish full-text articles or preprints, in which submissions are reviewed by two

1 Malmquist’s quote in translation: “Electronic journals are defined as journals that doesn't rustle”.

8
or more reviewers, and which use networks as a distribution channel (Pavliscak 1996, online).

One of the differences between printed and electronic versions of journals which becomes important both in definitions and in discussions of licenses is that electronic journals are not restricted to the formats of paper copies. While printed journals are published as distinct issues, and thus can be identified by volume, issue and page numbers, electronic journals do not necessarily conform to this format. In a full-text database which contains a number of electronic journal titles, each of the articles is a separate entity, independent of any issues or volumes of the serial in question.

In this study, the synonyms electronic journals and e-journals will be used. In this context, both terms refer to the contents of full-text databases such as those made available to members in the Swedish Consortium through national licenses. All titles in Project MUSE and IDEAL databases are scholarly journals in full-text. However, both non-refereed journals and journal titles for which only table of contents (TOC) and abstracts are available to subscribers are included in other databases available to members in the Swedish Consortium through national licenses.

Information providers, publishers, aggregators, and agents

At the other side of the negotiating table when individual institutions or consortia purchase access to commercially available electronic journals are those who have the right to license these resources. Many of the large scientific publishers which were already supplying libraries with their printed journals have now major roles as providers of e-journals. Academic Press and Elsevier are examples of such publishers which have made their collections of scholarly journals available electronically via the databases IDEAL and ScienceDirect, respectively. As a contrast to these large for-profit publishers stands grant-funded Project MUSE from Johns Hopkins University Press. Subscription agents were, and still are, common in the print environment. Similar services have emerged in the electronic environment. Aggregators, information agents, or subscription agencies are labels put on companies which, from various publishers, purchase the right to license e-journals on to third parties, such as library consortia. EBSCO and SwetsNet are examples of providers in this category.

Information providers, or providers, is the collective term used encompassing all these actors in this report.
Library consortia

The definition of the term *consortium* may explain why establishing consortia has become a popular activity among libraries in times of financial strain: “[…] an agreement, combination, or group (as of companies) formed to undertake an enterprise beyond the resources of any one member” (*Britannica Online*, 1998). To the e-journal providers, a consortium often means one negotiating partner, one contract, and one billing point (Okerson 1998a, online). In this study, any aggregation of institutions which jointly license electronic journals is referred to as a consortium. In this report, *the Consortium* refers to the Swedish Consortium coordinated by BIBSAM at the National Library of Sweden.
BACKGROUND ISSUES

The serials crisis

One of the factors motivating the shift from printed to electronic journals in academic libraries was the manifestation of the so-called serials crisis. The terms serials pricing crisis and journal crisis are also used in the literature for the same phenomenon (e.g. Swindler 1996a, p.21; Tuttle 1996, p.131; Odlyzko 1999, online). Most of the literature published around this topic focus on the situation for American research libraries. Two reasons for this are: 1) the unique statistical material assembled by the Association of Research Libraries (ARL 1998a, online), from which reliable data on time trends for serial subscriptions and prices can be extracted, and 2) the fluctuation in exchange rates for the US dollar, especially during the 1970s, which created highly unpredictable pricing levels for journals from European based publishers for subscribers in the United States (Tuttle 1996, p. 131). However, most of the factors contributing to the serials crisis are international in their nature, and the challenge of serial prices is felt in academic libraries world wide.

Figure 1: Serials and monograph costs in ARL libraries 1986 – 1997. (Modified from ARL 1998b, online).
The rising cost of scholarly journals

As illustrated in Figure 1, the concept of a serials crisis refers to a library funding dilemma. For a number of years, the prices of serials have increased significantly more than the Consumer Price Index, and also more than monograph prices (ARL 1998a, online). However, overall library budgets have not increased. Among the effects are massive cancellations of serial subscriptions. This phenomenon has inspired journalists to use terms such as “serial killers” (McCarthy 1994, online) and “serial library killer” (Butler 1999, online) when referring to the ARL cancellations and similar recent Danish initiatives, respectively. Although libraries are subscribing to fewer titles, the total budget for serials continues to increase (Figure 1). Resources are redirected from other parts of the budget. There is a tendency towards buying fewer books, and some speak of an emerging “monograph crisis” as a result of this trend (Stubbs; quoted in Swindler 1996a, p. 21).

The effects of the serials crisis have been felt also in Sweden. Shrinking library budgets and currency fluctuations, combined with rising cost of subscriptions, have led to large-scale subscription cancellations in Swedish academic and research libraries (Harnesk 1996, p. 20). There are, however, significant differences between institutions in terms of the strength of this effect. Most affected are libraries within the STM fields (science, technology and medicine), while the effects are less pronounced within the humanities and social sciences (Harnesk 1996, p.16). Similar trends are evident in many countries (Nilsson 1995, p. 11–12; Swindler 1996a, p. 20). Several new academic libraries have been established in Sweden during the 1990s. Financing have been more generous for these young libraries than for Swedish academic libraries in general, and thus they have not been affected to the same degree by the serials pricing crisis (Harnesk 1996, p. 20).

Publishers of scholarly journals

Among the underlying factors contributing to the rising cost of scholarly journals is the shift in the structure of publishing (Tuttle 1996, p. 130–132). Before World War II, a large proportion of the scholarly journals was published by professional societies and associations, while commercial publishers played a minor role. With the rapidly growing level of scholarly scientific activities that followed after the war, a need for more outlets for scientific publications emerged. Scientific publishing houses based in Europe were successful in their efforts to approach the large American market and established themselves as suppliers of a
steadily increasing number of scientific journal titles. Along with this change came also a shift in philosophy, from distribution of research findings by not-for-profit organizations as a vehicle of scholarly communication to sales of scholarly journals as one among other products provided by for-profit publishers.

A trend towards larger conglomerates of publishers is evident, and with it comes concerns of competition and market shares. For example, with Elsevier’s purchase of Pergamon in 1991, this one publisher alone accounted for 30–40% of ARL institutions’ expenditures on science journals in some sub-disciplines (Swindler 1996a, p. 19). Together with Springer, these publishers accounted for 43% of the increase in serials expenditures at one university between 1986 and 1987 (Okerson 1992, p. xxi).

The scholarly journal article and the academic reward system

Contributing to the serials crisis is also the ever increasing number of articles submitted to and published in scholarly journals. The driving force behind this trend is the academic reward system, in which a high number of publications in peer-reviewed journals is the ticket to promotions and attractive academic positions. A modification of this reward system is needed to avoid situations where results of research are divided into many publications in order to give the authors more credit (Tuttle 1996, p. 134; Okerson 1992, p. xxii).

Electronic publications, even when peer-reviewed, do not hold the same status as publications in established printed journals. As a consequence, scholars who have embraced the new technology and have chosen to publish their results in a digital form also submit their paper for publication in a print journal in order to receive academic credit (Medows 1993, p. 40). Marcia Tuttle sees this as one of the major problems within the serials publishing industry: “As long as the quantity of published articles and books is highly valued, scholarly journals will continue to multiply, grow in size, and increase in price” (1996, p. 134).

Stevan Harnad, who introduced the term "scholarly skywriting", has made numerous contributions in the discussion on how electronic networks can play a role in scholarly communication (1990, online). How libraries and publishers are affected by the transition from printed to electronic journals was discussed in a recent paper by Andrew Odlyzko, another frequent contributor in the ongoing debate around electronic publishing (1999, online). In this transition period new models for scientific publishing, peer-review, and academic reward systems are being suggested, tested, and evaluated.
Access, ownership, and document delivery

The trend towards massive cancellations of journals in research libraries during the last two decades is also closely related to a new philosophy in libraries, described in the literature as “access versus ownership” (e.g. Tuttle 1996, p. 13; Hawbaker and Wagner 1996, online). With the ever increasing volume of scholarly information published, being self-sufficient is not a realistic goal even for the most ambitious of libraries. Cancellations of serial titles which see little use and redirection of resources towards document delivery has become an accepted policy. Fewer than five requests per year is sometimes used as an indication of titles for which is it more economical to rely on interlibrary loan than to keep it in subscription (Swindler 1996b, p. 94). New technological developments facilitate fast deliveries of journal articles, either through interlibrary loan or via commercial document supply services. This is the basis for the shift in strategy from having as much as possible within the library’s own collections “just in case” to accessing and making the required product available to the library user “just in time”. However, there is a snag in this trend, which librarians are well aware of. Some libraries must have the journals for others to be able to access them through interlibrary loan. If all libraries cancel titles which are marginal to their collections and keep only the most popular journals, the system of interlibrary loan will be jeopardized (Nilsson 1995, p. 13). With fewer and fewer subscribers, the price of specialized journals will increase even more, which in turn will contribute to the cancellation spiral (Tuttle 1996, pp. 133,139).

Electronic journals enter the stage

Myth 8: Electronic journals will save the libraries money (Woodward et al. 1996, online)

Considering that printed journals have existed since the 1600s, the electronic journal is indeed a young medium in the history of scholarly communication. In a review of the history of e-journals Ann Okerson used the number of titles registered in the so-called ARL directory (Directory of Electronic Journals, Newsletters, and Academic Discussion List) and titles announced on the electronic mailing list NewJour as illustrative yardsticks for this development (1998b, online).

In the first issue of the ARL directory published in May 1991, 27 titles of electronic magazines and journals were listed (Figure 2). Three years later the number had risen to 181. With the breakthrough of the World Wide Web that year, the number of e-journals grew rapidly. By 1996, more than 1 000 titles were listed. Since 1996, new e-journal titles have been
announced on the electronic mailing list *NewJour*. The number of titles increased from 2 000 in May 1996 to 3 634 in May 1997. At the time of Okerson’s review (11 November 1998) the number of titles had climbed to 6 777, indicating the rapid changes in the e-journal market.

![Graph showing the number of titles from 1991 to 1998](image)

**Figure 2.** The number of titles of electronic magazines and journals registered in the *ARL directory* 1991–1996, followed by the titles listed in the electronic mailing list *NewJour* 1996–1998. (Data from Okerson 1998b, online).

**Library consortia**

One of the forces driving the formation of library consortia was an initiative from the publisher Academic Press (AP). In 1996, AP made their journals available online through the database *IDEAL*, and offered 175 AP titles in full-text to library consortia at a favorable price. Several other publishers and providers of e-journals followed with similar offers. One of the first large library consortia to be formed as a response to the new way of dealing with journals in electronic formats was the NorthEast Research Library Consortium, NERL (Okerson 1996b, online). One of the factors which contributed to the development of library consortia as a force in negotiations for e-journal licenses was the creation of the *Consortium of Consortia* in 1996. This organization, which later changed its name to *The International Coalition of Library Consortia* (ICOLC), has issued a statement which can be considered a milestone in the area of e-journals and licensing (see next section in this chapter). Other contributions from this organization include guidelines for usage statistics (see p. 25) and a recent statement
concerning technical issues (ICOLC 1999).

**Licensing of electronic journals and full-text databases**

In addition to ensuring access to electronic resources and possible financial benefits for institutions which jointly license access to full-text databases, the aggregation of negotiating skills is another obvious benefit of a consortial arrangement. As mentioned in the chapter defining consortia, one contract (i.e. one negotiation process, on behalf of all members in the consortium) is one of the key factors characterizing these arrangements. The negotiating of licenses requires special skills, such as familiarity with the language of license agreements and with the human relations element in making licensing judgments (Duranceau 1997, online). Many librarians seem to find themselves unprepared for this task, and welcome the responsibility assigned to consortium coordinators in the negotiation process.

Checklists including relevant questions to ask and issues to consider when faced with challenging licensing negotiations have appeared on the Internet as librarians and organizations gain valuable experiences within this new field (e.g. Okerson 1996c, online; Duranceau 1997, online). A “Proposed ‘model license’ between UK universities and publishers” was issued in July 1997 (eLib 1997, online). The “Dutch – German library joint licensing principles and guidelines” followed in October the same year (KUB 1997, online). Certain aspects of licensing, such as copyright and other legal issues, may need to be tailored to national rules and regulations. Most issues concerning licensing, however, are international in their nature.

A “Statement of current perspectives and preferred practices for the selection and purchase of electronic information” was issued by ICOLC in March 1998 (ICOLC 1998a). Current problems and future needs concerning library funding, fair use, archiving of electronic information, pricing models, and measures of effectiveness were addressed in this statement. “Preferred practices” were described for issues related to contract negotiations, pricing, data access, archiving, system platforms, licensing terms, and user authentication. The general principles described in this statement may be useful for both library consortia and information providers. ICOLC invited information providers to comment on the statement, and some providers have issued such responses with specific comments describing the publishers’ view on the issues mentioned above (e.g. Hunter 1998, online). The statement has stimulated the dialog between information providers and consortia, which was among ICOLC’s aims with this initiative. By November 1998 the statement was adopted by 90 member consortia (Okerson, 1998b).
Several of the key factors described in the ICOLC statement are reflected in the principles adopted by BIBSAM for the negotiation of licenses on behalf of the Swedish Consortium:

- access through checking IP numbers or domain names throughout the whole university or public authority, irrespective of whether it is located in one or several geographical places

- access to the databases for everyone (not only the employees and students belonging to the university or public authority) who visits any library connected - so-called “walk-in use”

- copying - it must also be permitted to make digital copies of individual documents in the databases for non-commercial purposes

- provision of copies - it must be permitted to provide copies of articles for publicly financed libraries (public libraries, hospital libraries, etc.) which are not parties involved in the agreement

- archive access - even if the agreement has been terminated, some form of access must be provided at least to the contents of the database that correspond to the period of time covered by the agreement

- digital subscription only - it must be possible to subscribe to journals or other publications in their digital form without having to simultaneously subscribe to the printed version.

(BIBSAM 1999, online)
EVALUATION OF ELECTRONIC JOURNALS

In this chapter, methods and tools for evaluation of electronic journals are presented. Several of these evaluation tools apply to both printed and electronic journal formats, while others are specific for electronic formats. Printed journals have traditionally been purchased by units of single titles. Databases containing electronic journals in full-text represent a new category of products which in many respects differ from material traditionally handled by libraries. New methods and criteria specifically addressing properties of electronic journals and databases are needed to evaluate these products.

Evaluation of journals may be carried out at two levels: micro level and macro level (Nisonger 1996, p. 234; Swindler 1996b, p. 87). Micro level refers to evaluation of single titles, regardless of the collection or database in which the title is found. Macro level means evaluation of whole collections, including all the titles within it. Such collections may be a library’s total holding of journal titles or a database with electronic journals in full-text. The practice of package deals for electronic journals offered by some providers creates yet new categories of collections: 1) full-text databases, from which subscriptions of single journal titles à la carte is permitted, and 2) full-text databases, from which subscription to the whole product including all titles is the only option.

Three main stages can be identified in the process of serials collection development: identification, evaluation, and selection (Nisonger 1996, p. 234; Swindler 1996b, p. 65). Evaluation and selection of journals are processes which often go hand-in-hand, and which apply both to single titles (micro level) and to collections (macro level). Identification is a necessary first step prior to the evaluation and selection processes. While many bibliographic tools are available for identification of printed journals, such tools for identification of electronic journals are not equally well established (Nisonger 1996, p. 234). Luke Swindler has compiled a comprehensive list of identification sources for both printed and electronic serials (1996b, p. 68–84). The process of identification of electronic journals will not be discussed further here.

General evaluation methods

Luke Swindler describes a number of methods which may assist librarians in the journal evaluation process (1996b, p. 88–96). Short summaries of a selection of these evaluation tools,
as described by Swindler, follow in the sections below. These methods are: 1) list checking, 2) citation analysis, 3) circulation and use, 4) interlibrary loan analysis, and 5) comparative size and expenditure statistics. The description of each method is followed by a discussion addressing possible applications related to electronic journals and full-text databases. Four additional evaluation tools described by Swindler will not be discussed further here. No single method covers all aspects necessary for a thorough product evaluation. Using a combination of methods is therefore a recommended strategy.

List checking

List checking is a macro level evaluation tool in which the entire serial holdings of an institution are checked against standard selection guides, periodical indexes, bibliographies, or serial holdings of other institutions. A high percentage score of the listed titles indicates a good level of support to users of the collection. A strength of this method is, according to Swindler, that it is a relatively easy procedure to conduct. However, list checking does not take the quality of each publication into account. Another weak point is that it may be difficult to find lists which are appropriate to each institution (Swindler 1996b, p. 89).

One aspect to consider when discussing the method of list checking is the recent development of efficient document delivery services and the shift in strategy from “just in case” to “just in time” (see p. 14). The philosophy that more is better, which is reflected in the list checking method, may thus seem a bit outdated.

List checking can be useful when evaluating e-journal package deals or databases, both for single institutions and for consortia. The object of evaluation is then the total list of titles offered. Individual investigation and evaluation of all titles in databases such as EBSCOHost is challenging due to the sheer number of titles (approximately 1 300 journal titles in full-text). The percentage of titles in a database which can be identified in an appropriate list may give an indication of the relevance of this resource for individual institutions. Kushkowskii and coworkers (1998) recently presented a method for building core journal lists in interdisciplinary subject areas. Assembling such a list may be a worthwhile exercise for institutions faced with difficult purchasing decisions related to full-text databases.

For consortia, lists of core titles representing the combined interest of all the participating institutions may assist consortium coordinators in the evaluation of different e-journal databases. This method was used as a tool when identifying appropriate databases for a consortium of Norwegian academic institutions (RBT 1999, online). Several different
indicators of relevance were used to assemble the list of journal titles: 1) need, as reported by Norwegian academic institutions; 2) journal subscriptions registered in the Norwegian union catalog BIBSYS; 3) interlibrary loan of journal articles registered in BIBSYS; 4) the journal titles registered in the ISI databases in which Norwegian scholars most often publish; and 5) titles in the ISI databases which Norwegian scholars most often cite. Some of these indicators of relevance are mentioned by Swindler as evaluation tools and are described further in the sections below.

In this study, the presence of print subscriptions of the journals included in Project MUSE and IDEAL in the Swedish Consortium is used as a form of list checking to assess the relevance of the databases. A high number of print subscriptions can indicate a need for these journals in the Consortium or at the individual institutions. These titles have been actively purchased through the traditional process of serials acquisition, and thus have been through an evaluation process in which they were found to be relevant to users at the institution in question. This is in contrast to many electronic journals that are included in package deals, and which are not actively purchased (Duranceau & Lippert 1996, online; Kiernan 1997).

Citation analysis

When using citation analysis as a journal evaluation method, the significance of single titles is measured by counting the number of times it is mentioned in footnotes and bibliographies. Although controversial, the method is popular and considered a powerful evaluation technique at the micro level. Among its strengths is the potential of identifying current interest by highlighting core and peripheral titles. Another strength, according to Swindler, is that the data necessary to carry out such evaluations is readily available from ISI’s computer-generated annual citation reports. Citation analysis should be based on local user populations, i.e. be institution specific, to increase its value as an evaluation tool for local collections. Inherent in this method is that it applies to research journals only (Swindler 1996b, p. 92).

A key parameter in citation analysis is the so-called impact factor published in the Journal Citation Reports (JCR) from Institute for Scientific Information (ISI 1999a; 1999b, online). This factor is defined as the number of current citations to articles published in a specific journal in a two-year period divided by the total number of articles published in the same journal in the corresponding two-year period (ISI 1999c, online). Both alphabetical lists of journals and subject category listings, in which journals are ranked by their impact factors, are available. Journals included in Science Citation Index are listed in the JCR Science edition.
Similarly, journals included in *Social Science Citation Index* are listed in the *JCR Social Science edition*. No *JCR* exists for journals included in the *Arts and Humanities Citation Index*. Evaluation of journals based on citation analysis is not as important within these subject areas as within the sciences and social sciences (Nisonger 1994, p. 448).

The use of citation data in assembling a list of core journal titles for a Norwegian consortium of academic libraries is an example of tailoring citation analysis to specific populations (see p. 20). Citation analysis can provide information about the prestige of single journal titles within the scholarly community. However, the impact factor by itself should not be considered a measure of quality, and citation analysis data should be interpreted with care (e.g. see discussion in Harter and Nisonger 1997, p. 1146 and Kushowski *et al.* 1998, p. 478).

Citation score can be a tool to help indicate the relevance of different full-text databases for individual institutions. Relevant inquiries may be: How many of the journal titles offered in the full-text database are listed under appropriate subject categories in the *JCRs*? How high/low are their impact factors?

Access to journal citation data in an appropriate format is a prerequisite for this to be an attractive method when evaluating a large number of titles. The *Journal Citation Reports* have been through the typical evolution of formats; from printed reports, via microfiche and CD-ROM, to online publications. Online citation reports can now be accessed on a subscription basis similar to other ISI products. At the time of this study (March 1999), access to *JCRs* via national licenses for subscribing members in the Swedish Consortium was under negotiation between BIBSAM and ISI. No recent *JCR Science edition*, or *JCR Social Science edition* could be located through the LIBRIS union catalog at the time of this study. Being primarily a reference tool for librarians, these products may still be available in the libraries without being registered in the catalogs. Citation data could have been used in this study in the evaluation of the *IDEAL* database, in which most journals are within STM fields. However, without journal specific usage statistics from *IDEAL*, citation analysis of specific titles seemed less relevant than if such parameters could be analyzed with reference to the popularity (use) of individual titles within the Consortium. The application of this evaluation tool for the *IDEAL* database was therefore not made a priority in this study. Citation analysis did not seem appropriate as an evaluation tool for the *Project MUSE* database, in which most of the journals are in the humanities and social sciences. As mentioned above, no *JCR* is produced for journals included in the *Arts and Humanities Citation Index*. 
Circulation and use

Journals can be evaluated based on usage statistics. The value of this tool is based on the assumption that use is a surrogate measure of need. Inherent in this method is its limitation to titles in the existing collection. Any need for titles missing from the collection thus cannot be identified (Swindler 1996b, p. 93).

While citation analysis and list checking are methods which can be useful when evaluating e-journal package deals prior to the signing of licenses (i.e. before the products are available in the subscribing institutions), usage statistics analysis becomes useful at a later stage when a license is up for renewal. Conducting usage studies with printed journals is challenging (e.g. examples quoted by Dawson 1999). Detailed statistics of the use of electronic journals, however, can be generated automatically. Statistics assembled by e-journal providers can be powerful tools for journal and database evaluations. This is discussed later in this chapter (see p. 25). Usage statistics form the basis of the *Project MUSE* and *IDEAL* usage studies which are presented in this report.

Interlibrary loan analysis

Analysis of materials requested in interlibrary loan (ILL) can help identify the need of serial titles which are not currently in the local collection. This method can serve as a complement to other methods in identifying user needs (Swindler 1996b, p. 94).

Prior to subscribing or licensing access to full-text databases, an analysis of ILLs of the titles included in e-journal databases may provide useful information about individual institutions’ need for the titles in question. Automation of ILL routines makes this information more readily available now compared to when such requests were handled manually.

In Sweden, ILLs can be requested via LIBRIS WebSearch (Sagnert 1998, p. 4). Access to this service is restricted to member libraries. The service was established during the fall of 1997, and is now frequently used. ILL data from LIBRIS WebSearch is used as an evaluation tool for the databases *Project MUSE* and *IDEAL* in this study. It is worth noting that journal articles are also requested through commercial document delivery services, and any need for titles ordered through these channels will not be reflected in the LIBRIS statistics.

Comparative size and expenditure statistics

Comparisons of the number of serial titles in the collection and the amount of money spent on them is regarded a quick and precise method of serials evaluation on the macro level.
However, this method alone will not provide information on how well an institution is meeting user needs (Swindler 1996b, p. 95).

This method is widely used to illustrate the serials crisis within a group of American research libraries (see Figure 1). Thomas Nisonger has addressed the issue of how to handle electronic journals when registering statistics on institutional journal subscriptions. New guidelines for reporting statistics are needed to encompass this new format (1996, p. 235).

In Sweden, the annual statistics assembled for research and academic libraries do not provide data for detailed time trend analysis similar to the ARL model (Figure 1). The number of serial titles held are reported for the Swedish libraries, but the amount of money spent on these subscriptions is not specified (SCB 1996, Bilaga 1). With access to local budget information, however, comparative size and expenditure statistics may still be a useful method for individual institutions to document developments in their serials holdings.

**Evaluation tools for electronic products**

The general evaluation methods discussed in the previous sections have been developed for journals as we know them as printed products. In an electronic environment, however, several additional factors need to be considered. The Council of Australian University Librarians (CAUL) has compiled a list of issues which should be considered when evaluating online services including full-text databases:

- content, coverage, currency (all can be compared with the same data in other formats),
- access (method, hours etc), interface, search capabilities, response times, reliability, support of multiple platforms,
- downloading, printing, emailing,
- pricing, licensing terms
- Usefulness of the content to UWA’s [or your library’s] clients
- Quality of the content (comprehensiveness, currency, accuracy, etc.)
- Quality and reliability of the software and system
- does the interface work as advertised? (are there bugs, glitches and eccentricities?)
- is the system always available for use on the schedule agreed to by the vendor?
- Cost
- Response time during interactive use
• Ease of use (overall design of the search interface)

• Features (e-mail, Boolean logic, search by fields, proximity operators, etc.)

• Availability of support. This would include online assistance, hot line, documentation and training material

• Regular supply of meaningful usage statistics

(Costello 1998, online)

As is apparent from the list above, evaluating online resources is a complex task. Many of the issues listed here could each be a topic for comprehensive studies. However, limited time and resources are also factors to consider when librarians are evaluating full-text databases and other online products. Librarians at the University of Sydney Library have developed a detailed form; “Recommendation to purchase or acquire access to an electronic information resource” (1998, online). Such forms – or checklists – may be helpful when collecting information about electronic products prior to making licensing decisions.

Several of the factors included in the CAUL checklist were addressed in a recent study by Hazel Woodward and coworkers. The Café Jus (Commercial and Free Electronic Journal User Study) highlighted issues such as relevance and quality of journals, format, layout and navigation, and access, all from the users’ perspective. The IDEAL database was among the products available to the test group. Several issues which users of full-text databases found challenging were identified. Some of these factors are under control of the publisher: design, format and navigation tools. Other important factors, such as adequate bandwidth, are not under control of the publisher but need to be addressed locally. Among the useful results of the Café Jus project was a list of recommendations addressed to e-journal providers. Specific actions which may help improve the acceptability of e-journals among users were suggested (Woodward et al., 1998).

The results of user studies of this kind highlight issues which are worth considering when evaluating electronic resources, many of which are included in the CAUL checklist above. The users’ perspectives on Project MUSE and IDEAL databases are not included in this study. This is an important limitation, in that factors related to user friendliness of the full-text users databases could be expected to be reflected in the usage statistics. However, presentation to and user satisfaction are factors beyond the scope of this study.
Guidelines on usage statistics

Regular supply of meaningful usage statistics are among the factors to consider when evaluating full-text databases and other online products (Costello 1998, online; Dawson 1999). The level of detail and usefulness of the statistics produced differ significantly among the e-journal providers. Some aspects of this will be illustrated by the differences in format and content of the usage statistics available from Project MUSE and IDEAL in this study. The International Coalition of Library Consortia (ICOLC) recently issued “Guidelines for statistical measures of usage of Web-based indexed, abstracted, and full text resources”. ICOLC recommends that it should be possible to delineate usage:

1. By each specific database of the provider; 2. By each institutionally-defined set of IP addresses / locators to subnet level; 3. By total consortium; 4. By special data element passed by subscriber (e.g., account or ID number); 5. By time period. Vendor’s system should minimally report by month. For each month, each type of use should be reported by hour of the day, and vendor should maintain 24 months of historical data (ICOLC 1998b, online).

It is stated that several elements of use must be provided. These include the number of queries (searches), menu selections, sessions (logins), turn-aways, and items examined. Requirements regarding user, institutional, and consortial confidentiality are also specified. ICOLC further recommends that “Information providers should provide comparative statistics that give consortia a context in which to analyze statistics at the aggregate institutional (consortium member) level.” Finally, ICOLC recommends that the usage statistics should be accessible via web sites in tabular formats. So-called “flat files” which may be downloaded and manipulated locally should also be available for specific data elements, when appropriate (ICOLC 1998b, online).

To my knowledge, few – if any – information providers currently produce statistics of quality comparable to the recommendations by ICOLC. The web site provided by EBSCOHost with statistics for users of their full-text databases is an example in which many of the above mentioned parameters are specified. With the aid of the ICOLC guidelines, individual institutions and consortia can influence the development of high-quality usage statistics for electronic resources. This can be achieved by supporting the guidelines, asking information providers for such products, and using the statistics provided as a tool to evaluate electronic resources. Statistics provided by Johns Hopkins University Press (Project MUSE) and Academic Press (IDEAL) form the basis of the usage study presented in this report.

25
In this chapter, a usage study of the electronic journals in Project MUSE is presented. The study focuses on use in academic institutions within the Swedish Consortium during the 4th quarter of 1998. This period was selected because usage statistics for this database are produced on a quarterly basis. The most recent data available at the time of this study was the period 1 October – 31 December 1998. The license agreement between Project MUSE and the Swedish Consortium gave the member institutions access to the Project MUSE e-journals from 1 July 1998 to 31 December 1999. At the time of this study, the e-journals had been available to users at these institutions for 3 – 6 months.

The objectives of the usage study were:

• to investigate to what extent the e-journals in Project MUSE are used at academic institutions within the Swedish Consortium

• to analyze usage of Project MUSE e-journal titles based on:
  ◊ additional parameters provided by Project MUSE, such as the number of issues available online, the price for single titles, and abstract and indexing (A & I) services registering each title
  ◊ the presence of print subscriptions within the member institutions
  ◊ data on interlibrary loan of Project MUSE titles before and after the license agreement

Description of Project MUSE

Project MUSE is a trademark for the online journals from Johns Hopkins University Press. The project is a joint venture between the JHUP and the Milton S. Eisenhower Library, funded by the National Endowment for the Humanities and the Andrew W. Mellon Foundation. Project MUSE is in many ways unique among the e-journal providers. A primary objective of the project is to provide access to scholarly journals at affordable prices for academic communities. To achieve this, the strategy is to take advantage of the new online technology for production and distribution of scholarly information. Library consortia worldwide now access JHUP e-journals through licenses (JHUP 1998).

Project MUSE journals

A majority of the Project MUSE journals are in the humanities and social sciences. This is
reflected in the number of Project MUSE titles registered in the different indexes provided by ISI: 27 in Arts and Humanities Citation Index, 9 in Social Science Citation Index, and 2 in Science Citation Index (JHUP 1999d, online). Several of the journals are new with only a few issues online. Others have been published for several years: More than 20 issues were available online in December 1998 for some titles.

At the time of data collection for this study, 46 electronic journal titles were available to Project MUSE subscribers. Two of the titles, Postmodern Culture and Theory & Event, are electronic-only, while other titles exist both as print and electronic versions. Prior to becoming a Project MUSE journal in January 1997, Postmodern Culture was available free of charge and had already acquired many readers (JHUP 1999e, online). A majority of the Project MUSE titles are of interest to the international academic community. Some titles, however, which cover specialty issues related to American culture, probably find most readers within the United States.

One of the institutions in the Swedish Consortium was already a Project MUSE subscriber before the national license agreement, and had thus access to all Project MUSE e-journals already in 1997. Another member subscribed to three individual Project MUSE titles prior to accessing the whole database via the national license.

License terms

Information on current pricing and licensing terms for academic consortia is available from the Project MUSE web site (JHUP 1999c, online). Project MUSE offers subscriptions both to individual institutions and to consortia. Subscription to single titles à la carte is an option for individual institutions only. The price for subscribing members in a consortium is based both on the total number of institutions in the consortium and on the size of each institution. The institutional member categories are tailor-made for the American university system, and include large and small academic libraries, branch campuses, community colleges, special libraries, public libraries, and high schools. When this system is applied to the organizational structure of institutions in other countries, subscribers are assigned to the most closely related category.

The standard Project MUSE contract permits interlibrary loan (ILL) under CONTU guidelines. These are voluntary guidelines with strings to the US Copyright Act of 1976 (see MeL 1998, online; CNI 1997, online). This term is also included in the contract between Johns Hopkins University Press and the Swedish Consortium (BIBSAM 1998b). The contents of the CONTU guidelines are probably unfamiliar to many non-US subscribers of Project MUSE.
These guidelines recommend that libraries which within a calendar year copy (request via ILL) more than five articles – published within five years of the request – from a journal title should pay royalties to the publisher of that journal. This principle is known as the “suggestion of five” (Okerson 1996c, online). The responsibility for record-keeping thus lies with the requesting library. The position taken by BIBSAM in all licensing negotiations for full-text resources is that “it must be permitted to provide copies of articles for publicly financed libraries (public libraries, hospital libraries, etc.) which are not parties involved in the agreement” (see p. 17). This principle was found acceptable by Project MUSE (Susanna Broms, BIBSAM, personal communication).

The archival issue is also mentioned in the Project MUSE standard contract for consortia. Archival files will be provided at no additional charge to each participant after the expiration of the subscription term in (non-searchable) CD-ROM format.

No reference is made of usage statistics in the license agreement. However, the format and content of such statistics are mentioned in the general informational material provided by Project MUSE (JHUP 1998).

Usage statistics

Usage statistics reports from Project MUSE are generated automatically, based on server logs on IP addresses and domain names. Reports are produced on a quarterly basis. For each subscribing institution, the following parameters are specified: total requests, average requests per day, total bytes requested, and average bytes requested per day. The number of requests for each of the Project MUSE titles accessed is then divided into the following categories: articles, images, other, TOCs, and total (JHUP 1999). The number of articles accessed for each journal title for each institution in the Consortium was the usage parameter selected for further analysis in this study.

The format of access and transfer of usage data from Project MUSE is via e-mail to individual members and/or consortium coordinators. The transfer of data as non-formatted text embedded in a large e-mail message may be an efficient and practical solution for the sender. However, it requires quite a bit of processing and reformatting at the receivers’ end before the data are suited for any further analysis. ICOLC recommends that statistics should be available on a monthly basis (see p. 25). The quarterly summaries provided by Project MUSE limit the possibilities for time trend analysis.
Results of the *Project MUSE* usage study

In this chapter, the usage of *Project MUSE* e-journals at academic institutions in the Swedish Consortium during the 4th quarter of 1998 is presented. The results of the usage study are summarized in Tables 1–3. To provide a context for the analysis of the usage data, journal information extracted from *Project MUSE* web sites and data on print subscriptions from the LIBRIS union catalog are included in these tables. Statistics on interlibrary loan of *Project MUSE* journals collected from the LIBRIS database for this study, are summarized in Table 4. The presentation of each table is accompanied by comments highlighting specific issues related to the data in question. Other comments related to the findings follow in the chapter “Discussion”.

A total of 25 academic institutions in the categories Universities, Special Institutes and University Colleges were subscribing to *Project MUSE* via the national license at the time of this study (see p. 1 for member categories). In addition, two members in the category Research Libraries were subscribers. Usage data from these two institutions are not included in the results for the *Project MUSE* study. The terms “whole Consortium” and “total Consortium” refer in this context to 25 out of the total 27 subscribing institutions.

*Usage within the whole Consortium*

Table 1 lists the *Project MUSE* journals ranked in the order of use by the total Consortium. In addition to the number of articles accessed from each title, parameters available from the *Project MUSE* web pages are included. These parameters are: the year of first online issue, the number of issues online at the time of this study, and the number of abstract & indexing services (A & I) in which the title in question is registered.

A total of 1,688 articles were accessed by the Consortium during the 4th quarter of 1998. Usage was registered for all 46 titles. The most popular journals were *Postmodern Culture* and *Journal of Democracy* with 155 and 140 articles accessed, respectively. Three articles only were accessed from each of the least frequently used titles: *Emily Dickinson Journal* and *Eighteenth-Century Life*. Journals which cover narrow topics primarily of interest to the American market, e.g. *American Jewish History* and *Journal of Asian American Studies*, were
Table 1: Articles accessed from all *Project MUSE* journal titles by academic institutions in the Swedish Consortium, 4th quarter 1998

<table>
<thead>
<tr>
<th><em>Project MUSE</em> journal titles ¹</th>
<th>Articles accessed</th>
<th>First issue online (yr) ²</th>
<th>Issues online ³</th>
<th>A &amp; I services ³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postmodern Culture (e-only)</td>
<td>155</td>
<td>1990</td>
<td>25</td>
<td>n.i.</td>
</tr>
<tr>
<td>Journal of Democracy</td>
<td>140</td>
<td>1995</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Wide Angle</td>
<td>113</td>
<td>1996</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>World Politics</td>
<td>97</td>
<td>1995</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Bulletin of the History of Medicine</td>
<td>74</td>
<td>1996</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Human Rights Quarterly</td>
<td>68</td>
<td>1995</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>Journal of the History of Ideas</td>
<td>68</td>
<td>1996</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Theatre Journal</td>
<td>63</td>
<td>1996</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Modernism/Modernity</td>
<td>62</td>
<td>1995</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Theory &amp; Event (e-only)</td>
<td>59</td>
<td>1997</td>
<td>7</td>
<td>n.i.</td>
</tr>
<tr>
<td>Modern Fiction Studies</td>
<td>58</td>
<td>1994</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Configurations</td>
<td>55</td>
<td>1993</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Arethusa</td>
<td>48</td>
<td>1996</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>American Imago</td>
<td>42</td>
<td>1995</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>New Literary History</td>
<td>42</td>
<td>1995</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>ELH (English Literary History)</td>
<td>41</td>
<td>1993</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>MLN (Modern Language Notes)</td>
<td>37</td>
<td>1993</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Callaloo</td>
<td>33</td>
<td>1995</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Philosophy and Literature</td>
<td>31</td>
<td>1995</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Technology and Culture</td>
<td>30</td>
<td>1998</td>
<td>2</td>
<td>n.i.</td>
</tr>
<tr>
<td>American Jewish History</td>
<td>27</td>
<td>1996</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Philosophy Psychiatry &amp; Psychology</td>
<td>27</td>
<td>1996</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>American Journal of Mathematics</td>
<td>24</td>
<td>1995</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Imagine</td>
<td>22</td>
<td>1996</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Literature and Medicine</td>
<td>20</td>
<td>1995</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Yale Journal of Criticism</td>
<td>20</td>
<td>1996</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Eighteenth - Century Studies</td>
<td>17</td>
<td>1995</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Review of Higher Education</td>
<td>17</td>
<td>1996</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>SAIS Review</td>
<td>17</td>
<td>1995</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Journal of Modern Greek Studies</td>
<td>15</td>
<td>1996</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Lion and the Unicorn</td>
<td>15</td>
<td>1995</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Theatre Topics</td>
<td>15</td>
<td>1996</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>American Journal of Philology</td>
<td>14</td>
<td>1996</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Diacritics</td>
<td>13</td>
<td>1996</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>American Quarterly</td>
<td>12</td>
<td>1996</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Reviews in American History</td>
<td>10</td>
<td>1995</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Late Imperial China</td>
<td>9</td>
<td>1996</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

cont.
In addition to being the most popular journal, *Postmodern Culture* was also the title with the highest number of issues online, a parameter which is likely to affect the level of use. The *Emily Dickinson Journal*, on the other hand, was launched online in 1998, and only two issues were available to *Project MUSE* subscribers at the time of this study. Apart from these two titles at the top and the bottom of the usage scale, only a weak relationship was evident between usage and the number of issues online. The two titles which were registered in the highest number of A & I services – *Human Rights Quarterly* and *Bulletin of the History of Medicine* – were among the most popular journals. However, no clear relationship was evident between usage and registration in A & I services when considering all the titles in the data set. These analyses were based on inspection of plots showing the total number of articles accessed versus the number of issues online and the number of A & I services, respectively.

Consortial usage and print subscriptions

Print subscriptions of *Project MUSE* titles within the group of institutions which have access to *Project MUSE* through the national license are listed in Tables 2a–2c. Table 2 is divided into three parts in order to highlight *Project MUSE* titles which were not readily accessible to users in the Swedish Consortium prior to the national license. In part 2a, titles which were found in print at institutions within the Consortium are listed. Titles which were not in subscription within the Consortium, but which were in subscription in other Swedish libraries...
Table 2a: Usage of Project MUSE e-journals available in print subscription within the Consortium

<table>
<thead>
<tr>
<th><em>Project MUSE</em> journal title</th>
<th>Print 2 subscriptions</th>
<th>Print 3 price, $</th>
<th>Institutions using e-titles</th>
<th>Articles accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Politics</td>
<td>14</td>
<td>80</td>
<td>10</td>
<td>97</td>
</tr>
<tr>
<td>New Literary History</td>
<td>10</td>
<td>102</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>Journal of the History of Ideas</td>
<td>9</td>
<td>64</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Technology and Culture</td>
<td>8</td>
<td>96</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Modern Fiction Studies</td>
<td>7</td>
<td>80</td>
<td>11</td>
<td>58</td>
</tr>
<tr>
<td>American Quarterly</td>
<td>7</td>
<td>81</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>MLN (Modern Language Notes)</td>
<td>6</td>
<td>104</td>
<td>9</td>
<td>37</td>
</tr>
<tr>
<td>Journal of Democracy</td>
<td>5</td>
<td>76</td>
<td>10</td>
<td>140</td>
</tr>
<tr>
<td>Bulletin of the History of Medicine</td>
<td>5</td>
<td>91</td>
<td>12</td>
<td>74</td>
</tr>
<tr>
<td>ELH (English Literary History)</td>
<td>5</td>
<td>97</td>
<td>10</td>
<td>41</td>
</tr>
<tr>
<td>Yale Journal of Criticism</td>
<td>5</td>
<td>78</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>American Journal of Philology</td>
<td>5</td>
<td>97</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Diacritics</td>
<td>5</td>
<td>77</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>American Journal of Mathematics</td>
<td>4</td>
<td>250</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>Theatre Journal</td>
<td>3</td>
<td>80</td>
<td>11</td>
<td>63</td>
</tr>
<tr>
<td>Modernism/Modernity</td>
<td>3</td>
<td>68</td>
<td>14</td>
<td>62</td>
</tr>
<tr>
<td>Configurations</td>
<td>3</td>
<td>70</td>
<td>12</td>
<td>55</td>
</tr>
<tr>
<td>Arethusa</td>
<td>3</td>
<td>60</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>Eighteenth-Century Studies</td>
<td>3</td>
<td>80</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Journal of Modern Greek Studies</td>
<td>3</td>
<td>80</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Journal of Early Christian Studies</td>
<td>3</td>
<td>78</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Wide Angle</td>
<td>2</td>
<td>80</td>
<td>8</td>
<td>113</td>
</tr>
<tr>
<td>Philosophy and Literature</td>
<td>2</td>
<td>60</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Human Rights Quarterly</td>
<td>1</td>
<td>100</td>
<td>10</td>
<td>68</td>
</tr>
<tr>
<td>American Jewish History</td>
<td>1</td>
<td>85</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Philosophy Psychiatry and Psychology</td>
<td>1</td>
<td>130</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Lion and the Unicorn</td>
<td>1</td>
<td>65</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Reviews in American History</td>
<td>1</td>
<td>82</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Modern Judaism</td>
<td>1</td>
<td>81</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Henry James Review</td>
<td>1</td>
<td>74</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Eighteenth-Century Life</td>
<td>1</td>
<td>60</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total (N=31)</td>
<td>128</td>
<td>1248</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2b: Usage of Project MUSE e-journals not in print subscription within the Consortium, but in subscription in other Swedish libraries registered in LIBRIS

<table>
<thead>
<tr>
<th><em>Project MUSE</em> journal title</th>
<th>Print 2 subscriptions</th>
<th>Print 3 price, $</th>
<th>Institutions using e-titles</th>
<th>Articles accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Imago</td>
<td>0</td>
<td>89</td>
<td>10</td>
<td>42</td>
</tr>
<tr>
<td>Callaloo</td>
<td>0</td>
<td>81</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Literature and Medicine</td>
<td>0</td>
<td>65</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>SAIS Review</td>
<td>0</td>
<td>55</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>Total (N=4)</td>
<td>0</td>
<td>112</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2c: Usage of *Project MUSE* e-journals not in print subscription in Swedish libraries registered in LIBRIS

<table>
<thead>
<tr>
<th><em>Project MUSE</em> journal title</th>
<th>Print subscriptions</th>
<th>Print price, $</th>
<th>Institutions using e-titles</th>
<th>Articles accessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postmodern Culture (e-only)</td>
<td>0</td>
<td>n.a.</td>
<td>17</td>
<td>155</td>
</tr>
<tr>
<td>Theory &amp; Event (e-only)</td>
<td>0</td>
<td>n.a.</td>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td>PAJ: A Journal of Performance and Art</td>
<td>0</td>
<td>60</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>Imagine</td>
<td>0</td>
<td>30</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>Review of Higher Education</td>
<td>0</td>
<td>104</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Theatre Topics</td>
<td>0</td>
<td>40</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Late Imperial China</td>
<td>0</td>
<td>70</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Journal of Asian American Studies</td>
<td>0</td>
<td>64</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Milton Quarterly</td>
<td>0</td>
<td>40</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Kennedy Institute of Ethics Journal</td>
<td>0</td>
<td>100</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Emily Dickinson Journal</td>
<td>0</td>
<td>58</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total (N=9)</strong></td>
<td><strong>0</strong></td>
<td><strong>328</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Sort order: print subscriptions : articles accessed : number of institutions accessing titles in e-version
2. Print subscriptions in Consortium Libraries (LIBRIS Union Catalog, February 1999)
3. Price for single subscriptions 1999 (JHUP 1999b)

n.a.: not applicable (electronic only)

registered in the union catalog LIBRIS, are listed in 2b. Finally, the *Project MUSE* titles which were not in subscription in any of the Swedish libraries with holdings registered in the LIBRIS union catalog are listed in 2c (see comments in chapter “Data collection” for reservations regarding data on print subscriptions). In addition to the print subscription information, two parameters on usage of individual journal titles within the Consortium are included in Table 2. One is the number of institutions which have accessed each e-journal title during the 4th quarter of 1998. The other is the number of articles accessed from the electronic versions of these titles, a parameter which was also presented in Table 1 and which is included here to facilitate cross-reference between Table 2 and Table 1. A parameter from JHUP, the price for individual print subscriptions, was included to be able to investigate whether there was any correlation between the price of journals and the presence of print subscriptions in the member institutions. However, no such relationship was evident when inspecting plots showing the price of journal subscriptions versus the presence of print subscriptions.

A total of 128 print subscriptions of 31 different *Project MUSE* titles were held within member institutions at the time of this study (Table 2a). Four additional titles were in subscription in other Swedish libraries (Table 2b), while nine of the *Project MUSE* titles were not in subscription in any of the Swedish libraries registered in the LIBRIS union catalog.
Project MUSE journal titles most often found in print in Swedish academic libraries were *World Politics* and *New Literary History* with 14 and 10 subscriptions, respectively.

Tables 2a, 2b, and 2c also show that 1,248 (74%) out of the total 1,688 Project MUSE e-journal articles accessed during the 4th quarter of 1998 were from titles available in print in at least one institution within the Consortium. Some of the titles which were in subscription in only one or two libraries were popular among e-journal users in the whole Consortium. For example, 10 different institutions accessed a total of 68 articles from the journal *Human Rights Quarterly*, which was in subscription in one member library only. Similarly, eight institutions accessed 113 articles from the journal *Wide Angle*, which was in print in only two member libraries. From the four titles not in subscription within the Consortium, but which are held in other Swedish libraries registered in LIBRIS, a total of 112 articles (7% of total) were accessed (Table 2b). In the third category – titles which were not in subscription in Swedish libraries registered in LIBRIS – 328 articles (19% of total) were accessed (Table 2c). Among these was the most popular of all Project MUSE journals, the electronic-only *Postmodern Culture*. This title alone accounted for 9% of the total use within the Swedish Consortium during the 3-month study period.

Usage within individual institutions

Parameters related to usage at each of the individual academic institutions in the Consortium are listed in Table 3. The institutions in this table are listed in the order of number of articles accessed. Three of the subscribing members were missing in the usage statistics provided by Project MUSE. At the institution with the highest level of use, 471 articles from Project MUSE journals were accessed during the 3-month study period. Several members had little use registered, with fewer than 10 articles accessed.

The number of journal titles used by each institution is also listed in Table 3. While articles from all the 46 Project MUSE titles were accessed by the total Consortium, none of the institutions had used all titles. With a few exceptions, the number of articles accessed and the number of journal titles used were closely correlated. One exception was Gotland University College, which had accessed a relatively high number of articles from few journals. An inquiry into the usage statistics for this institution showed that 24 and 34 of the 78 articles accessed at this institution were from the two journals *Modernism/Modernity* and
Table 3: Project MUSE titles and articles accessed by individual institutions, 4\textsuperscript{th} quarter 1998

<table>
<thead>
<tr>
<th>Institution</th>
<th>Articles accessed</th>
<th>Titles used</th>
<th>Use/student * 1000</th>
<th>Print subscriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Göteborgs Univ.</td>
<td>471</td>
<td>41</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Stockholms Univ.</td>
<td>331</td>
<td>35</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Umeå Univ.</td>
<td>139</td>
<td>36</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Mälardalen</td>
<td>100</td>
<td>27</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Lunds Univ. (^2)</td>
<td>81</td>
<td>25</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Linköpings Univ.</td>
<td>78</td>
<td>24</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Gotland</td>
<td>78</td>
<td>9</td>
<td>202</td>
<td>0</td>
</tr>
<tr>
<td>Anonymous (^3)</td>
<td>62</td>
<td>20</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Dalarna</td>
<td>62</td>
<td>17</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Halmstad</td>
<td>61</td>
<td>23</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Uppsala Univ.</td>
<td>56</td>
<td>22</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Karlstad Univ.</td>
<td>52</td>
<td>14</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Södertörn (^4)</td>
<td>42</td>
<td>16</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Luleå Univ.</td>
<td>24</td>
<td>12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Gävle</td>
<td>14</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Malmö (^4)</td>
<td>12</td>
<td>9</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Mitthögskolan</td>
<td>12</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Växjö Univ.</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Skövde</td>
<td>2</td>
<td>2</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Borås</td>
<td>2</td>
<td>1</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Trollhättan-Uddevalla</td>
<td>1</td>
<td>1</td>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>Kristianstad</td>
<td>1</td>
<td>1</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Karolinska Inst (Medicine)</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Kalmar</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Anonymous (^3)</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^1\) sort order: articles accessed, titles used
\(^2\) estimate of student numbers used in \(^5\), 4 000 to Malmö (F. Lettenström, BIBSAM)
\(^3\) see Chapter "Methods: Data collection"
\(^4\) new college, student number estimated (F. Lettenström, BIBSAM)
\(^5\) (total number of articles accessed 4\textsuperscript{th} quarter 1998 / number of students \(^6\) 1997) \* 1000
\(^6\) source: Högskoleverket 1998
\(^7\) based on library codes and information in LIBRIS union catalog, February 1999
\(^8\) no usage statistics available

Naturally, the large institutions with the highest number of potential users aggregate in the upper part of Table 3. As an attempt to take the size of the institutions into account, the third column shows the number of articles accessed at each institution normalized to the total number of students registered at the institutions. The smaller institutions are then represented...
among the more frequent users. However, these data should be interpreted with care. The overall number of *Project MUSE* articles requested is relatively small. The number of students registered at these institutions range from fewer than 400 to more than 24,000 (Högskoleverket 1998). Normalization to student numbers can therefore give some extreme results. Gotland University College, which has a high level of use when normalized to student numbers, is by far the smallest of the subscribing institutions. The parameter used here is a rather coarse approximation of the level of use related to the number of potential users. Other user groups, such as the number of faculty and/or the number of graduate students, could be included for a more thorough evaluation.

Institutional usage and print subscriptions

The last column in Table 3 shows that 13 out of the 25 academic institutions represented in this study were already subscribing to the print version of one or more of the journals from JHUP. Uppsala and Gothenburg Universities had 23 and 20 print subscriptions, respectively, out of the 44 *Project MUSE* titles which are available in print format. Uppsala University Library is a so-called *National Resource Library* for the humanities in Sweden and is assigned special responsibilities as a national center (Persson 1994, p.19). Many of the *Project MUSE* journals are relevant within the humanities. Gothenburg University had the highest level of use of all the members in the Consortium, both in terms of articles accessed and different journal titles used. The high number of print subscriptions indicate that many of the *Project MUSE* journals have been evaluated and considered relevant to this institution. Of importance when analyzing the usage data is also that Gothenburg University subscribed to *Project MUSE* already in 1997 via an individual license. Users at this university were thus possibly more familiar with the *Project MUSE* journals – and also with the use of electronic journals in general – than users at many of the other institutions in the Consortium at the time of this study.

Many of the institutions with few or no print subscriptions were also among the least frequent users of *Project MUSE*. However, there are some exceptions. Neither of the University Colleges Mälardalen, Gotland, or Dalarna had any of these titles in print in their local collections. Users at these institutions accessed 100, 78 and 62 articles, respectively, from the *Project MUSE* database during the 3-month study period. Whether this is motivated by higher relevance of the journals to users at these institutions compared to others with less registered use can not be determined based on this data material. In addition to the relevance of the journals, promotion of use at the institutions is probably a major factor influencing the
usage data.

*Interlibrary loan of Project MUSE journal articles*

Statistics on interlibrary loan (ILL) of *Project MUSE* journal articles during the 4th quarter of 1997 and 1998 are summarized in Table 4. ILL requests were registered for 18 *Project MUSE* titles in the 4th quarter of 1997, and for 22 titles during the same period in 1998. Both years, the most popular journals in ILL were *Modern Fiction Studies* and *World Politics* with 8 and 7 requests, respectively. A total of 29 different titles were used in ILL during both periods analyzed, which means that no such requests were registered for 17 of the *Project MUSE* titles. A total of 61 articles were requested during the 3-month study period before the consortial license (1997) and 54 during the same period after the license (1998). Only a minor reduction in the amount of interlibrary loan of *Project MUSE* titles within Sweden was thus seen as a result of the national license which made these titles available online at 25 academic institutions.

<table>
<thead>
<tr>
<th>Table 4: Interlibrary loan of <em>Project MUSE</em> articles, 4th quarter 1997 and 1998</th>
<th>1997</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of titles used in interlibrary loan</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Total number of articles requested</td>
<td>61</td>
<td>54</td>
</tr>
<tr>
<td>Requests from libraries within the Consortium</td>
<td>47</td>
<td>40</td>
</tr>
<tr>
<td>Percent of requests from the Consortium</td>
<td>78%</td>
<td>74%</td>
</tr>
<tr>
<td>Number of requests for electronic versions</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

From the ILL data collected for this study, information on which institutions that were requesting and delivering ILLs could be extracted. These data are summarized in Table 4. Before the national license, 78% of the ILL requests for *Project MUSE* journals came from institutions that later became subscribers through the Consortium. This could indicate a need for these journals at the institutions in question. Surprisingly, 74% of the requests during the same period in 1998 also came from institutions within the Consortium. Some of these requests may have been for articles in older issues that were not available online. Other articles requested via ILL in 1998 were possibly already available in electronic versions within the institution placing the order. Similar patterns of ILL were seen for the *IDEAL* journals. For further comments on this issue, see p. 57.

With one exception, all ILL requests were registered as loans of printed versions of these
journals. The exception was a request in 1997, when one institution already had access to all titles electronically via an individual license. However, the fact that none of the requests in 1998 were registered as loan of the electronic versions may be explained by a complex issue related to the registration of e-journals in the union catalog LIBRIS. At the time of this study only one of the member libraries had registered their holdings of Project MUSE titles in LIBRIS and in the local OPAC. Both printed and electronic versions of each title were registered. The advantage of this approach was that a search for the print version (print ISSN) of any Project MUSE title would give a positive result. Although the print publication was not available in the local collection, a link would guide the user on to the electronic version available through the Project MUSE license (Ylva Sköld, Luleå University Library, personal communication). However, this may have generated some misleading information in the ILL statistics registered in the LIBRIS database. For example, when the library processed an ILL request for the title Review of Higher Education this was registered in the statistics as delivery of an article from a Project MUSE title in print, although the library does not possess the print version of the title in question.
IDEAL: DESCRIPTION AND USAGE STUDY

In this chapter, a usage study of the IDEAL database is presented. The general outline is similar to the previous chapter presenting Project MUSE. However, the data available for the two databases were different, both in format and content. No journal-specific usage statistics were available for the IDEAL database. While journals in Project MUSE have different ISSN for printed and electronic versions, both formats of the IDEAL journals have the same ISSN. These differences are reflected in slightly different objectives for the IDEAL usage study compared to the objectives outlined for the Project MUSE study.

The IDEAL license agreement between Academic Press and the Swedish Consortium made these electronic resources available to subscribers from 1 July 1998 to 31 December 1999. Prior to this agreement, IDEAL journals could be accessed during a test period, from which usage statistics was also available. Usage statistics for the IDEAL database were provided by Academic Press (AP) on a monthly basis, and this made the analysis of time trends possible. To facilitate comparisons between usage of the IDEAL and the Project MUSE databases, however, the IDEAL study also focused on use during the 4th quarter of 1998. At this time, the IDEAL e-journals had been available to subscribing members via the national license between 3 and 6 months.

The objectives of the IDEAL usage study were:

- to investigate to what extent the IDEAL database is used at academic institutions within the Swedish Consortium
- to analyze IDEAL use based on:
  - the presence of print subscriptions within the member institutions
  - data on interlibrary loan of IDEAL titles prior to, and after the license agreement for:
    * IDEAL titles in print subscription within the Consortium (according to AP)
    * IDEAL titles not in subscription within the Consortium (according to AP)

Description of IDEAL

IDEAL is an acronym for the International Digital Electronic Access Library, a service through which journals from AP are made available online. The contents of IDEAL can only be accessed via a licensing arrangement called APPEAL, Academic Press Print and Electronic Access License. This arrangement is tailor-made for academic consortia, and is not open to
individual institutions. None of the members in the recently established Swedish Consortium thus had access to the *IDEAL* journals online before the national license. General information on *APPEAL* and *IDEAL* is available online from Academic Press (1998; 1999a).

*IDEAL* journals

A total of 175 scholarly journals from Academic Press were available online though *IDEAL* at the time of this study. The subject areas covered by *IDEAL* are reflected in the A & I services which registers these journals: ISI (several databases), *Medline, Mathematical Abstracts, Chemical Abstracts, Cambridge Scientific Abstracts*, and *BIOSIS* (Cassidy 1998). Online issues are generally included since 1996. The full-text contents of the journal articles are in PDF while article headers and abstracts are in HTML format. Non-licensees can access (browse and search) titles and abstracts, while access to the full-text material is restricted to subscribers through control of IP addresses.

In the documentation from Academic Press regarding the Swedish license, the *IDEAL* journals are divided into four categories reflecting the location of the servers: 1) U.K. titles in subscription in the Swedish Consortium, 2) U.K. titles not in subscription in the Swedish Consortium, 3) U.S. titles in subscription in the Swedish Consortium, and 4) U.S. titles not in subscription in the Swedish Consortium (BIBSAM 1998a, Schedule 1B). However, during the investigation of interlibrary loan of *IDEAL* titles in this study, it became evident that several of the titles listed as “not in subscription” were indeed in subscription in several member institutions in 1996, according to records in the LIBRIS union catalog. Out of the total 27 AP journals listed as “not in subscription” in the *APPEAL* documentation, 19 subscriptions were registered in 1996 in the libraries associated with institutions subscribing to *IDEAL* via the national license. The reason for this discrepancy is not clear. However, since the presence of print subscriptions influenced the price this should be investigated further prior to a renewal of the *APPEAL* license.

*License terms*

Both content and format of the *APPEAL* license have evolved through discussions between AP and library consortia since it was first launched in 1995. The negotiators representing NERL, one of the first consortia to access *IDEAL*, gave credit to AP for their willingness to discuss and adjust license terms (Okerson 1996b, online). The contract between AP and the Swedish Consortium contains a standard paragraph on confidentiality which prevents the sharing of
pricing information with other parties (BIBSAM 1998a, p. 6). ICOLC is not in favor of using such “non-disclosure language” in contracts (ICOLC 1998a, part III A 3). Details concerning pricing information in the contract will thus not be included here. However, issues concerning the structure of the pricing model and other license terms are discussed.

The APPEAL license made all 175 Academic Press journals available to all subscribing institutions in the Consortium, regardless of how many print subscriptions the members were holding at the time. The member institutions were free to cancel print subscriptions during the license period. However, the amount of money spent on print subscriptions by the individual members prior to the introduction of the electronic journals in IDEAL was a key factor for calculating the APPEAL license fee. For the Swedish Consortium, print subscriptions in 1996 and the list price for journals in 1998 were the factors providing the basis for calculating the fee for each of the member institutions. This is different from the Project MUSE license, which has no strings attached to the printed journals. A complex price model based on the presence of print subscriptions such as the APPEAL arrangement generates several questions: What will be the basis for setting the price at the time of license renewal, given that several members have cancelled print subscriptions? How about journals which were introduced after the base year 1996? For example, the journal Nitric oxide was launched in 1997, and 7 member institutions in the Swedish Consortium subscribed to this journal from the first issue. However, since this title was not in subscription in 1996 the Consortium was charged for this title according to the 1998 print price for journals in the category “not in subscription”.

A key issue in the negotiation of the APPEAL license for the Swedish Consortium was the principle stated by BIBSAM concerning interlibrary loan to publicly financed libraries (see p. 17). A special “Letter of Agreement”, in which the conditions for the use of IDEAL articles for this purpose was described, had to be amended to the contract for this license agreement to happen (BIBSAM 1998a).

The archival issue is also covered in the APPEAL license. AP state that they will provide “an archival digital copy on a mutually agreed medium, of those issues of Publications to which access has been provided during the term of this Agreement.” Alternatively, “ongoing online access” can be provided. This material will be available to the Consortium upon request for a “reasonable fee” (BIBSAM 1998a, p. 5).

No direct mention is made of usage statistics in the APPEAL license. A general term about analysis and evaluation is included: “Publisher, Consortium and Licensees agree to cooperate in the collection and sharing of information about the use of the online form of Publications
consistent with applicable privacy laws and the confidentiality requirements of both parties” (BIBSAM 1998a, p. 4).

Usage statistics

Monthly usage statistics for all IDEAL subscribers are available via a web site provided by Academic Press. Access to data for individual consortia is password protected, and the usage information is considered confidential (Cassidy 1998). For each subscribing institution, two parameters of use are specified: total logins and total downloads (i.e. articles in PDF). Usage is registered at both U.S. and U.K. servers. This implies that four parameters of use are specified each month for each institution: 1) U.K. logins, 2) U.S. logins, 3) U.K. downloads, and 4) U.S. downloads. In my opinion, this format is not particularly user friendly. If a member wishes to collect data on logins and downloads at the institution over a 6-month period, 24 different web pages must be accessed. Data from the two different servers for each month must then be combined to get any meaningful information on time trends and total institutional use.

For this study, usage data from June to December 1998 for the Swedish Consortium were collected from the Academic Press web site. Several institutions that were not IDEAL subscribers were listed in the tables. These were probably institutions that had access to this service during a test period but which never became subscribers via the national license. Naturally, no use was registered at these institutions, and their inclusion contributed to making the tables difficult to read. In addition, the identity of the members in the tables was hard to figure out. That “swd-skolvde” referred to Skövde University College could only be guessed after applying the principle of exclusion. Gotland University College is a subscriber via the national license, but this institution could not be identified among the members listed in the usage statistics.

No statistics were available for the usage of individual journal titles through the AP web site. Usage statistics from IDEAL could therefore not be used as an evaluation tool for AP journals in the same manner was described for the Project MUSE journals in the previous chapter. The usage statistics from IDEAL are at the present time far from meeting the standards suggested by ICOLC, both in format and content (see p. 25). However, more detailed usage statistics – including parameters on individual journals – can be accessed by requesting such information from Academic Press (Andy Crowther, Academic Press, personal communication).
Results of the IDEAL usage study

In this chapter, usage of the IDEAL database at institutions in the Swedish Consortium is presented. At the time of data collection for this study, monthly usage statistics were available from June to December 1998, and time trend data for total use within the Consortium is presented for this period. Monthly IDEAL usage at individual institutions were combined for October, November, and December 1998 to facilitate comparisons with the data available from Project MUSE. Usage data are presented in graphs and summary tables. These are accompanied by short discussions highlighting specific issues related to the data in question. A general discussion of the findings follows in the next chapter.

A total of 29 academic institutions in the categories Universities, Special Institutes and University Colleges were subscribing to IDEAL via the national license (see p. 1 for member categories). In addition, 2 Other Colleges and 8 Research Libraries were also subscribers. Usage statistics for all 39 members are included in the presentation of time trend data for the whole Consortium, while the analysis of use at individual institutions includes the 29 academic institutions only.

Usage within the whole Consortium

The total number of logins and downloads of PDF articles for all IDEAL subscribers in the Swedish Consortium are presented in Figure 3. Data from U.K. and U.S. servers are combined to give total monthly figures. The data for June 1998 represents usage during a test period prior to the license agreement. An increasing trend is evident during the first few months. This increase then levels off, and the use stabilizes around 9,000 logins and 5,000 – 6,000 downloads per month. The decrease in use seen for the month of December is likely to be related to reduced level of activities in academic institutions during the holiday season.

Usage within individual institutions

IDEAL usage during the 4th quarter of 1998 at 29 academic institutions in the Swedish Consortium is listed in Table 5. The institutions are listed according to the of number of
articles downloaded during the 3-month study period. In addition to the total number of downloads and logins, the download/login ratios, downloads normalized to the number of students registered at each institution, and the number of print subscriptions held by the institutions are parameters included in Table 5.

A total of 24,688 logins and 16,459 PDF downloads were registered. The level of use at individual institutions ranged from 3,759 to 22 logins, and from 3,293 to 9 downloads. Median values for the whole group of academic institutions were 168 downloads and 313 logins during the 4th quarter of 1998, implying that one article was accessed for every two login sessions (median download/login ratio 0.52). However, there was a considerable range in download/login ratios for these institutions (0.12 – 0.88), indicating different patterns of user behavior. High ratios indicate that the reading of articles is an important end point to the user, while low ratios suggest that IDEAL is used primarily for searching and browsing. In general, high download/login ratios were found at institutions with the highest level of overall use. Alan Dawson used similar parameters to analyze user behavior based on usage statistics from the BUBL journal service, see p. 52.

Several of the so-called Special Institutes, which are universities with focus on special subject areas, were among the major users of the IDEAL database. These institutions are all

**Figure 3:** IDEAL usage in the Swedish Consortium June – December 1998
Table 5: IDEAL usage at academic institutions in the Swedish Consortium, 4<sup>th</sup> quarter 1998

<table>
<thead>
<tr>
<th>Institution</th>
<th>Downloads</th>
<th>Logins</th>
<th>Logins</th>
<th>Students</th>
<th>Print Sub 1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karolinska Inst (Medicine)</td>
<td>3 293</td>
<td>3 759</td>
<td>0.88</td>
<td>1 104</td>
<td>37</td>
</tr>
<tr>
<td>Lunds Univ.</td>
<td>2 021</td>
<td>3 437</td>
<td>0.59</td>
<td>82</td>
<td>95</td>
</tr>
<tr>
<td>Uppsala Univ.</td>
<td>1 883</td>
<td>2 511</td>
<td>0.75</td>
<td>99</td>
<td>84</td>
</tr>
<tr>
<td>Göteborgs Univ.</td>
<td>1 349</td>
<td>2 239</td>
<td>0.60</td>
<td>60</td>
<td>19</td>
</tr>
<tr>
<td>Stockholms Univ.</td>
<td>1 200</td>
<td>1 561</td>
<td>0.77</td>
<td>50</td>
<td>76</td>
</tr>
<tr>
<td>SLU (Agriculture)</td>
<td>1 191</td>
<td>1 705</td>
<td>0.70</td>
<td>414</td>
<td>40</td>
</tr>
<tr>
<td>Umeå Univ.</td>
<td>1 160</td>
<td>1 462</td>
<td>0.79</td>
<td>80</td>
<td>4</td>
</tr>
<tr>
<td>Linköpings Univ.</td>
<td>1 039</td>
<td>1 697</td>
<td>0.61</td>
<td>74</td>
<td>29</td>
</tr>
<tr>
<td>Chalmers (Technology)</td>
<td>728</td>
<td>1 132</td>
<td>0.64</td>
<td>100</td>
<td>42</td>
</tr>
<tr>
<td>KTH (Technology)</td>
<td>665</td>
<td>1 013</td>
<td>0.66</td>
<td>66</td>
<td>30</td>
</tr>
<tr>
<td>Kalmar</td>
<td>444</td>
<td>525</td>
<td>0.85</td>
<td>122</td>
<td>2</td>
</tr>
<tr>
<td>Jönköping</td>
<td>222</td>
<td>446</td>
<td>0.50</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>Luleå Univ.</td>
<td>215</td>
<td>457</td>
<td>0.47</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>Anonymous 3</td>
<td>169</td>
<td>302</td>
<td>0.56</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Karlstad</td>
<td>166</td>
<td>312</td>
<td>0.53</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>Mälardalen</td>
<td>122</td>
<td>313</td>
<td>0.39</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Borås</td>
<td>102</td>
<td>268</td>
<td>0.38</td>
<td>34</td>
<td>1</td>
</tr>
<tr>
<td>Växjö</td>
<td>97</td>
<td>140</td>
<td>0.69</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Dalarna</td>
<td>70</td>
<td>284</td>
<td>0.25</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Halmstad</td>
<td>68</td>
<td>174</td>
<td>0.39</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Mittåsöskolan</td>
<td>65</td>
<td>199</td>
<td>0.33</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Anonymous 3</td>
<td>57</td>
<td>174</td>
<td>0.33</td>
<td>26</td>
<td>1</td>
</tr>
<tr>
<td>Södertörn 4</td>
<td>38</td>
<td>74</td>
<td>0.51</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Skövde</td>
<td>33</td>
<td>274</td>
<td>0.12</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>Kristianstad</td>
<td>28</td>
<td>75</td>
<td>0.37</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Trollhättan-Uddevalla</td>
<td>13</td>
<td>75</td>
<td>0.17</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Malmö 4</td>
<td>12</td>
<td>58</td>
<td>0.21</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Gävle</td>
<td>9</td>
<td>22</td>
<td>0.41</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Gotland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (N=29)</td>
<td>16 459</td>
<td>24 688</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>168</td>
<td>313</td>
<td>0.52</td>
<td>29</td>
<td>1</td>
</tr>
</tbody>
</table>

1 sort order: number of downloads 4<sup>th</sup> quarter 1998
2 estimate of student numbers used in 5, 4 000 to Malmö (F. Lettenström, BIBSAM)
3 see chapter “Methods: Data collection”
4 new college, student number estimated (F. Lettenström, BIBSAM)
5 (total number of articles accessed 4<sup>th</sup> quarter 1998 / number of students 6 1997) * 1000
6 source: Högskoleverket 1998
7 print subscriptions held by the institutions according to Academic Press (BIBSAM 1998a, Schedule 1B)
8 no usage statistics available
within the STM fields (science, technology, medicine), which is also the focus of most IDEAL journals. Compared to the large Swedish universities which have around 20 000 students, relatively few students are registered at these Special Institutes: KTH (Technology) have approximately 10 000, Chalmers (Technology) 7 300, and Karolinska Institutet (Medicine) and SLU (Agriculture) both a little less than 3 000 students registered (Högskoleverket 1998). This is reflected in very high levels of IDEAL use at some of these institutions when the number of downloads is normalized to student numbers (Table 5, see also discussion on normalization to student numbers in the Project MUSE study, p. 37). Karolinska Institutet had by far the highest number of both downloads and logins. This member has more than twice the number of PDF downloads registered per student than SLU which followed as number two. Kalmar University College had a high level of use when normalized to student numbers, and also a high download/login ratio resembling the usage pattern at Karolinska Institutet.

Institutional usage and print subscriptions

As discussed when introducing list checking as an evaluation method, the presence of print subscriptions may be an indicator of relevance of the journals in the full-text database to individual institutions. The number of subscriptions to IDEAL journals held by the institutions in 1996 are listed in the last column of Table 5. This information is based on the documentation following the license agreement between AP and the Swedish Consortium (BIBSAM 1998a, Schedule 1B). The fact that some institutions according to the LIBRIS union catalog had additional subscriptions is not taken into account here (see discussion under “License terms” in this chapter). These numbers showing print subscriptions to Academic Press journals can illustrate the differences in access to information at large universities and small university colleges in Sweden, an issue which was mentioned as a motivation factor for establishing the Swedish Consortium and providing national licenses for full-text databases. Of the 29 academic institutions in the Consortium which subscribed to the IDEAL database, 19 had 0–4 of the 175 journals in print subscription. Some of the large universities had more than 70 of these titles in print. The usage statistics showed that a considerable number of articles were downloaded from IDEAL at institutions where only a few or none of the journals from Academic Press were available in print.

Usage of the IDEAL database at individual institutions in relation to the number of print subscriptions held are illustrated in Figure 4. Members with high level of IDEAL use and/or
many print subscriptions are identified. Many of the institutions with only a few titles in print and also low level of IDEAL use aggregate in the lower left corner of this illustration. The large universities with many print subscriptions were among the most frequent users of IDEAL. The level of use at Karolinska Institutet was very high compared to usage at other institutions in the Consortium, also in respect to the number of print subscriptions held. In this context it is worth mentioning that this institute and associated libraries had the highest number of print subscriptions (10) which were not registered in the documentation from Academic Press. These additional subscriptions are not included in Figure 4.

**Interlibrary loan of IDEAL journal articles**

Interlibrary loan (ILL) of IDEAL journal titles during the 4th quarter of 1997 and 1998 are summarized in Table 6 and Table 7. All requests registered in the LIBRIS database are included in this material. This implies that institutions and associated libraries which are not members of the Swedish Consortium are represented, both as requesting and lending libraries. Among these are also libraries in other Nordic countries. Two categories of titles – *in print subscription* and *not in print subscription* – appear in the tables, reflecting print subscriptions registered/not registered in member institutions in the Swedish Consortium at the time of the
license agreement. These categories were specified in the ILL search query to identify IDEAL titles that were not readily available for users in academic institutions in Sweden prior to the national license. Another reason for this division was to be able to document to what extent the electronic versions of IDEAL titles were used in ILL in the Swedish Consortium. The provision of such usage data was a condition set by AP in order to allow ILL (BIBSAM 1998a, “Letter of Agreement…”). IDEAL journals have similar ISSN for printed and electronic versions. The format of the journals used in ILL can therefore not be derived from the data collected, other than through documentation of requests processed by libraries which do not have the printed version. However, several inconsistencies were discovered between the subscription information in the AP documentation (BIBSAM 1998a, Schedule 1B) and in the LIBRIS union catalog, some of which are noted below.

Table 6 summarizes the use of IDEAL titles in ILL during the 4th quarter of 1997 and 1998. Out of the 175 IDEAL journals, articles were requested from 133 titles in 1997 and from 138 titles in 1998. Experimental Eye Research was in 1997 the most frequently used journal with 55 articles requested. Only 15 requests were registered in 1998 for this journal, maybe indicating that some of the need for this title was met by the online version. In 1998 Journal of Colloid and Interface Science was the most frequently used journal with 62 ILL requests. This title was also popular in 1997, when it was ranked as number 3 with 47 requests registered. Another journal frequently used in ILL was Biochemical and Biophysical Research Communications, which both years ranked second with 49 and 54 ILL requests, respectively.

In the category not in print subscription the journal Appetite was most frequently requested both years, with 20 and 37 registered ILLs, respectively. Although not registered in the AP documentation, this title was found in print in both in the Karolinska Institutet Library and the branch library Novumbiblioteket, according to the union catalog LIBRIS. All ILL requests for the journal Appetite were processed by these two libraries both years. The last column in Table 6 shows that many of the IDEAL titles were used only a few times in ILL during the two study periods. Approximately 50% of the titles with registered ILLs had ≤ 5 such requests. In addition to these journals with little use comes about 40 IDEAL titles per study period without any ILL requests registered. However, different titles were included in this no-use group in 1997 and 1998, and only 13 of the 175 IDEAL journals were not used for ILL in either of the periods analyzed.

Of the 22 different IDEAL titles in the category not in print subscription with ILL
Table 6: Interlibrary loan of IDEAL titles in Sweden, 4th quarter 1997 and 1998

<table>
<thead>
<tr>
<th>Category of journals</th>
<th>Year</th>
<th>Number of titles used</th>
<th>Max requests per title</th>
<th>Number of titles with 5 or less requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titles in print subscription</td>
<td>1997</td>
<td>115</td>
<td>55</td>
<td>53</td>
</tr>
<tr>
<td>Titles not in print subscription</td>
<td>1997</td>
<td>18</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>1997</td>
<td>133</td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>Titles in print subscription</td>
<td>1998</td>
<td>122</td>
<td>62</td>
<td>59</td>
</tr>
<tr>
<td>Titles not in print subscription</td>
<td>1998</td>
<td>16</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>1998</td>
<td>138</td>
<td></td>
<td>68</td>
</tr>
</tbody>
</table>

Among IDEAL subscribers in the Consortium (1996), according to Academic Press (BIBSAM 1998a)

requests registered in either 1997 or 1998, only 3 were in fact not found in print in the member libraries. The most popular of these was Journal of Adolescence, with 17 and 28 requests in 1997 and 1998, respectively. In 1997, all requests for this title were processed by Danish or Norwegian libraries. Nordic libraries were also dominating as lending libraries in the 1998 data. However, 3 of the 28 requests for this title were processed by Luleå University Library, which at an early stage registered their IDEAL titles in LIBRIS and by doing so became a popular lending library.

Table 7: Requests for interlibrary loan of IDEAL titles by institutions in the Swedish Consortium, 4th quarter 1997 and 1998

<table>
<thead>
<tr>
<th>Category of journals</th>
<th>Year</th>
<th>Total ILL requests</th>
<th>Request from Consortium</th>
<th>% Requests from Consortium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titles in print subscription</td>
<td>1997</td>
<td>1 002</td>
<td>598</td>
<td>60</td>
</tr>
<tr>
<td>Titles not in print subscription</td>
<td>1997</td>
<td>116</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>Total</td>
<td>1997</td>
<td>1 118</td>
<td>698</td>
<td>62</td>
</tr>
<tr>
<td>Titles in print subscription</td>
<td>1998</td>
<td>1 054</td>
<td>575</td>
<td>55</td>
</tr>
<tr>
<td>Titles not in print subscription</td>
<td>1998</td>
<td>121</td>
<td>87</td>
<td>72</td>
</tr>
<tr>
<td>Total</td>
<td>1998</td>
<td>1 175</td>
<td>662</td>
<td>56</td>
</tr>
</tbody>
</table>

Among IDEAL subscribers in the Consortium (1996), according to Academic Press (BIBSAM 1998a)

The total number of articles requested in ILL from IDEAL journals via LIBRIS WebSearch were 1 118 during the 4th quarter 1997 and 1 175 during the same period in 1998 (Table 7). No reduction in ILLs was apparent between 1997 and 1998, although the national license made these titles available online at 29 academic institutions in the Swedish Consortium in the summer of 1998. A high percentage of the requests came from libraries which are now
subscribing to *IDEAL* via the national license. The fact that 698 requests for articles (62 %) came from these institutions in 1997 indicates a need for titles which were not available in print. (Table 5 showed that 19 of the 29 academic institutions in the Consortium had ≤ 4 *IDEAL* titles in subscriptions in 1996.) However, the data in Table 7 also show that libraries in the Consortium continued to request articles from *IDEAL* journals although these journals now are available online within their own institutions. Some of these requests may be for articles published in older issues of these journals which are not available online. A total of 662 articles (56 % of total ILL requests for *IDEAL* journals) were requested from *IDEAL* subscribers during the 4th quarter of 1998. This is similar to what was found in the *Project MUSE* study (see p. 37 and p. 57). However, the magnitude of the requests for *IDEAL* articles make these results, in terms of waste of resources, even more alarming.
DISCUSSION

Overall usage of Project MUSE and IDEAL databases

The usage data presented in this study seem low, considering that approximately 200 000 students had access to Project MUSE and about 224 000 to IDEAL during the 3-month study period. In addition to students, researchers and other faculty at the subscribing institutions are important user groups. I believe the potential for increased use is high. Comparisons of the level of use between this and other consortia of similar size would give valuable information about the magnitude of this potential. ICOLC suggests that the information providers supply such comparative statistics in order to give consortia a context in which to analyze usage data (see p. 25).

The usage of electronic journals in full-text databases is influenced by many factors. The relevance of the journals to the end users is of course important. This is a factor which I believe is relatively constant, i.e. the titles are of interest or not of interest to major user groups at academic institutions. If the journals in a full-text database cover subject areas that are peripheral to users at an institution, or if the quality of the journals is low, promotion of use or other related efforts would probably be a waste of time and resources. However, if the titles included in full-text databases are relevant to large user groups, but the statistics still show that few articles are accessed, promotion of use and development of more user friendly interfaces are examples of efforts which would probably have positive effects on the usage statistics. Many users are at this stage unfamiliar with electronic journals and full-text databases. Johansson & Lundin studied students’ perceptions of their own need for – and knowledge about – full-text databases at Uppsala University (1999, online p. 34). Their results revealed that out of the 63.5 % of those who answered that they had a need for full-text databases, only 17.2 % knew how to use them. An interesting question would be how many of the 24.9 % who answered that they did not have a need for full-text databases, nor did they know how to use them, could benefit from access to the information contained in such databases in their studies. With the increasing number of full-text databases available and subject areas covered, the group of university students who consider that they have no need for such products is probably shrinking. Major efforts are needed to spread information about both the existence and use of these products at the academic institutions. The Café Jus project highlighted the importance of
user training (see p. 24). Making full-text databases available via hypertext links at the library’s home page and then expect users to both discover them and to figure out how to use them is not a recommended approach.

With only one quarterly summary of usage statistics available, time trends for usage of the Project MUSE database in the Swedish Consortium could not be analyzed. Monthly figures for the IDEAL database showed an increasing trend for both usage parameters provided during the first months of use in the Swedish Consortium. Time trend data can be informative in many contexts. If an institution makes special efforts to promote use through adding or restructuring links at their web site, informational campaigns, or user training, any effects can be reflected in the usage statistics as differences in the level of use before and after these efforts. However, many other factors which can be expected to affect the level of use must also be considered when evaluating the impact of an informational campaign. More titles may be added to the full-text databases. Additional A & I services may start registering the titles, or new functions providing direct links from such services to the electronic journals may be launched. The more gateways leading to the information contained in the full-text databases, the better are the chances that potential users will find it.

Analysis of user behavior

The number of articles accessed was the usage parameter selected for further investigation in the Project MUSE study. However, four additional parameters were included in the usage statistics: images, other, TOC, and total. How much the database and the individual journals were used but also in what way they were used could therefore have been investigated based on the data provided. For example, high scores on TOC combined with few articles accessed could indicate that browsing was the dominating user activity. A high number of articles accessed combined with low scores on other usage parameters could indicate that reading articles was the main interest of the users. It may also indicate that the users knew what they were looking for, and went directly to a specific article. Such analysis of usage statistics can contribute to our understanding of how users access the material contained in full-text databases.

Alan Dawson defined a “search-browse ratio (SBR)” based on three kinds of user activities – browsing, reading and searching – derived from available usage statistics from the BUBL Journals service. He then used this ratio as an indicator of how different e-journal titles
were used. Titles which were used primarily for research and reference were identified, as were titles for which a more general interest in the subject area was indicated by the usage statistics. Dawson concluded that such usage parameters offer valuable alternatives to the total access counts in the assessment of a journal’s value to users (Dawson 1999, p. 37). Such analysis of user behavior is especially appropriate when the journals are included in databases with several options for searching and browsing, functions which are not included in the Project MUSE and IDEAL databases.

Although no journal-specific usage data were available for the IDEAL database, the total number of downloads and logins could be used to illustrate different usage patterns at the member institutions. The high download/login ratios at some institutions indicate that reading the full-text article is an important end point for the users. It may also indicate that the user often go directly to the article, maybe after having found references to the publications elsewhere. Medline and BIOSIS are among the A & I services with agreements for linking to IDEAL. These are services which probably funnel many students and researchers within the fields of medical science to journals published by Academic Press. The downloading of many articles during one session is of course another kind of user behavior which would give high download/login ratios. One of the Research Libraries in the Consortium had download/login ratio of 1.8 during the period investigated in this study, illustrating this usage pattern.

Evaluation based on usage statistics

Among the questions formulated at the beginning of this study were: Can usage statistics reveal information about the relevance of full-text databases? How many of the electronic journals, that are made available through package deals, are used at subscribing institutions? Other relevant questions in the evaluation process may be: Did the Swedish Consortium as a whole, or the individual members, get value-for-money by subscribing to the Project MUSE and IDEAL databases? Did these electronic products make a significant contribution to meeting the need for information at these academic institutions? The questions are related, and it becomes clear that defining user needs is a prerequisite for evaluating whether any need had been met. However, when discussing the application of usage statistics as an evaluation tool the assumption is that use is a surrogate measure of need (see p. 22). The use of interlibrary loan data to assess need is discussed in the next sections of this chapter.

No analysis of usage in relation to the license fee paid by the individual institutions was
done in this study. The value-for-money question can thus not be answered directly. The cost for several of the full-text databases introduced in Sweden via national licenses — including *Project MUSE* and *IDEAL* — were subsidized by BIBSAM / The National Library of Sweden during the initial license period. This was done to facilitate the transition from printed to electronic journals. The usage study presented here was conducted during an early phase of introducing electronic journals in academic institutions in Sweden, and the data thus do not express the expected normal level of use of these databases at the member institutions. The results should be interpreted and used within this frame of reference. In this context, it is also important to consider that one of the major aims of the national licenses was to provide a certain level of access to information for students affiliated with academic institutions all over Sweden. Similar issues were discussed in a study describing and comparing several consortia in the United States (Potter 1997, online). Increased access to electronic resources and resource sharing, rather than possible savings, were the emphasis of several of the statewide consortia described. The true value of having access to electronic journals in full-text for distance learners or for students in small university colleges with limited budgets and few titles in subscription is difficult to assess.

*Project MUSE*

The results of the *Project MUSE* usage study showed that journal articles from all 46 titles included in this database were accessed by the Consortium during the 3-month study period in the fall of 1998. Only 7 of the 44 *Project MUSE* journals which were available in print at the time of this study were in subscription in more than 5 of the member institutions. Of the remaining 37 titles, 19 were found in one institution only or not at all. If the presence of print subscriptions within the Consortium was used as a form of list checking to indicate relevance, *Project MUSE* would get a low score. However, the usage analysis showed that many of these journals which were only available in few – or none – of the academic libraries in Sweden were popular among e-journal users in the Consortium. Several of these e-journals were used by 8–10 different institutions, indicating an interest level which was comparable to the journals with the highest number of print subscriptions. Based on this analysis, I conclude that there is a need in the Swedish Consortium for the journals which are included in the *Project MUSE* database. Since many of these titles were previously available to users in a few of the member institutions only, the national license has made a positive contribution in terms of access to information in Swedish academic institutions.
The analysis also revealed that the usage of Project MUSE was low at some of the member institutions during the 3-month period investigated. As mentioned above, this study was conducted during an early stage of introducing electronic journals and the data should therefore be interpreted with care. Whether the low level of use at some institutions indicates that the journals in this database are of little interest to their users is not investigated further. However, with the clear focus of the Project MUSE database on humanities and social sciences, less use at institutions which primarily offer programs in STM fields can be expected. Project MUSE permits subscriptions of single titles for individual institutions (not consortia). This alternative may be worth considering for institutions at which there is an interest in only a few of the journals included in this database.

**IDEAL**

No data were available at the time of this study for the usage of individual journals in the IDEAL database at the Academic Press web site presenting usage parameters for the Swedish Consortium. The kind of information that could be extracted from the IDEAL statistics was therefore much more limited than for the Project MUSE database.

Monthly usage data were available for the total Consortium and individual institutions and the development of usage of IDEAL in terms of total logins and articles downloaded could be investigated. An increasing trend indicated that more and more users at institutions affiliated within the Swedish Consortium discovered this electronic resource during the fall of 1998.

Information on print subscriptions provided a context for analyzing and evaluating the usage data. A mixed picture emerged when using the presence of print subscriptions as an evaluation tool to indicate relevance of the IDEAL database to the Swedish Consortium. The large universities had many of the IDEAL titles in print, while a majority of the smaller academic institutions in the Consortium had few or no print subscriptions. Most of the 175 IDEAL titles were found in print within the combined pool of journal subscriptions in the total Consortium, indicating that this database is relevant to users at Swedish academic institutions. Similar to the findings in the Project MUSE usage study, the IDEAL data showed that a significant number of articles were downloaded by users at institutions which did not have access to these titles prior to the national license. I therefore find it reasonable to conclude that the national license has made a significant contribution to meeting a need for the information contained in the IDEAL database at academic institutions in Sweden.

Analysis of usage statistics could not reveal how many of the 175 IDEAL journals that
were accessed by users in the Swedish Consortium. Conversely, this evaluation tool could not be applied to assess the need for – or relevance of – individual journals contained in this database to users at academic institutions in Sweden.

Evaluation based on interlibrary loan analysis

Interlibrary loan (ILL) analysis was used in this study as an evaluation tool to help identify any need for journal titles included in the Project MUSE and IDEAL databases at member institutions in the Swedish Consortium. ILL requests made prior to the national license could identify titles which were relevant to Swedish academic institutions. Similarly, an analysis of ILL requests after the national license had made Project MUSE and IDEAL available to subscribing institutions within the Swedish Consortium could elucidate whether the license had contributed to meeting any need for these titles. The parameter of most interest when using this material to document need was thus the requests in 1997 – before the national license – from libraries which later became members in the Consortium.

Project MUSE

The analysis showed that 18 of the 46 Project MUSE titles were used in ILL in Sweden during the 4th quarter of 1997. Libraries which later became members in the Consortium requested 78% of the 61 articles registered. The overall number of ILLs was thus small, and the low number of journal titles used indicated only a moderate interest in the contents of the Project MUSE database within the Swedish Consortium. What is a high/low level of interest? Only in a comparison between the Project MUSE and other alternative databases which could provide information within similar subject areas can these numbers be put in an appropriate context. During the same period in 1998, 11 additional titles were used in ILL, raising the total number of titles used both years to 29 out of the total 46. The fact that 74% of the requests came from libraries within the Consortium in 1998 highlights a problem which is discussed in more detail later in this chapter.

IDEAL

The analysis showed that 133 of the 175 IDEAL journals were used in ILL in Sweden during the 4th quarter 1997. A total of 1 118 requests for articles were registered. Out of these, 698 requests (62%) were from libraries in the Consortium. This analysis thus indicates that there was a considerable interest in the IDEAL journals, and that a national license could be a
valuable contribution to meeting the need for information in the Swedish Consortium. However, almost 40% of the titles had ≤ 5 ILL requests and 42 titles had no such requests at all. Although the study period was short and the results not necessarily representative of the general need for these titles, they point to the fact that some of the titles included in this database were peripheral to users in Sweden. When including the data from the same period in 1998, more titles were added to the list of journals used in interlibrary loan. Only 13 of the 175 IDEAL journals had not been used in either of the years analyzed.

*Interlibrary loan requested from libraries with online access to journals*

The 1998 interlibrary loan data were included to investigate whether the national licenses had contributed to meeting a need for the titles included in the Project MUSE and IDEAL databases in Sweden. Through providing access to titles needed, reductions of the number of articles requested in interlibrary loan from these journals would be expected. However, instead of documenting any such reduction, this analysis revealed that the libraries within the Consortium continued to request these journals in interlibrary loan on a large scale. Some of these requests probably concerns articles published in older issues that are not available online. Generally, the IDEAL journals are online from the 1996 issues. The Project MUSE journals are more variable with some titles available online from 1990 and others just recently launched. Most of the requests were processed by the large university libraries (as lending libraries) which had the printed version of these journals in subscription. Many different members within the Consortium requested Project MUSE and IDEAL titles in 1998, indicating that the problem was general rather than centered around a few member libraries. Only a short discussion addressing this problem is included here. The data provided in this report will hopefully stimulate further discussions and suggestions on how to stop the waste of resources in this exchange of information already available within the institutions.

Only a few institutions within the Consortium had registered their holdings of Project MUSE and IDEAL electronic journals in their local OPACs and in the LIBRIS union catalog at the time of this study. This is probably a major factor in explaining the extraneous ILLs. The number of electronic journals available through full-text databases in academic libraries in Sweden has increased dramatically during the last year. If the journals are not registered in the catalogs, how can the reference librarians who get requests for ILL from a customer know that these resources are available locally? Librarians can no longer depend on tacit knowledge of the local collection. Some libraries have included all the electronic journal titles which are
available in full-text in alphabetical lists at their web site. Routine checking of such a list before placing an ILL request could be a simple way of reducing the magnitude of this problem. Another solution would be to put some kind of filter in the LIBRIS WebSearch service to prevent the ordering of ILLs from libraries that have access to the titles in question through national licenses.

Even as more of the member libraries register their e-journals in the LIBRIS union catalog and in local OPACs, several problematic issues remain. When accessing e-journals as package deals through consortial licenses, many of the titles included may be considered peripheral to users at the individual institutions. Duranceau and coworkers discussed how the function of the local catalog changes when electronic resources are added to the material available to library users: “[…] we do not want the OPAC to become so inclusive as to be uselessly generic”, the e-journal subgroup at MIT stated (Duranceau et al., 1996, online). The policy in the MIT libraries is that the catalog should remain an access tool to resources evaluated and selected by librarians. Including all journal titles which are available online in library catalogs is thus not a preferred solution to the above mentioned problem.

Current initiatives and issues for further studies

This study has elucidated some questions related to the usage of full-text databases at academic institutions in Sweden. New question, ideas, problems, and solutions constantly emerge within this rapidly changing field. Librarians, information providers, and e-journal users are all at a steep part of the learning curve. Some issues for further studies are addressed in the questions below.

Questions to librarians: Which strategies have been selected for presentation of e-journals to the users? To what extent have additional information material and services that are available from the database providers been requested by institutions in the Swedish Consortium? Have policies been developed for the handling of e-journals, including issues such as purchasing and cataloging? Are the libraries canceling their print subscriptions, or are concerns related to archiving and perpetual access preventing the transition from printed to electronic journal formats?

Questions to information providers: Will more flexible solutions for access to electronic journals be developed, i.e. possibilities for access to single titles for individual subscribers, not only all-inclusive and expensive package deal arrangements? Will the development of high-
quality usage statistics be prioritized?

Questions to e-journal users: Are attitudes towards electronic journals changing as the full-text databases become more inclusive and more user friendly?

Several initiatives related to e-journals in Swedish academic libraries have recently been launched. For example, the library at the University College of Borås is currently developing policies for e-journals in which several of the above mentioned questions are addressed. At the Karolinska Institutet Library – the National Resource Library in medical science, dental science, and nursing – a one-year project financed by BIBSAM will address issues related to e-journals within the medical fields. Hopefully, other National Resource Libraries will take on similar tasks within other subject areas.
SUMMARY

National licenses for full-text databases have significantly increased the number of electronic journals available in academic institutions in Sweden. The databases *Project MUSE* from Johns Hopkins University Press and *IDEAL* from Academic Press became available to members in the Swedish Consortium of academic, research, and academic institutions in the summer of 1998. *Project MUSE* contributed 46 scholarly journals within the humanities and social sciences and *IDEAL* 175 titles within the STM fields.

In this study, usage of the *Project MUSE* and *IDEAL* databases at academic institutions in the Swedish consortium during the 4th quarter of 1998 were investigated. In addition to usage statistics available from the database providers, the presence of print subscriptions in member institutions and interlibrary loan requests for titles contained in the two databases were analyzed. The overall objective was to apply different evaluation tools to assess the relevance of these full-text databases, i.e. the need for the journals contained in *Project MUSE* and *IDEAL*, at academic institutions in Sweden.

The usage study showed that 25 academic institutions in the Consortium had accessed 1,688 articles from *Project MUSE* during the 3-month study period. All 46 journals contained in this database had been used by the whole Consortium, but none of the institutions had used all titles. Usage was also analyzed in relation to the presence of print subscriptions available in Sweden and at the subscribing member institutions. The results showed that many of the *Project MUSE* journals which were not readily available prior to the national license were popular among e-journal users. This indicates that the national license has contributed to meeting a need for the journals included in the *Project MUSE* database at Swedish academic institutions. However, only 61 articles from 18 different *Project MUSE* journals had been requested in interlibrary loan via LIBRIS WebSearch during the 4th quarter of 1997. When using the presence of print subscriptions and interlibrary loan analysis as evaluation tools, only a moderate interest in the *Project MUSE* journals in Sweden was documented.

Analysis of monthly statistics showed that *IDEAL* usage in the Consortium increased during the fall of 1998, from approximately 4,000 logins in July to 9,000 in September — November. No statistics were available for the usage of individual journals, and the analysis could not reveal how many of the 175 titles contained in the *IDEAL* database which had been accessed by the total Consortium or by individual institutions. Usage statistics in the format provided by Academic Press at the time of this study thus could not be applied as a tool to
assess the need for — and relevance of — the individual IDEAL journals to the Consortium or to individual institutions. The 29 academic institutions included in this study had downloaded a total of 16,459 articles during the 4th quarter of 1998. The differences in access to information at large universities and small university colleges in Sweden could be illustrated by the presence of print subscriptions of IDEAL titles; 19 of the 29 academic institutions in the Consortium had 0 – 4 of the 175 journals in subscription while some of the large universities had more than 70 of these titles. The usage statistics showed that a considerable number of articles had been accessed by users at the small institutions with few or none of the IDEAL titles in print. The interlibrary loan analysis showed that 1,118 articles from 133 different IDEAL titles were requested via LIBRIS WebSearch during the 4th quarter of 1997, indicating a considerable interest in these journals in Sweden. Based on these data I find it reasonable to conclude that the national license has made a significant contribution to meeting a need for IDEAL journals at Swedish academic institutions.
LITERATURE CITED

Unpublished material

BIBSAM, Royal Library, Stockholm:


Personal communications:

Sköld, Ylva, Luleå University Library. Telephone call February 1999 and e-mail 11 April 1999.

In the author’s possession (Institutionen för kultur- & biblioteksstudier, Uppsala universitet):


Responses to “Forespørsel om tillatelse til bruk av statistikk fra AP, Johns Hopkins UP og Ebsco”; 26 forms and 3 e-mails addressed to the author.
Published material, online


BIBSAM (1999), “BIBSAM’s fundamental position on the procurement of databases”.

   http://www.eb.co.uk (98/10/27).


CNI; Coalition for Networked Information (1997), “CONTU guidelines on photocopying under interlibrary loan arrangements”.
   http://www.cni.org/docs/infopools/CONTU.html (99/03/16).


Harnad, Stevan (1990), “Scholarly skywriting and the prepublication continuum of scientific inquiry”.
   http://www.cogsci.soton.ac.uk/~ha...s/Harnad/harnad90.skywriting.html (98/10/27).


   http://www.library.yale.edu/consortia/elsevier.htm (10/18/98).


Published material, print


Forespørsel om tillatelse til bruk av statistikk fra AP, Johns Hopkins UP og Ebsco

Til administrativ / juridisk kontaktperson for elektroniske fulltekstdatabaser ved


Jeg vil med dette be om tillatelse til å benytte brukerstatistikken fra AP, Johns Hopkins UP og Ebsco i min magisteroppgave.

Vennligst sett kryss: Ja Nei

Academic Press □ □
Johns Hopkins UP □ □
EbscoHost □ □

Institusjonens identitet kan oppgis i oppgaven □ □

Underskrift ______________________________
Navn

Vennligst returner innen 99.02.15 til:
Kari Stange
c/o BIBSAM
Box 5039
102 41 Stockholm

- eller gi beskjed
pr. e-post: Kari.Stange@bibks.uu.se
Telefon: (08) 463 4263
Institutionen för kultur- och biblioteksstudier
Biblioteks- och informationsvetenskap
Trädgårdsgatan 14
753 09 Uppsala
Faxnr: 018-471 2305

Du finner även titlarna på uppsatser skrivna inom
ämnet Biblioteks- och informationsvetenskap
(fr. o m vårterminen 1998 även abstracts)
på vår hemsida: http://www.bibks.uu.se

För beställning av uppsatser, kontakta
Ingrid Söderström, tel: 018-471 7976
e-post: Ingrid.Soderstrom@bibks.uu.se