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### **Counter and the development of meaningful measures**

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### **Abstract:**

*The first COUNTER Code of Practice, covering journals and databases, was published in January 2003. Since then it has been widely implemented by publishers and widely used by librarians. Its practical application has been demonstrated most recently in a JISC-sponsored project in the United Kingdom. Using COUNTER-compliant statistics, this study has conducted an in-depth analysis of usage in a group of major UK universities, has shown how usage relates to costs, institution profile and subject spread and has developed a set of measures that are likely to be used more widely as indicators of the value of online journals. In January 2005 the scope of COUNTER was extended beyond journals and databases with the publication of a draft Code of Practice for online books*

*and reference works. This paper will describe the role of both COUNTER Codes of Practice in the development of meaningful library measures in the electronic age.*

## **1. Overview**

In the traditional, hard-copy publishing environment, usage of publications held in the library was difficult to measure systematically. This meant that meaningful usage statistics were either not available, or were insufficiently reliable to form a basis for decisions about the relative value of different publications. In the online publishing environment, it is not only possible to measure usage in a systematic way; it is desirable to do so, from the perspective of the vendor as well as the librarian.

**Librarians** require online usage statistics to enable them to:

- assess the value of different online products/services
- make better-informed purchasing decisions
- plan infrastructure and allocation of resources
- support internal marketing and promotion of library services

**Vendors** require online usage statistics to allow them to:

- experiment with new pricing models that reflect the current value of online publications, rather than the historical hard-copy holdings from which they were derived
- assess the relative importance of the different channels by which information reaches the market
- provide editorial support for new product development, etc
- plan infrastructure, improve site design and navigation
- obtain improved market analysis and demographics

There has for some time been widespread agreement that vendor-generated usage statistics provide the best way forward, but this was not, until the advent of COUNTER, translated into the necessary coherent, international effort. To be of value, these usage statistics have to satisfy the 'Three C's'. First, they must be **credible**, and they are not yet generally so, as the recent ARL E-metrics project has shown (1). They must also be **consistent**, which they are not currently, due to the lack of standardisation of terms and definitions used. Finally, they must be **compatible**, which they are not, due to the wide range of different practices being used by vendors to generate usage statistics.

In recent years there has been a growing awareness of the need for an international effort, involving vendors, librarians and intermediaries, to develop acceptable, global standards for measuring online usage. This has resulted in Project COUNTER (Counting Online Usage of NeTworked Electronic Resources), now the leading initiative in the field. This article will focus on COUNTER, but will also highlight the other significant initiatives and progress in online usage statistics. The objective of Project COUNTER is to develop

agreed international Codes of Practices governing the recording and exchange of online usage data for different categories of content. Release 1 of the Code of Practice for journals and databases was published in January 2003; Release 2 was published in April 2005. A separate Code of Practice, covering books and reference works was published in draft form in January 2005; this draft will be available for comment on the COUNTER website ([www.projectCounter.org](http://www.projectCounter.org)) until December 2005 and the final version will be published in 2006

It is important to stress that improving the quality of usage statistics benefits publishers and intermediaries as well as librarians. By complying with the COUNTER Code of Practice publishers and intermediaries will be able to provide data to their customers in a format they actually want and learn more about genuine usage patterns. They will also be able to assess the relative importance of the different channels by which their online products reach the market and aggregate data for a customer that is using more than one delivery channel. New pricing models for online products are emerging that require vendors to take usage into account; usage data supporting these should be credible. The infrastructure required to support electronic products is sophisticated and costly; access to reliable usage statistics will help publishers make an appropriate allocation of caches, mirror sites, etc.

## **2. Existing initiatives on usage statistics**

COUNTER has been built on, and liaises with, a number of important, ongoing industry initiatives that have done much valuable work to define customer requirements for usage statistics from vendors. Most notable in this context are:

### **ARL New Measures Initiative**

The ARL Association of Research Libraries) New Measures Initiative has been set up in response to the following two needs: increasing demand for libraries to demonstrate outcomes/impacts in areas important to the institution, and increasing pressure to maximise use of resources.

Of particular interest is the work associated with the E-metrics portion of this initiative, which is an effort to explore the feasibility of defining and collecting data on the use and value of electronic resources.

Further information on the ARL E-metrics project can be found at <http://www.arl.org/stats/newmeas/newmeas.html> (1)

### **E-measures project: University of Central England, Centre for Information Research**

This project is designed to support the management of electronic information services in UK higher education institutes. Its objectives are to develop a new set of performance measures for electronic information sources and to pilot these with a view to establishing a new set of standard performance

measures. Further information on e-measures can be found at <http://www.cie.uce.ac.uk/cirt/emeasures/index.htm> (2)

### **ICOLC Guidelines for Statistical Measures of usage of Web-based Information Resources**

The International Coalition of Library Consortia (ICOLC) has been in existence since 1996. The Coalition is an international, informal group currently comprising over 160 library consortia in North America, Australia, Asia and Africa. ICOLC has developed a set of Guidelines for Statistical Measures of Usage of Web-based Information Resources. Revised in 2001, the Guidelines specify a set of minimum requirements for usage data, and also provide guidance on privacy, confidentiality, access, delivery and report formats.

For additional information, visit <http://www.library.yale.edu/consortia/2001webstats.htm> (3)

### **NISO Forum on Performance Measures and Statistics for Libraries**

NISO (National Information Standards Organization) held a Forum on Performance Measures and Statistics for Libraries on 15-16 February 2001 to gather information from the library community and key vendors about the best approach to evaluate the NISO standard Z39.7 on Library Statistics. The forum allowed a diverse group of stakeholders to explore their requirements and vision for describing, measuring, and showing the significance of contemporary library services. A new draft of this standard, which details and defines significant library input and output measures, was released in July 2002. Further information on standard Z39.7 and on the Forum can be found on the NISO website at <http://www.niso.org/> (4)

## **3. The origins of COUNTER**

COUNTER had its genesis in the UK, with the PALS (Publisher and Librarian Solutions) group formed by JISC, ALPSP and The Publishers Association. Under the Chairmanship of Richard Gedye of Oxford University Press, PALS made considerable progress in 2000 and 2001 in developing the framework and processes that evolved into COUNTER. In March 2002 COUNTER was formally launched, with a fully international Steering Group, a dedicated Project Director and a set of clear objectives. The widespread acceptance of COUNTER was clear from the outset, with the ready support of the following organizations and agencies:

AAP, Association of American Publishers  
ALPSP, The Association of Learned and Professional Society Publishers

ARL, Association of Research Libraries  
ASA, Association of Subscription Agents and Intermediaries  
BIC/EDItEUR  
JISC, Joint Information Systems Committee  
NCLIS, National Committee on Libraries and Information Science  
NISO, National Information Standards Organization  
PA, The Publishers Association  
STM, International Association of Scientific, Technical & Medical Publishers  
UKSG, United Kingdom Serials Group

With the publication and wide acceptance of Release 1 of the Code of Practice, it was decided that COUNTER required a formal organizational structure to provide a solid basis for long-term development. Consequently, in August 2003 COUNTER was incorporated as Counter Online Metrics, a not-for-profit company in England. Counter Online Metrics is owned by its members. The organization of Counter Online Metrics is described in more detail in Section 8 below.

#### **4. Release 1 of the COUNTER Code of Practice for Journals and Databases**

The full text of Release 1 of the COUNTER Code of Practice is freely available on the COUNTER website (<http://www.projectCounter.org>). It specifies in detail the requirements that vendors must meet to have their usage reports designated COUNTER-compliant. The main features of the Release 1 are summarised below.

##### ***Definitions of terms used***

The Code of Practice contains an extensive list of data elements and other terms used in the Usage Reports and other parts of the Code. Where possible, existing definitions from NISO, ISO, ARL and other organizations have been used. Among the terms defined are 'Vendor', 'Aggregator', 'Article', 'Full-text article', 'Search', 'Item request', 'Consortium' and 'Consortium member'. This comprehensive list of definitions is proving to be a useful industry resource and is becoming more and more widely used for purposes not directly related to COUNTER.

Also defined are the protocols to be observed when an aggregator or gateway is involved in the delivery of vendor content to the customer. These protocols are particularly important to avoid duplicate counting of usage by publisher and aggregator in situations where an intermediary aggregator or gateway is involved.

##### ***Data processing and auditing***

As the way usage records are generated differs from one platform to another, it is impractical to describe all the possible filters used to clean up the data. Instead, the Code of Practice specifies the requirements to be met by the data

to be used for building the usage reports. A guiding principle is that only intended usage should be recorded, and all requests that are not intended by the user are removed. To this end, all double clicks on an http-link within 10 seconds of each other will be counted as only one request. Where a pdf –link is involved, this filter is set at 30 seconds, due to the longer time it takes to render a pdf.

Auditing of vendor usage reports and processes by an approved third party will be a requirement for COUNTER-compliance from 2005. Detailed auditing specifications are available on the COUNTER website.

### ***Usage reports***

There are seven usage reports, covering journals and databases, in Release 1 of the COUNTER Code of Practice. These have been divided into Level 1 and Level 2 reports:

- Journal Report 1: number of full-text article requests by month and journal (*Level 1*)
- Journal Report 2: turnaways by month and journal (this report is only applicable where the user access model is based on a maximum number of concurrent users). (*Level 1*)
- Journal Report 3: number of item requests by month, journal and page type (*Level 2*)
- Journal Report 4: total searches by month and collection (*Level 2*)
- Database Report 1: total searches, sessions and full-text requests by month and database (*Level 1*)
- Database Report 2: turnaways by month and database (*Level 1*)
- Database Report 3: referrals by aggregator or gateway (*Level 1*)

Only Level 1 reports are required for COUNTER compliance, but those vendors who can provide the more detailed Level 2 reports are welcome to do so, and also encouraged to use the COUNTER definitions in any other usage reports they may provide to specific customers. Journal Report 1 is proving to be the most widely implemented of the usage reports and the Release 1 specification for Journal Report 1 is provided below.

## Journal Report 1: Number of Successful Full-Text Article Requests by Month and Journal

(Full journal name, print ISSN and online ISSN are listed.)

	Print ISSN	Online ISSN	Jan-01	Feb-01	Mar-01	Calendar YTD
<b>Total for all journals</b>			<b>6637</b>	<b>8732</b>	<b>7550</b>	<b>45897</b>
Journal of AA	1212-3131	3225-3123	456	521	665	4532
Journal of BB	9821-3361	2312-8751	203	251	275	3465
Journal of CC	2464-2121	0154-1521	0	0	0	0
Journal of DD	5355-5444	0165-5542	203	251	275	2978

### Note:

1. the 'Total for all journals' line is provided at the top of the Table to allow it to be stripped out without disrupting the rest of the Table, as the number of journals included may vary from one month to another.
2. Journals for which the number of full-text article requests is zero in every month should be included in Journal Report 1

Even this relatively simple report is proving a challenge for many vendors to provide, as they must meet the specified format exactly, otherwise it is impossible for librarians to merge or compare reports from different vendors.

### Report delivery

Report delivery must conform to the following standards for Release 1:

- Reports must be provided either as a CSV file, as a Microsoft Excel file, or as a file that can be easily imported into Microsoft Excel
- Reports should be made available on a password-controlled website (accompanied by an e-mail alert when data is updated)
- Reports must be provided at least monthly
- Data must be updated within four weeks of the end of the reporting period
- All of last calendar year's data and this calendar year's to date must be supplied

At the time of writing only a minority of compliant vendors were able to supply all of last calendar year's data, but this archive will grow with time.

### Compliance with Release 1

Compliance with the Code of Practice is encouraged in two ways. First, customers are urged to include a clause in all relevant licence agreements specifying that vendors provide usage statistics that are COUNTER compliant. A standard form of words for this clause is provided in the Code of

Practice. Second, to obtain 'COUNTER-compliant' status for their usage reports vendors are required to sign a formal Declaration of COUNTER Compliance and to allow COUNTER to review those of their usage reports that they claim are compliant. These reports are then listed in the Register of Vendors on the COUNTER website. Only reports listed there may be regarded as being COUNTER compliant. Since 2004 vendor usage reports have been monitored at five library test sites, which are providing useful feedback to individual vendors and to COUNTER; this is helping improve implementation.

By May 2005, over 40 vendors had achieved COUNTER-compliant status. Many of the major journal and database publishers, as well as intermediaries are now compliant, including: the American Association for the Advancement of Science, the American Chemical Society, the American Institute of Physics, Blackwell Publishing, EBSCO, Elsevier, HighWire Press, ISI, Oxford University Press, Nature Publishing Group, Springer and Wiley. Already over 60% of the annual output of articles covered by the Science Citation Index is in COUNTER-compliant journals, and this proportion is growing steadily.

## **5. Release 2 of the COUNTER Code of Practice for Journals and Databases**

Release 2 of the COUNTER Code of Practice, published on the COUNTER website in April 2005, was developed with input from librarian focus groups, from the COUNTER International Advisory Board and from other sources. One very strong message received from all groups was that COUNTER should concentrate on ensuring that vendors can provide a reliable set of basic usage reports, and not develop an ever-expanding list of increasingly detailed usage reports. This philosophy is reflected in Release 2. To avoid confusion, the original format and structure of Release 1 has been retained as far as possible. Release 2 becomes the valid Code of Practice for Journals and Databases on 1 January 2006, from which date vendors must comply with Release 2.

### **Features of Release 2**

The majority of the changes in Release 2 are designed to provide more specific information to assist vendors to create COUNTER-compliant usage reports, and to enable customers to use them. There are only two major changes to the content of the Usage Reports themselves. These are: first, the inclusion of additional columns in the usage reports that indicate the 'Publisher' and the 'Platform' of the database or journal; second, the modification of Journal Report 1, to allow successful requests for html and PDF full-text articles to be reported separately. The main new features in Release 2 of the Code of Practice are listed below, by Section:

#### **Section 3**

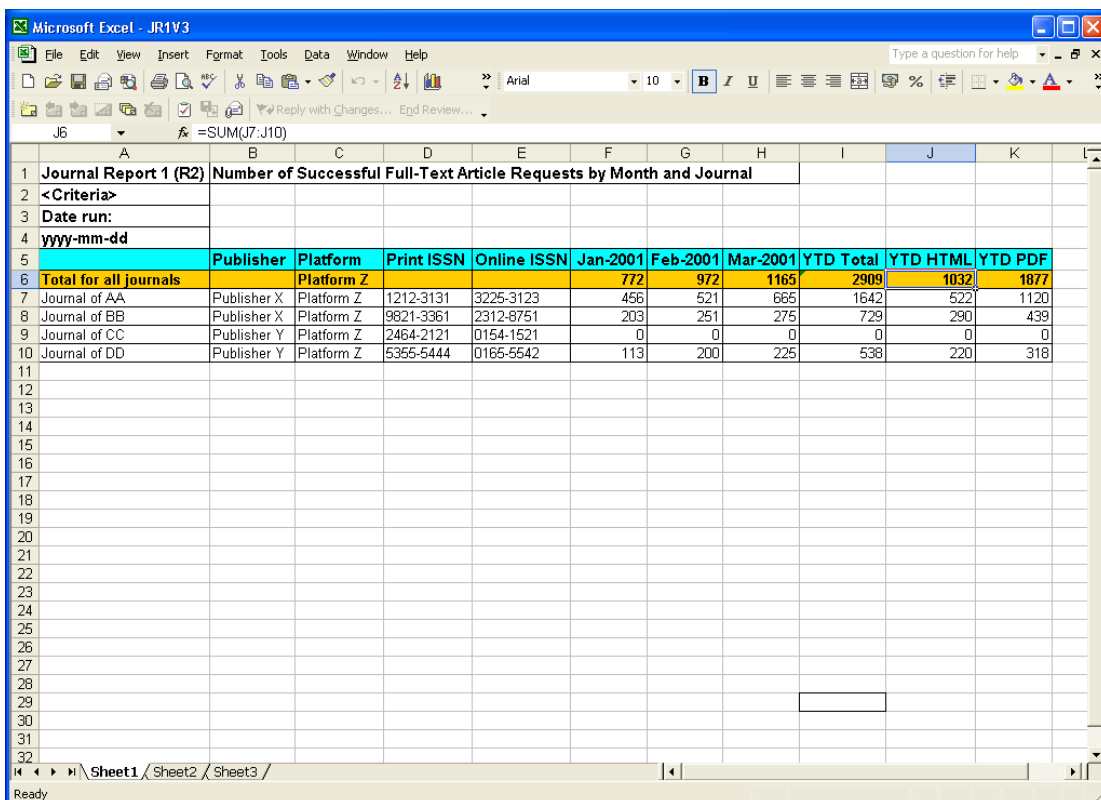
- The complete list of Definitions of Terms Used has been moved from Section 3 to an Appendix to the Code of Practice. A subset of those definitions that are specific to the usage reports included in Release 2 has been extracted from this list and is published as Table 1 in Section 3 of the Code of Practice itself.



## Section 4

- **4.1** Examples of the required usage reports are provided in the form of Excel spreadsheets and accompanied by detailed display rules, so that vendors have available more precise specifications for compliance. The format used for the monthly date column headings has been changed from mmm-yy to mmm-yyyy to avoid ambiguity.
  - *Journal Report 1: Number of Successful Full-text Article Requests by Month and Journal Formats* has been modified to include two additional columns that report html and PDF YTD totals separately. This is in response to widespread requests from librarians for this data. An example of the Release 2 Journal Report 1 is provided below:

### Journal Report 1: Number of Successful Full-Text Article Requests by Month and Journal



	A	B	C	D	E	F	G	H	I	J	K	L
1	Journal Report 1 (R2)	Number of Successful Full-Text Article Requests by Month and Journal										
2	<Criteria>											
3	Date run:											
4	yyyy-mm-dd											
5		Publisher	Platform	Print ISSN	Online ISSN	Jan-2001	Feb-2001	Mar-2001	YTD Total	YTD HTML	YTD PDF	
6	Total for all journals		Platform Z			772	972	1165	2909	1032	1877	
7	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	456	521	665	1642	522	1120	
8	Journal of BB	Publisher X	Platform Z	9821-3361	2312-8751	203	251	275	729	290	439	
9	Journal of CC	Publisher Y	Platform Z	2464-2121	0154-1521	0	0	0	0	0	0	
10	Journal of DD	Publisher Y	Platform Z	5355-5444	0165-5542	113	200	225	538	220	318	
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- The Level 2 usage reports from Release 1 (Journal Report 3 and Journal Report 4) have been moved to Appendix H of Release 2. These more detailed reports are not a requirement for COUNTER compliance, but are provided by several vendors and are valued by many customers. By including these reports in an Appendix we want to provide those vendors who can deliver more detailed usage statistics with a COUNTER-compliant standard that they can implement.
- **4.2** *Customer Categories for Usage Reports* A more detailed specification is provided here for consortium level reporting. Vendors are required, where contractual arrangements permit them to do so, to provide readily accessible aggregated usage reports for the entire consortium, as well as individual reports for each consortium member.

### **Section 6**

- The auditing standards and procedures are outlined here and described in detail in Appendix E. Vendors must have their Release 2 COUNTER compliant usage reports audited by an independent auditor before 30 June 2007, and once per calendar year from 2008 onwards.

### **Section 7**

- **7.3 Aggregators, Gateways and Hosts** The protocols to be used for recording and reporting usage when an intermediary aggregator or gateway is involved have been collected together in the new Table 2. The objective of these protocols is to avoid duplication of counting by the publisher that owns the content and the aggregator/gateway that provides access to it.

## **6. Draft Release 1 of the COUNTER Code of Practice for Books and Reference Works**

The draft of Release 1 of the new COUNTER Code of Practice for online books and reference works was published in January 2005. This marks the first expansion of COUNTER's coverage beyond journals and databases. The Code of Practice for online books and reference works has been developed with input from a task force of librarians and publishers with expert knowledge of these products and is the first attempt to introduce a comprehensive industry standard for the recording and reporting of online book usage data.

The draft Code of Practice will be available for comment for an extended period, until December 2005. Both vendors and librarians are encouraged to review the document and to submit their comments to the COUNTER Project Director. It is planned to publish the final version of this Code of Practice in early 2006.

The COUNTER Code of Practice for online books and reference works specifies how vendors can achieve COUNTER compliance for these products. Its features include:

- A set of five basic usage reports that cover full-text requests for a whole title, as well as for sections (chapters, encyclopaedia entries) within a title. Searches, sessions and turnaways are also covered. These reports are:

Book Report 1: Number of Successful Title Requests by Month and Title

Book Report 2: Number of Successful Section Requests by Month and Title

Book Report 3: Number of Turnaways by Month and Title

Book Report 4: Total Searches and Sessions by Month and Title

Book Report 5: Total Searches and Sessions by Month and Service

- A comprehensive set of definitions of terms relevant to books and reference works
- A format and structure consistent with the existing COUNTER Code of Practice for journals and databases. Only the content of the usage reports has been changed and the set of definitions of terms expanded. The specifications for report delivery, data processing, auditing, and compliance are identical to those already prescribed in the Code of Practice for journals and databases.

## **7. An important application of COUNTER usage statistics**

The COUNTER Journal Report 1 has been used in a UK study of online usage of journals from several publishers by a number of university library customers. The study was sponsored by JISC (The UK Joint Information Services Committee) and carried out under the direction of Angela Conyers and Pete Dalton of the University of Central England. Its principal aim was to provide JISC with accurate and up-to-date data on national use of journals available through the NESLi2 online licensing initiative. The study was intended to inform the JISC in future negotiations and to assist institutions in assessing value for money.

The study had the following objectives:

- to conduct an in-depth analysis of usage data from 4 NESLi2 publishers using a representative sample of very large, large, medium and small libraries in JISC-supported institutions in order to gain a national overview
- through this detailed analysis, to present an account of how journals in the NESLi2 initiative are being used within institutions and how that usage relates to costs, institution profile and subject spread
- to consider how usage data shows the extent of use of all titles within a 'big deal', including those previously unsubscribed titles which come as part of e-access as well as low and zero use titles.

The study has contributed to the development and testing of a methodology for the analysis of usage statistics for the NESLi2 publisher deals. This methodology could be applied to the assessment of usage of other publisher deals and could assist libraries in analysing their own usage data.

The study team has successfully collected and validated a considerable set of journal usage, subscription and cost data and has assisted in the testing and validation of the 'successful full-text article request' (COUNTER Journal Report 1) as a possible unit of measurement of 'usage' that can be applied consistently and reliably across all publishers.

### **7.1 Methodological issues**

The study has identified a number of issues and limitations that need to be considered in conducting future studies and qualifies the data collected:

- Undertaking this level of data collection, analysis and reporting entails considerable time and staff skills.
- The structure and organisation of particular library service departments can act as a barrier to obtaining accurate cost information. In many cases different departments deal with print and electronic subscriptions and often this can lead to a library service making no link between costs for e-access and print access with the overall cost of a deal therefore not always calculated.
- The use of subscription agents by some libraries can make the identification of costs of components of a deal more difficult, for example where an agent is only involved in dealing with a print subscription.

- Usage statistics from third party aggregators sometimes need to be added to particular publishers' statistics. It is not always clear to libraries where additional data needs to be added.
- Publishers' website lists do not always provide accurate up to date information about titles included in particular deals.
- Certain publishers have back file collections which are available for separate purchase and frequently go back to volume 1, number 1. As digitisation advances, more such collections are likely to become available. Usage statistics for titles in these back file collections may be aggregated with those for usage of the current title in the usage statistics given to libraries. This can make it difficult for libraries to assess the usage of current titles.
- Publishers' and libraries' understanding of which titles are subscribed do not always tally. In some cases libraries reported a delay in negotiating specific details of subscribed titles. This can result in some of the titles that appear as subscribed titles in lists not actually being available for use until well into the year. This is a consideration when looking at usage of subscribed titles.
- There was evidence of a number of journal titles changing publisher and therefore having only limited availability within the deals studied. This happened particularly with learned society journals

Further information on the results of this study may be obtained on the JISC website.

## **8. COUNTER organization and membership**

To ensure that COUNTER will be viable in the longer term, and will continue to serve the publishing, library and intermediary communities, in August 2004 it was set up as an independent, not-for profit company in England. Known as *Counter Online Metrics*, it is governed by a 6-member Board of Directors, chaired by Richard Gedye of Oxford University Press. An Executive Committee, reporting to the Board, is responsible for the management of COUNTER. The 14 members of the Executive Committee represent the international publisher, intermediary and library communities. On addition, there is an International Advisory Board of over 30 experts from the same communities.

Counter Online Metrics is owned by its members, and since 2004 its only source of income has been its member subscriptions. Publishers, Intermediaries, Libraries, Consortia and Industry Organizations are all eligible for full, voting membership at the following rates in 2005: Publisher £500 (\$750); Intermediary £500 (\$750); Library £250 (\$375); Industry Organization £250 (\$375); Consortium £500 (\$750).

By the end of 2004 there were over 150 COUNTER members in all categories. Our goal for 2005 is to recruit 200 members, as this will ensure a solid base of funding for the future. COUNTER's funding requirements are

modest. We need an income of around \$100k per annum to support all our activities.

The benefits of full COUNTER membership include:

- The right to vote at the Annual General Meeting on the direction and management of COUNTER, including appointments to the Board of Directors
- Regular bulletins on the progress of COUNTER
- Advice on implementation of COUNTER

As a lower-price alternative to the above, non-voting affiliate membership will be available to libraries at £100 (\$150) for 2003. Library affiliates will receive the regular member bulletins on the progress of COUNTER.

There are current

Further information on membership, as well as application forms, may be found on the COUNTER website (<http://www.projectCounter.org>).

## 9. 2005 and beyond

In 2005 the main objectives for COUNTER are to;

- Increase the number of vendors complying with the COUNTER Code of Practice for Journals and Databases.
- Obtain feedback on the draft of Release 1 of the Code of Practice for Books and Reference Works: using this feedback, finalise this Code of Practice, ready for publication early in 2006.
- Reach the target of 200 members of COUNTER

Looking further ahead, there is already a considerable body of literature which demonstrates not only that journal articles are well-used, but are also a major stimulus for creativity, innovation and new product development. The work of Tenopir and King (5,6,7) provides solid evidence for this. The availability of more comprehensive, reliable usage statistics will shed further light on the value and utility of journal articles.

Further information on COUNTER may be found on the website at:  
<http://www.projectCounter.org>

## 10. References

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