What Counts? Assessing the Value of Non-Text Resources

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Tammy S. Sugarman, Louise Kelley, and Stephanie Krueger, "What Counts? Assessing the Value of Non-Text Resources" (2009). *Proceedings of the Charleston Library Conference.*
http://dx.doi.org/10.5703/1288284314762

WHAT COUNTS? ASSESSING THE VALUE OF NON-TEXT RESOURCES

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Abstract
The COUNTER code of practice for usage reporting is becoming the industry standard in the library and higher education community. Libraries are increasingly able to use COUNTER usage statistics to guide their collection development decisions. Particularly in the current economic climate, librarians need data to support their decision-making, and they are demanding COUNTER compliant reporting from all of their licensed resources. Existing COUNTER reports are primarily designed to measure usage of textual resources such as journals, e-books and database indexes. However, for multimedia resources with content that is exclusively images, time-based media, or audio content, the usage patterns and terminology are different than for textual materials. For these non-text resources, trying to produce usage statistics that conform with existing COUNTER standards is like trying to fit the proverbial square peg into the round hole. In this paper, we illustrate the challenges faced by Georgia State University in reporting data on different types of library resources, and present some of the critical gaps in the existing COUNTER code of practice that must be addressed in order for multimedia resources to adopt these reporting standards. In addition, we will touch upon some of the unique complexities reaching beyond the scope of COUNTER. Finally, we will share some thoughts on steps—either currently underway or possible for the future—which will address these issues.

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Paper

"If an electronic resource does not provide COUNTER-compliant statistics, we have to think hard about whether it's worthwhile licensing that resource."

-Tammy S. Sugarman, Associate University Librarian, GSU

The COUNTER code of practice for usage reporting is becoming the industry standard in the library and higher education community. With the advent of the SUSHI protocol and software tools to help process COUNTER reports, librarians are increasingly able to use COUNTER usage statistics to guide their collection development decisions.[2] Particularly in the current economic climate, librarians need data to support their decision-making, and they are demanding COUNTER compliant reporting from all of their licensed resources.

The existing COUNTER reports are primarily designed to measure usage of textual resources such as journals, e-books and database indexes. However, for multimedia resources with content that is exclusively images, time-based media, or audio content, the usage patterns and terminology are different than for textual materials. For these non-text resources, trying to produce usage statistics that conform with existing COUNTER standards is like trying to fit the proverbial square peg into the round hole.

In this paper, we present some of the critical gaps in the existing COUNTER code of practice that must be addressed in order for multimedia resources to adopt these reporting standards. In addition, we will touch upon some of the unique complexities reaching beyond the scope of COUNTER. While these complexities apply directly to multimedia resource use, they are potentially relevant for textual resources as well. These issues will be placed within the context of the shifting role of the library and the requests currently being made of library staff as they continue to manage and fund multimedia resources. Finally, we will share some thoughts on steps—either currently underway or possible for the future—which will address these issues.

I. Why existing COUNTER reports do not meet the needs of non-text resources

There are two key problems with use of the existing COUNTER code of practice to track multimedia resource usage. The first issue is the lack of appropriate metrics and reports, while the second involves the differences in terminology between text and non-text resources. In order to understand these issues, it may be helpful to start with a refresher on the COUNTER codes. There are two COUNTER codes of practice: the first for books and reference works (the first version of which was published in March 2006), and the second for journals and databases (the third release was published in August 2009). Of these, the Journals and Databases Code (hereafter referred to as 'Release 3') is more widely adopted and more relevant for our purposes. In Release 3 there are a total of 12 possible reports, with the main required reports

[2] "ARL Libraries Get eResource Usage Stats Faster and Easier with Innovative ERM; Integration of SUSHI Standard Improves Access and Analysis" in *M2 Presswire*, December 11, 2007 – this press release gives an example of how the SUSHI protocol is making it easier for ARL institutions to process COUNTER usage statistics. For more background on the development of the SUSHI protocol also see Arthur Hendricks "SUSHI, not just a tasty lunch anymore: The development of the NISO Committee SU's SUSHI standard" in *Library Hi Tech*, Vol. 25, No. 3, 2007.

falling into the following categories: journal reports vs. database reports, and 'usage metric' reports vs. 'turnaway reports' (see Table 1 for an illustration).

Table 1: Required Reports in Release 3 of the COUNTER code of practice – by report type[3]

	Journal Reports	Database Reports
"Usage Metric" reports	• **Journal Report 1:** Number of Full Text Article Requests by Month and Journal • **Journal Report 5:** Number of Full Text Article Requests by Year and Journal	• **Database Report 1:** Total Searches and Sessions by Month and Database • **Database Report 3:** Total Searches and Sessions by Month and Service
Turnaway Reports	• **Journal Report 2:** Turnaways by Month and Journal	• **Database Report 2:** Turnaways by month and database

Based on this list, it is clear that all of the Journal reports are inappropriate for non-text resources that have neither text, nor articles, nor journals. Furthermore, turnaway reports are only relevant for resources that offer simultaneous user licensing, as opposed to site-wide licensing. So, for a non-text, site-wide licensing resource such as the ARTstor Digital Library, the only existing COUNTER reports that ARTstor could provide would be Database Report 1 or 3, which are identical except that DR3 is for databases that are grouped together in a single licensed collection (see Table 2 for an example of the Database Report 1).

Table 2: Example of Database Report 1

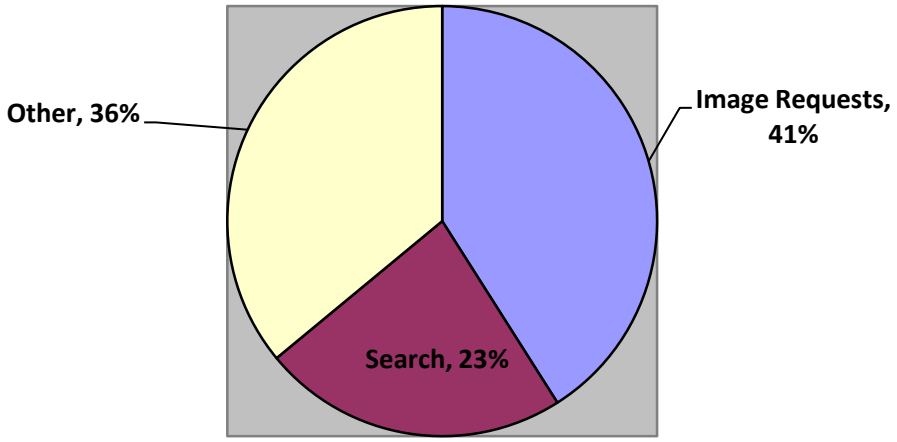
Database Report 1	**Total Searches and Sessions by Month and Database**						
<(Criteria)>							
Date Run:							
yyyy-mm-dd							
	Publisher	Platform		Jan - 2009	Feb – 2009	Mar - 2009	Total
Database AA	Publisher X	Platform Z	Total Searches Run	2322	2520	2742	7584
Database AA	Publisher X	Platform Z	Searches – Federated & Automated	5932	4976	6022	16930
Database AA	Publisher X	Platform Z	Total Sessions	1821	1929	2211	5961
Database AA	Publisher X	Platform Z	Sessions – Federated & Automated	3421	4523	4409	12353
Database BB	Publisher	Platform	Total Searches Run	3466	3210	4459	11135

[3] There are additional reports related to usage of an archive (Journal Report 1a) or usage reporting when a resource has been licensed by a consortium (Consortium Report 1 & 2) but these all conform to the types of reports in the table above.

	Y	Z					
Database BB	Publisher Y	Platform Z	Searches – Federated & Automated	7734	6832	8001	22567
Database BB	Publisher Y	Platform Z	Total Sessions	1987	2200	2544	6731
Database BB	Publisher Y	Platform Z	Sessions – Federated & Automated	3986	2899	3877	10772

The two usage metrics in these reports are sessions, and searches. Herein lies the problem of the missing metric. While searches are an important type of use in non-text resources, they are hardly the only one. And in the case of a resource such as ARTstor, they do not even make up the majority of use. As Figure 1 illustrates, searches make up only 23 percent of ARTstor's usage activity, while 'image requests' (viewing, downloading, printing) make up 41 percent. A discussion of the other 36 percent of usage activity will be discussed further in Section II.

Figure 1: ARTstor Usage by Usage Type (Total Events since inception)[4]



While ARTstor and other non-text resources might appear to resemble databases rather than electronic serials at first glance, in practice, their usage patterns are more closely aligned with e-journals, where the use of the content is equally as important as the searching of the content. What is currently missing in the COUNTER reports is a metric that would be equivalent to the 'full text article request' measure found in the Journal 1 and Journal 5 reports. What is needed is something along the lines of 'multimedia full content unit request' (albeit hopefully with a better name).

The question of naming leads to the second challenge of the existing COUNTER reports. The terminology used to describe e-journal usage simply does not apply when one is trying to analyze non-text resources. An excellent illustration of this point is the optional Journal 3 report from Release 3 (see Table 3). While this report does support the reporting of non-text content (as can be seen from the red text in Table 3), the terminology of this report clearly belies its text-based focus and origins. Concepts such as "Journal", "Publisher" and "Page type" do not make

[4] Total Events since inception includes all ARTstor events since January 2004 through September 2009, consisting of a total of almost 100 million events. ARTstor events include a range of tracked activities including search, browse, image views, etc.

sense in the context of an aggregated collection of images from multiple sources. Furthermore, non-text resources do not have unique identifiers such as ISSN numbers.[5]

Table 3: Journal Report 3 from COUNTER Release 3

	A	B	C	D	E	F	G	H	I	J
1	Journal Report 3 (R3)	Number of Successful Item Requests and Turnaways by Month, Journal and Page Type								
2	<Criteria>									
3	Date run:									
4	yyyy-mm-dd									
5		Publisher	Platform	Print ISSN	Online ISSN	Page type	Jan-2009	Feb-2009	Mar-2009	YTD Total
6	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Table of Contents	732	806	676	2214
7	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Abstracts	1032	1140	1020	3192
8	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	References	543	322	567	1432
9	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text Postscript	444	365	432	1241
10	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text PDF	621	670	598	1889
11	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text HTML	322	420	543	1285
12	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text Total	943	1090	888	2921
13	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text PDF turnaways	23	40	32	95
14	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Full-text HTML turnaways	10	21	18	49
15	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Sectioned HTML	109	112	153	374
16	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Supplementary data set	34	35	54	123
17	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Non-textual resource: audio	5	7	19	31
18	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Non-textual resource: image	6	10	12	28
19	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Non-textual resource: video	13	22	31	66
20	Journal of AA	Publisher X	Platform Z	1212-3131	3225-3123	Non-textual resource: other	3	7	6	16

Referencing the glossary of Release 3 further confirms the problem with the existing COUNTER definitions of multimedia content. According to glossary reference number 3.1.2.15, non-textual resources are defined as "Non-textual material that is published in an online journal, book, or other publication that is associated with a full text article, encyclopedia entry or other textual material…". This definition shows that the existing COUNTER reports have been expanded to handle multimedia content that resides within a textual resource, rather than multimedia content that exists as an independent entity. What is needed is a new version of the COUNTER reports and code for this type of solely multimedia resource. In section IV below, we will discuss what steps are being taken to address this need.

II. Other challenges in tracking usage of non-text resources

Beyond the text-centric focus of existing COUNTER reports, reliance on COUNTER usage statistics–or usage statistics of any sort–as the primary source for evaluating non-text resources poses further challenges. These challenges fall into two categories: first, the problem of measuring 'non-traditional' types of use that are becoming increasingly prevalent with the advent of more robust online environments, and second, the challenge of measuring use that occurs outside of the measurable environment.

Before discussing the measurement of 'non-traditional uses' we must first define 'traditional uses.' The COUNTER reports themselves essentially document this 'traditional use' through the metrics they have selected to include in their reports. As discussed earlier, the COUNTER reports track two types of use: searches and item requests (in the case of journals – full text article requests). According to glossary reference number 3.1.2.11, an item request includes

[5] Text based resources are now facing similar challenges in trying to develop unique identifiers for articles as they try to leverage and standardize item-level usage statistics. See Christine Merk, Frank Scholze, and Nils Windisch "Item-level usage statistics: A review of current practices and recommendations for normalization and exchange" in *Library Hi Tech,* Vol. 27 No. 1, 2009, pp. 151 – 162. COUNTER is addressing this issue through the PIRUS project – see the PIRUS 2 news release from October 23, 2009 at http://www.cranfieldlibrary.cranfield.ac.uk/pirus2/ .

'…viewing, downloading, emailing and printing of items…. '. In other words, the COUNTER reports track what most users do with an electronic serials resource: searching for articles of interest, viewing those articles, and then printing, downloading or emailing the articles for later reference.

In contrast, resources composed of primary source, multimedia content have had to support a more diverse range of uses based on the nature of the material provided. Simply printing an image is not useful for most purposes–users must be able to actively manipulate multiple images: organizing, annotating, and analyzing them in order to support arguments.[6] To this end, ARTstor has developed a variety of tools to support this type of active use. This includes the ability to load external images into the ARTstor environment, to save groups of images for later use, to create course folders where students can study images, to zoom in on details of an image, to annotate images, and to create in-class presentations. These uses go well beyond simply 'viewing, printing or downloading' an item, yet they are all value-added uses that are tracked in ARTstor's custom usage statistics, comprising the remaining 36 percent of ARTstor's total usage (see Figure 1).

The measurement of 'non-traditional' uses could be relevant for text-based resources as well, which are increasingly offering a suite of services for their users such as exporting citations and annotations.[7] It could be possible that in the future COUNTER will be able to develop standard metrics for some of these new uses. However given the diversity of the features and the variation in the way these features are (or are not) tracked, it may be quite some time before the community develops and agrees upon a standardized way to report these other types of 'non-traditional' usage. For now, the only solution for librarians wanting to fully understand this type of usage is to take the time to look at the custom reports offered by individual resource providers in addition to COUNTER reports.

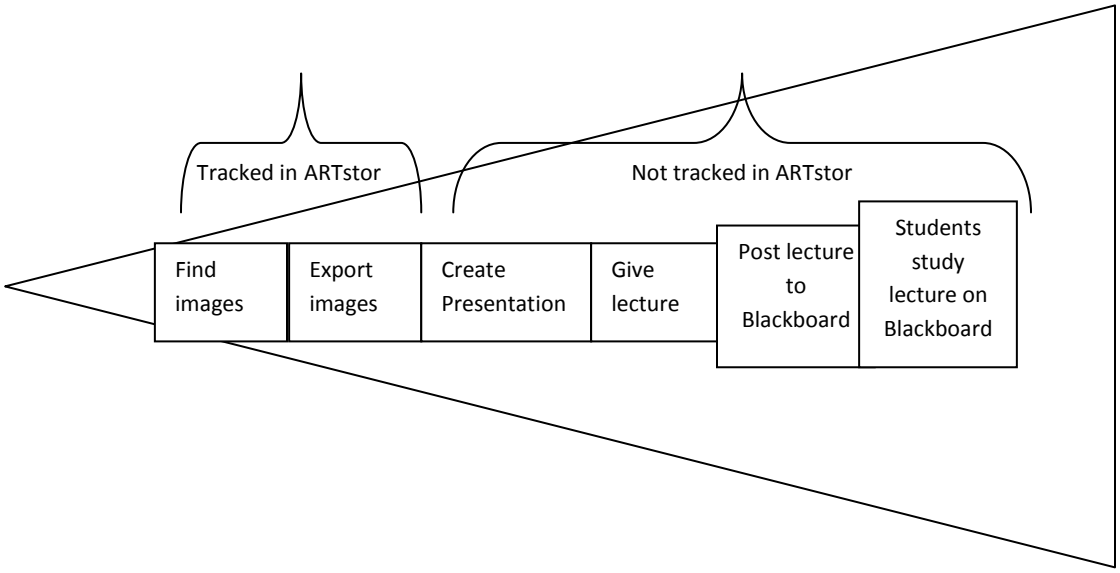
This brings us to perhaps the most perplexing challenge of multimedia usage statistics: how to account for use that occurs outside the measurable environment. The patterns of use for non-text resources are different than text resources. In the case of images, two of the most common forms of use are to gather a set of images together for in-class presentation, and to post images to a course website for student use. While ARTstor offers a variety of tools to support these uses, it also recognizes that users can, and will choose tools and outside of the ARTstor environment, including Microsoft PowerPoint for in-class presentations and Blackboard for posting images for student study. Based on the results of an annual survey conducted by ARTstor, 82 percent of faculty at participating institutions use ARTstor content for in-class presentations. At the same time, 72 percent of those faculty members report that they use PowerPoint to present that content. Sixty-one percent of undergraduates surveyed said they

[6] Diane Harley et al. "Use and Users of Digital Resources: A Focus on Undergraduate Education in the Humanities and Social Sciences," Center for the Study of Higher Education, UC Berkeley, April 5, 2006. This study documents the complex range of uses made of digital resources.

[7] Deborah D. Blecic, Joan B. Fiscella and Stephen E. Wiberly, Jr., "Measurement of Use of Electronic Resources: Advances in Use Statistics and Innovations in Resource Functionality" in *College and Research Libraries,* January 2007, pp. 26 – 44. This article gives an example of how new functionality – namely federated searching and alerting services – impacted usage statistics.

use ARTstor to prepare for tests/exams.[8] In these instances, the only uses that are tracked in the ARTstor environment occur during the initial process of finding and exporting the images. All of the subsequent activity – from organizing the presentation, to giving the lecture, to making the presentation available on Blackboard, to having many undergraduates access the content for study–goes untracked (see Figure 2).

Figure 2: A typical ARTstor use case and which activity is tracked in ARTstor usage statistics



Important to note that student use of images (e.g. the 61 percent that reported using images in Blackboard) can account for a significant portion of the total usage in this use case scenario. Many of ARTstor's highest use institutions are those who use ARTstor's software for posting images for student study. On a related note, use of ARTstor's course folders (within the ARTstor interface) for one art history survey course with over 100 students can easily boost ARTstor use tenfold, as each of these students goes to ARTstor multiple times during the semester to study potentially hundreds of different images. Furthermore, when faculty choose to reuse image groups and lectures from semester to semester, this generates further use that is currently not credited back to the original resource.

Georgia State University has experience first hand the need to measure this type of use. Since 2004, the library subscription to ARTstor has been funded annually from multiple sources; through a student technology fee, the School of Art & Design, and the University Library. While the library is able to provide data from ARTstor statistics reports, as discussed above, it is now being asked for measurable use outside the resource itself. The following is a quote from an e-mail sent to the library in response to a preliminary proposal for renewal of funding: "Because this is a request for continued funding for a previous year's award the narrative needs to include 'outcomes and results of the prior award(s)'. Please give any data about usage - number of

[8] Fall 2008 ARTstor Registered User Survey

classes, disciplines, areas, individuals using the images, and how? Any other material about outcomes or student/classroom usage?"

As budgets remain flat, or even decline, we will face increasing pressure to tie usage to student learning and applications outside the database itself, whether it is in the classroom or in the conduct of research.
While this is a problem that will not be unique to non-text resources, in our experience providing additional justification for spending on humanities resources, as opposed to other disciplines such as science, is becoming more common. Therefore, it behooves us to develop ways to measure and show the worth of these valuable non-text resources as soon as we can.

III. A new problem for libraries

It is apparent that the development of COUNTER statistics was rooted in the specific needs of e-journals, indices and books rather than non-text resources. The reason for this may be twofold. Over time, as libraries spent a larger portion of their materials budget on e-journals, the data to justify the usage of these expensive journals and databases was crucial. Traditionally, non-text resources, primarily in the humanities, have not cost as much as e-journals in other disciplines. In addition, until recently, multimedia assets such as images, audio or video were primarily housed within the respective academic departments (e.g. art history for the slide library, music for the music library). However, the digital era has led the library to become much more involved with multimedia resources. As Denise Hattwig from the University of Washington recently wrote:

> *Libraries have become increasingly interested in digital images, subscription image databases, and visual literacy. Visual resources collections are building digital image databases, and are often looking for the technological infrastructure and metadata expertise typically available in academic libraries. Additionally, many institutions are emphasizing university-wide, rather than departmental resources, particularly as digital resources make this a possibility, and budget realities require it. In this climate, many visual resources collections have moved out of departments and into their college and university libraries. Others have developed partnerships with libraries to further common goals*.[9]

According to the results of the Visual Resources Association Professional Status survey, 18.6 percent of the digital image collections at academic institutions now reside within the university library, while an additional 49 percent reside in a cross-institutional setting (a school within the university/or at the college/university level), leaving 40% at the academic department level.[10]

[9] Denise Hattwig, introduction to the session "Common Threads: Libraries and Visual Resources Collections Merging, Partnering, and Finding New Ways to Work Together" at the VRA 26th Annual Conference in San Diego. See http://vraweb.org/conferences/sandiego2008/sessions/session5/index.htm

[10] See presentation made by Christine Hilker and Margaret Webster at the VRA 26th Annual Conference in San Diego, March 14, 2008 - http://vraweb.org/conferences/sandiego2008/sessions/session5/HilkerWebster.pdf

The trend of this change is also dramatic: according to the VRA survey, over 37 percent of respondents started developing a digital image collection between 2004 and 2006. Thus, digital multimedia has only truly begun to take hold at institutions in the past 5 years, and the library's role with this media is likewise new and still very much evolving.

IV. Georgia State University Library Perspective

Over the past decade, libraries have collected various types of data in order to try and assess the use of their collections. These have included looking at due dates stamped in the back of books, hash marks for re-shelved print journals and circulation data obtained from the OPAC. As increasing amounts of materials budgets were spent on electronic journals and databases, librarians requested and (usually) received usage statistics from individual vendors either by e-mail or direct download. The most recent release of the COUNTER code of practice for usage data reporting and the SUSHI XML protocol are now addressing the need for reliable, consistent usage data for the resources libraries license for their users.

Similar to other public research universities, over the past few years Georgia State University has experienced flat library materials budgets. The library, as part of the university and higher education in general, is operating in a climate of accountability and data driven decision making. The library is compelled to prove that the funds we are spending on our collections are returning a high rate of investment. In addition, we look at usage statistics as one measure of the success of our user education in a particular subject area; low usage may indicate a need for better promotion of the resource to the intended user population. Usage statistics are one of the major tools we have to make an informed, evidence-based decision in order to use our limited funds in the most judicious way.

COUNTER compliant statistics are easy for us to collect and compare across vendors. We have been examining COUNTER statistics for journals, calculating cost-per-use, and using the data as one factor to determine serials cancellations. Our University Senate Library Committee asks to see periodic reports on usage of resources, and it is easy for us to produce a report that compares usage of databases from different vendors.

The issues with COUNTER reports for non-text resources that are detailed above affect the library's ability to assess the value of these resources in a consistent way. The problem of obtaining "comparable" statistics for database usage becomes more acute when trying to compare non-text resources that provide the same media type of content but come from different vendors, for example, two databases that provide images (ARTstor and CAMIO) or streaming music (Naxos and Classical Music Library). Because JR 3 is optional, the library cannot depend on vendors that provide non-text resources to produce that report. As one vendor states, "Some of our products (i.e. streaming video) do not neatly fall into COUNTER compliance categories, however, we provide statistics elements that mirror those as closely as feasible. At this time our reporting function merges three different COUNTER-based reports into a single output function, however this will be made more COUNTER compliant in the future." (Alexander Street Press Customer Usage Statistics). Therefore, the library relies on the statistics obtained from the vendors' sites, and however they choose to define and gather the

types of statistics they provide. The following is an example of the statistics elements from two databases that provide streaming media.

Example:

Music Database 1	Music Database 2
Login Time	----------
Sessions	Sessions
Average Time	Average Session Time
Music Clips Streamed	Streams/Peak Streams
	Searches

While some elements appear to be similar, without a standard to define these elements, the library cannot be sure the two databases are providing comparable data. A COUNTER report for non-text resources would make it easy for us to collect and provide a comparison of, for example, image downloads for each of the image databases or music clips streamed for each of the music databases. Each of these metrics would have a standardized definition that would allow a comparison to be made.

V. Next Steps

Fortunately, there are several ways to address the identified challenges. First, work needs to be done to define what a multimedia COUNTER code of practice would look like. Positive steps have been taken in this direction, as ARTstor and OCLC have initiated a partnership with the COUNTER Technical Advisory Group to address this challenge. While this work is still in the earliest stages, COUNTER has acknowledged that there is a gap in the existing reports. Because the universe of non-text resources is small, it will be important to develop a multimedia COUNTER code that can work across media types (audio, video and still images). There is a significant amount of work ahead as we determine how to develop a standard with application across such a diverse set of assets.

Beyond this effort, discussion among the broader COUNTER community must begin, with consideration given to the measurement of ‘non-traditional’ uses. Given COUNTER’s commitment to continually enhancing their codes, this seems to be another area that is ready for further exploration.

Finally, it is critical to raise awareness in the library community of the complexity of these issues. As discussed above. Even when a multimedia COUNTER standard is developed, it is unlikely to address all of the challenges inherent in accurately assessing the value of multimedia resources. Therefore, it is equally important to help librarians understand how the patterns of use for these resources are unique, and to work together with the traditional stewards of these resources (visual resource professionals, AV professionals) to understand how to bridge the gap between the traditional methods for assessing the value of departmental collections, and new requirements and expectations.