

Why the AMS does not provide journal usage statistics

At a recent meeting of the Society for Scholarly Publishing, there were at least a dozen presentations on usage statistics for journals. The opening slide for one of these presentations (Project Counter) began with a clear statement: Libraries need online usage statistics to assess the *value* of different online products and services. Everyone in the audience appeared to nod in agreement.

In almost every session on usage statistics, the word "value" was used repeatedly. The librarians were enthusiastic about this new tool for measuring the "value" of journals. The publishers believed that usage statistics would allow them to assess the "value" of their journals (and the success of new pricing models). Everyone seemed to agree that, in the coming years, usage statistics were the key to measuring the "value" of electronic publications -- to making the tough decisions about journals -- and speakers enthusiastically promoted "codes of practice"¹. Many librarians *demand*ed usage statistics as the only rational way judge journals and to make decisions.

This unquestioned faith in usage statistics ought to trouble us all.

First and foremost, we should worry that the interpretation of usage statistics is not grounded in principle. Should we judge the value of a journal by how often users download articles? Over what period of time? Is an article that is downloaded 10 times in its first year more valuable than an article downloaded 100 times in the first 50? Is an article that is casually perused and tossed aside by 100 readers more valuable than an article that forms the crucial part of a critical research project? Articles play many different roles -- to generate ideas, for background reading, and to supply exactly the right piece of information for research. Which is more important? Equating value with usage statistics ignores all these complicated questions and suggests there is a simple way to measure value -- a few numbers that make it easy to come up with answers and to compare journals.

We should also worry that the term itself -- usage statistics -- is misleading. Do these statistics really measure usage? Many users of online services download large numbers of files as a matter of routine (or even automatically by script). If users download files but don't read them, are they "using" them? How often does this happen? Is routine downloading of unread material increasing? We have no way of knowing.

Whatever the meaning of usage statistics, we should worry because they are notoriously unreliable. The Web is deceptive because it creates the *appearance* of a user logging into a session and using a resource, but that's not the way it works². Calling each journal page

¹ The most prominent such code is part of Project Counter, <http://www.projectcounter.org> (Last accessed 9/2004)

² For an excellent description of the way in which the Web works and the limitations of statistics, see <http://www.analog.cx/docs/webworks.html> (Last accessed 9/2004.)

or file to your computer requires a series of messages to be sent and received. Sometimes the messages are exchanged with the publisher's server (recording the usage), but sometime they are not (when a page or file has been "cached", that is, saved on some site in between)³. Sometimes the series of messages gets interrupted because there is too much traffic or some other problem on the network, and the exchange begins again. And sometimes there are flaws in the software running browsers, causing requests to be sent repeatedly (the "3 times" flaw for PDF files using Internet Explorer is a famous example⁴). The code of practice mentioned above tries to get around these technical problems by creating precise rules for how to count, but reading the details of those rules only reinforces the notion that usage statistics are not precise and quite arbitrary. Many experts agree.

We should worry because equating usage statistics with value may have unanticipated (and undesirable!) consequences for the practice of scholarly publishing. At the moment, most publishers continue to produce print versions of their online journals. These are used not just by "old-codgers" but by many others as well, including people in the developing world (for whom the Internet is either unavailable or unusable). Most institutions continue to subscribe to both print and electronic, accommodating *all* users. But how can one make decisions about journals based on statistics that measure the behavior of only *some* users? When print and online versions are bundled together, this creates a real problem for publishers. Will this hasten the demise of print journals? Is that good for everyone?

Also, many publishers provide ample bibliographic material to users, whether or not they are subscribers to the journal. Best practice is to provide bibliographic material, abstract, *and* the list of references (to which the AMS adds links as well). That makes it easy for scholars to navigate the literature, even when their institutions do not subscribe to all journals -- a kind of open access within the existing system of subscription journals. But allowing people to see this material without "downloading" the article itself will adversely affect the journal's usage statistics. Will publishers change their practice in order to protect the "value" of their journal? Surely they will, if usage statistics determine that "value".

These are only some of the worries. Usage statistics can inadvertently violate the privacy of users (when only one person is on a subnet, for example). They can be hijacked by high-level administrators to compare (inappropriately!) research activity in different departments. They can even be used within departments to allocate resources (again, inappropriately!) to various groups based on the "research activity" of faculty. All this from a few numbers that are created from a flawed perception of how the Web really works and some subjective rules about how to compile them.

Yet, even with these worries, some librarians continue to demand usage statistics. Yes, they admit, usage statistics are only one way to measure value and the statistics are

³ For caching and a discussion of other problems with statistics, see "Why web usage statistics are (worse than) meaningless" at <http://www.cranfield.ac.uk/docs/stats/> (Last accessed 9/2004.)

⁴ See Microsoft Knowledge Base article Q293792.

flawed and sometimes unreliable. But usage statistics provide one additional piece of information by which to decide about journals in a complicated process of decision-making. Librarians need data to make decisions, they say. Many publishers are eager to provide that data as a way to provide more service to their customers, but without much thought about the long-term consequences.

The AMS has thought about the consequences, however, and we have decided that providing usage statistics for our journals is not in the best interest of research and scholarship⁵. It is not always best to have every piece of available data, flawed or not, when making decisions. (Think of a school that tattoos IQ scores on the forehead of students in order to help teachers assign grades.)

We have not made our decision because we feel our journals are weak or uncompetitive; indeed, our journals are generally considered among the best -- one of them is more than a century old and another is rated among the top three mathematics journals by nearly all observers. We've made the decision based on principle and thoughtful analysis: Difficult as it is, librarians and scholars should measure the value of journals not by the *quantity* of usage but by the *kind* usage ... and many other factors as well. On balance, we believe that, at this time, encouraging the universal acceptance of usage statistics will harm scholarship more than it helps. We will continue to review this decision as attitudes and technologies change.

Not everyone will agree with this stance. If librarians and scholars disagree, they have the right not to subscribe to our journals. We hope they don't, but we respect their right to do so; these are complicated issues about which even knowledgeable people of goodwill can disagree.

But we also hope that people will understand that our position is based on principle and thoughtful analysis. The AMS has a long history of supporting best practices for journals -- copyright for authors, perpetual access for libraries, online access to material for non-subscribers, and moderate pricing policies. We view our position on usage statistics as a policy like these others, made to the best of our ability in the interest of scholarship.

John Ewing

⁵ On the other hand, the AMS has provided usage statistics for MathSciNet and has worked to improve the delivery and presentation over the past year. The usage of a database, as opposed to a collection of articles, is easier to measure and interpret.