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Why Usage Statistics Cannot Tell Us Everything, and Why We Shouldn’t Dare To Ask

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What would you be willing to pay for a full-text download? $30, $20, $5, 25 cents?

Would you answer this question differently if you knew:
1. That it was a faculty member needing the article while preparing a million-dollar research grant application?
2. That it was a graduate student doing a comprehensive literature search for her dissertation?
3. That it was an undergraduate downloading the first three documents for an assignment due tomorrow?

Would you also answer the question differently if you knew:
1. That you were paying for an article download that you already had in your stacks?
2. That this article was downloaded first as an HTML document and then as a PDF (i.e. two downloads)?
3. That the same article was available in a competing product for a tenth of the cost?

And lastly, would you change how much you would be willing to pay if you knew:
1. That the article was actually read?
2. That only the title and abstract were browsed?
3. That someone systematically downloaded this article (along with every other article in this journal) because he/wanted to create a personal archive?

While usage statistics can tell us so much about how much a journal or resource is being used, it cannot tell us why it was used, or by whom. Asking the why and by whom questions may be very tempting for both librarians and publishers. I will argue in this short piece that the answer to these questions have unintended consequences for library budgets.

Price Discrimination
Price discrimination is charging different prices to different customers for the same good or service. It is practiced because it results in greater profits than if a company charged a uniform price to all customers. Price discrimination is practiced at the movie theatre (age discrimination), for a haircut (gender discrimination), and for airline tickets (charging business travelers more than vacationers). Consumers often despise price discrimination. Those who pay more don’t believe that it is “fair” to pay more for the same service, and those who pay less may feel that they could have received a better deal.

The electronic publishing market is ideal for price discrimination. Infrastructure costs are very high and marginal costs are exceedingly low. The cost to create the first online copy is the publishers’ greatest expense, while the cost to deliver one more PDF or HTML article to a desktop are almost so low as to consider them to be non-existent. Because the marginal costs are so small, a publisher can sell (or bundle) online access to institutions that have never owned a paper copy at prices that sound too good to be true.

Price discrimination only works when the producer has some monopoly power, which means that the customer cannot equally substitute one product or service for another. In an exact sense, each journal is a monopoly since it is composed of a collection of unique articles not found in any other product — in essence, there is no substitutability. In a practical sense this is not completely true. Undergraduates will often require three articles on a particular topic, and so the substitutability for any article is very high, as long as it is still on topic.

There are three different degrees of price discrimination, and the distinctions between these are important for the publishing economy.

First Degree
First-degree price discrimination means that a producer (publisher) can sell every unit (journal article) at the maximum price that each consumer is willing to pay. In reality, a publisher currently lacks the information necessary to put this pricing model into practice. When you try to download an article from a journal to which your library does not subscribe, you (and everyone else) are pitched the same price.

In the case of journal subscriptions, the use of subscription vendors prohibited publishers from knowing too much about their customers. Publishers however, were not entirely in the dark. The construction of the ISI Citation Reports in the mid 1970’s provided publishers with a good idea of how important their journals were to the academic community as a whole. These citations reports however did not allow publishers to find out how their journals were being used at each institution. In effect, they did not have enough information to charge differential prices to each institution based on what publishers believed libraries were willing to pay.

continued on page 26

Bradford’s Distribution, the 80/20 Rule, and Patterns ...
from page 22

these two areas tend to be interfiled in the ranked listings of journals, thus skewing the expected rate at which journal use drops.

In an attempt to reduce the effect of interdisciplinarity on the results, we extracted full-text usage statistics for education journal titles in The College of Saint Rose data set. Even within the education discipline, however, Bradford’s distribution did not match the data. We found that “hits for 1” (again, we used the top three journals as “1”) were 11,430. The Bradford multiplier was 5, such that hits were 12,195 for r², and 37,713 for r². (Hits for r² could not be calculated as there were not enough education titles in the set to do so.) Therefore, these results would suggest that interdisciplinarity does not account for Bradford’s distribution not matching our data for college communities’ use of interdisciplinary full-text databases.

Other possible reasons why Bradford’s model does not fit this data include the fact that student use of online journals may differ from journal use by publishing professionals; changes in user behavior between print journals and online sources; and characteristics of this particular sample. In addition, the reliability of online usage statistics remains to be determined.

References

<http://www.against-the-grain.com>
Second Degree

Second-degree price discrimination is a niche where the customer is offered a choice of possible contracts that reveal information about themselves through their choice. Booking a flight months in advance to the Charleston Conference and including a Saturday stay-over distinguishes you from most business travelers who book very close to the travel date and often fly during the week. In this case, your choice reveals information about yourself and allows the producer to charge very different prices for the same service.

Third Degree

Third-degree price discrimination is where a producer can identify different types of customers and offer different contracts to each group based on their willingness to pay. Movie theaters offer one price to adults, and a discount price to students or seniors. Many publishers distinguish different types of subscribers. For example, the New England Journal of Medicine sets different prices depending on whether you are a physician, student, resident, institution, or other. You are also required to disclose your country, and if subscribing as an individual, required to disclose your place of work or study. PNAs groups institutional subscribers by Carnegie classification and distinguishes academic from commercial institutions. The Ecological Society of America involves a more complex matrix for institutional subscribers involving country and institution type. Many journals publishing online with HighWire Press offer free online access to developing countries. Other pricing classifications may include FTE counts (or subsets of faculty within a discipline). The practice of third-degree price discrimination is not limited to commercial publishers, and may not be considered "unfair." By charging different amounts to different subscribers a nonprofit publisher may use commercial subscribers to help subsidize member subscriptions, student subscriptions, or to help run other society services.

Why knowing too much about our patrons is detrimental for library budgets (and really good for publishers).

As mentioned above, academic publishers have been practicing third-degree price discrimination for quite some time, offering differential pricing for classes of users. While more customer surplus can be extracted by practicing this type of discrimination over setting a uniform price, it is not nearly as efficient as first-degree price discrimination.

In order for publishers to move into first-degree price discrimination, they need to know more information about how their product is valued at each institution. Raw number of downloads would allow publishers to compare institutions and their use of the same product. Knowing who used their product and how or why they used it would allow greater leverage to price discriminate. At present, both librarians and publishers are only privy to anonymous down-