



Patron-driven acquisition of journal articles using ReadCube at the University of Utah

The University of Utah Library has teamed with a new company, Labtiva, to experiment with a product called ReadCube Access. This product allows the library to provide access to journal articles using a patron-driven acquisition (PDA) mechanism, using a tiered pricing structure based on level and permanence of access. Outcomes of the pilot program and a value analysis are discussed. Overall, the program is deemed a success by the Library.

Introduction

For several years, the University of Utah's J Willard Marriott Library has been proactive in experimenting with patron-driven or demand-driven acquisition of books (PDA). Faced with decreasing usage of the print collection, a stagnant library budget, and constant and aggressive journal price hikes, the Library's leadership and collection development officers felt a growing need to ensure that every dollar of the Library's increasingly constrained budget would be spent effectively – and felt also that effectiveness could most usefully be defined in terms of actual use by the University of Utah community. PDA models do not necessarily lead to cost savings, but they do by their very nature forge a strong connection between acquisition and real-world usage, making PDA a potentially attractive model for libraries concerned about maximizing the effective use of their acquisition funds.

While PDA for books (and especially e-books) has quickly become a widely accepted practice in research libraries, a PDA model for journal content has been slower to develop. There are several reasons for this, such as the fact that by-the-article purchasing is already possible by means of publisher pay-per-view (PPV) provisions, by commercial document delivery transactions and through non-commercial (though by no means free) inter-library loan (ILL) processes. There is also significant faculty pressure on libraries to maintain subscriptions, a dynamic which does not really exist for standalone monographs.

For many publishers, there is concern that an article-based acquisition model may undermine the subscription base, causing them to be cautious about adopting such a model. This being the case, the Marriott Library was surprised and pleased to be approached by ReadCube, a new third-party broker looking to experiment with a model that would, if successful, make affordable article-based PDA a possibility in research libraries. This article reports on the concepts and structure of the ReadCube product and on the Marriott Library's experience with the pilot project.

ReadCube and the Marriott Library

Because the authors have argued that the internet has made possible a new scholarly information economy wherein journal articles could be sold as individual works rather than bundled artificially into journal issues,^{1,2} the Marriott Library was approached in 2012 by Labtiva, Inc, to collaborate on software development that would support an individual article delivery



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"... effectiveness could most usefully be defined in terms of actual use ..."

268 mechanism at a relatively low price point. The goal of this collaboration was to immediately supply journal content needed by patrons at a cost lower than inter-library loan or traditional pay-per-view.

Labtiva³ is a Cambridge, Massachusetts-based company that creates software tools for scholars. The company has developed a suite of software applications, collectively called ReadCube, that makes it easier to find, download, organize and use scholarly resources. There are two components to this: the ReadCube application, which is a next-generation reference manager, and the ReadCube Web Reader, a 'software as a service' (SaaS)-based reading platform.

Functioning as a reference manager, the ReadCube application software will automatically organize, archive and curate a scholar's PDF library, including the articles' supplementary information. ReadCube also features an enhanced PDF reading environment that makes clickable the citations, references and author names in PDF documents, similar to the way an HTML web page functions. Additionally, ReadCube provides built-in internet search and direct PDF download capabilities: researchers can identify and download content by clicking references, searching Google Scholar or PubMed, or using PMID and DOI identifiers. A ReadCube browser plugin is available that can bring citations or PDF copies of articles into ReadCube from a number of websites.

"...the features of ReadCube support the entire literature review cycle ..."

The ReadCube Web Reader is the online version of the software that includes the enhanced PDF reading functionality of the application but adds other features, such as altmetrics and reverse citations. The Web Reader is linked to from the article pages of participating publishers and connects researchers with related scholarly literature, multimedia, news coverage and social media. At the time of writing, publishers offering the ReadCube Web Reader include Nature Publishing Group, Palgrave, Wiley, Frontiers, PeerJ and eLife.

Together, the features of ReadCube support the entire literature review cycle from search and discovery to content acquisition, and from reading and annotation to identifying and obtaining additional resources. With the support of a third collaborative partner, Nature Publishing Group (NPG), the University of Utah and Labtiva cooperated on the development and pilot study of an additional feature called ReadCube Access, enabling PDA for articles.

The goal was to use ReadCube Access to provide researchers with instantaneous access to scholarly journal articles at a reduced price, with the understanding that the reduced price would come with content usage restrictions. For the trial, two price points were created: a lower-cost article rental and a higher-cost article purchase. Outside this trial, PPV charges in NPG journals run as high as US\$32 per article, and the Copyright Clearance Center royalties for most NPG journal articles are currently US\$35.50. During the ReadCube Access trial, article rental charges were US\$2.99 and purchased articles were US\$7.99 each. The rented article could only be read within ReadCube software, could not be printed, and became inaccessible after 48 hours. Purchased articles could only be opened within ReadCube but remained in the user's ReadCube library indefinitely. Purchased articles could not be printed, but they could be downloaded to any computer that had ReadCube installed, provided the user logged into ReadCube with the same account credentials. Researchers were prompted to select the rental or purchase choice from a pop-up window when they attempted to obtain an article from unsubscribed content, as shown in Figure 1. A forthcoming generation of ReadCube Access will have additional purchase choices available, including the ability to print the article or maintain access to the article in cloud-based storage.

The screenshot shows a web browser displaying a Nature Communications article. The article title is "Strong plasmonic e... in graphene". The authors listed are T.J. Echtermeyer¹, L. Britnell², P.K. Jasnosi¹, A.A.C. Ferrari¹ & K.S. Novoselov². A ReadCube overlay is centered on the page, offering two options: "Rent Article" for 48 hours and "Buy Article" for instant access. The article text begins with: "From the wide spectrum of potential applications of graphene, ranging from transistors and chemical sensors to nanoelectromechanical devices and composites, the field of photonics and optoelectronics is believed to be one of the most promising. Indeed, graphene's suitability for high-speed photodetection was demonstrated in an optical communication link operating at 10 Gbits⁻¹. However, the low responsivity of graphene-based photodetectors compared with traditional III-V-based ones is a potential drawback. Here we show that, by combining graphene with plasmonic nanostructures, the efficiency of graphene-based photodetectors can be increased by up to 20 times, because of efficient field concentration in the area of a p-n junction. Additionally, wavelength and polarization selectivity can be achieved by employing nanostructures of different geometries." A list of 19 references is visible on the right side of the page.

Figure 1. ReadCube prompts user for article purchase choice

The University of Utah subscribes to 79 of the 108 online journals offered by NPG, but the Library does not provide access to the full run of all 79 journals. Using ReadCube Access, researchers at Utah were able to access and read articles in all years of all NPG journals. If the Library did subscribe to a title that a researcher wished to use, access was provided to the article via the Library's subscription or site license. If the article needed was not available through a subscription, the researcher was still able to immediately access the article, and the Library was billed directly at the discounted rate. ReadCube software was freely available to trial participants, with University e-mail credentials used as authentication. Future versions of ReadCube Access will support IP-based authentication.

Approximately 1,320 faculty, post-doctoral fellows and graduate students in science and engineering at the University of Utah were invited to participate in the trial. The trial ran for one academic year.

The authors hoped the trial would answer a number of questions: Would a PDA model applied to journal articles result in abuse or an unsustainable heavy use of resources? How would the costs of ReadCube Access article purchases compare with ILL and subscription costs? Would researchers prefer ReadCube Access or ILL services, and how would the ReadCube Access use compare with ILL requests for articles from NPG journals? Would researchers accept this method of acquisition as an alternative to subscriptions? How would researchers accept digital rights management (DRM) technology applied to journal articles? Would students and faculty accept the requirement that ReadCube software be used to obtain, read and store the articles?

"... a web-based software solution is critical for people who primarily use mobile devices ..."

Feedback from pilot participants suggests that users appreciate the immediacy and efficiency of ReadCube Access. For most users, the software was simple to utilize and the articles were easy to acquire. The early version of ReadCube Access used in the trial required participants to install the ReadCube desktop application. While a client-based application is desired by some, especially for those needing to feel like they permanently acquired downloaded content, a web-based software solution is critical for people who primarily use mobile devices, who often use shared computers such as those in the library, or who cannot install application software on their laboratory or

270 office computers. During the pilot, ReadCube searching was limited to Google Scholar and PubMed; however, some users desired the ability to search other databases, such as Biosis and Scopus, to discover or find articles. Some users criticized the lack of content from other publishers. The Library received a handful of complaints about the DRM restrictions from users who wanted to print articles or share files with others in their laboratory.

Because some NPG journals are heavily used by University researchers, the Library had some fear of runaway costs or program abuse. However, utilization of the service was actually lower than expected. Of 1,320 invited participants in the trial, 102 registered to use ReadCube Access. Forty-one articles were purchased and two were rented during the ReadCube Access trial period. There were two primary reasons for the lower-than-expected use. Firstly, medical researchers were excluded from participating in the trial because their departments operate under different budgets and reporting lines within the University, and they are served by an administratively separate library. Coincidentally, much of the unsubscribed NPG content was in medical subjects. Secondly, the requirement to use the desktop application was perceived as a barrier by some. This barrier will be removed in the near future, when Labyrinth launches the web-based version of ReadCube Access that integrates into the publisher's website.

"The Marriott Library is very satisfied with the economic potential of ReadCube Access."

The pilot study revealed that use of ReadCube Access correlated well with use of ILL services. For example, before the ReadCube Access trial began, several faculty and graduate students had requested subscriptions to *Nature Climate Change* and to *Nature Communications*, but the Library could not afford them. During the academic year, 12 articles were acquired by researchers from *Nature Climate Change* using ReadCube, and the Marriott Library filled three ILL requests for articles in that journal. *Nature Communications* had 25 ReadCube downloads and the Library filled 30 ILL requests.

The Marriott Library is very satisfied with the economic potential of ReadCube Access. The pilot study revealed that ReadCube Access is more cost effective than inter-library loan or a subscription for high cost, low use journals. Table 1 below illustrates the cost comparison for the two journals in demand, mentioned previously.

Title	Subscription cost	ReadCube uses Sept – June 2013	ReadCube costs Sept – June 2013	ILL uses Sept – June 2013	ILL costs Sept – June 2013
<i>Nature Climate Change</i>	US\$4,985	12	US\$96	3	US\$16
<i>Nature Communications</i>	US\$3,525	25	US\$195	30	US\$982

Table 1. Cost comparisons for ReadCube Access, inter-library loan and journal subscriptions for two NPG journals. The Table is reproduced from an article by one of the authors published in *Serials Librarian*⁴

The ILL costs shown in the table include average staff, equipment, management tools and software expenses as calculated by Leon and Kress⁵. In the case of these two journals, the estimated workflow costs were calculated to be US\$5.21. The actual per article and Copyright Clearance Center fees ranged from US\$33.50 to US\$35.50 per article. To save time and Copyright Clearance Center fees, several articles requested from ILL were instead provided by purchasing them on nature.com using the PPV feature.

Inter-library loan services can be cost effective at very low demand levels for a given title. However, when the demand for articles from a specific title exceeds the CONTU Guidelines' 'rule of five', the costs to provide articles from that specific journal increase considerably due to Copyright Clearance Center fees or pay-per-view charges. For example, at the University of Utah in 2013, the effective cost per article from *Nature Communications*, provided through ILL mechanisms, would quickly approach US\$40.71 as the demand exceeds six uses. With ReadCube Access, the cost per article holds steady at US\$7.99. A

271 subscription becomes the least expensive mechanism for providing access when the demand for *Nature Communications* exceeds 442 article downloads per year. ReadCube Access, as deployed at the University of Utah, is the most cost effective way to obtain access to *Nature Communications* when the demand ranges between six and 442 article uses per year.

Conclusion

The ReadCube Access pilot was designed to enable individual researchers to acquire needed journal articles using a just-in-time, patron-driven approach. Applying digital rights management technology to articles in order to keep costs low is a new concept. ReadCube Access offers a means for the immediate, efficient provision of articles at a cost lower than ILL, document delivery or PPV.

“...an effective way for libraries to deliver journal article content within a patron-driven acquisition model.”

An efficient, cost-effective, just-in-time, patron-driven means for the acquisition of journal articles is an important part of a legitimate access strategy that also includes subscriptions or packages, aggregators, ILL, document delivery, open access and PPV. Our pilot study suggests that ReadCube Access provides an effective way for libraries to deliver journal article content within a patron-driven acquisition model.

References and notes

1. Anderson, R, IMHBCO (In My Humble But Correct Opinion) The Journal Issue and the Record Album: Two Fundamentally Irrational Information Products, *Against the Grain*, 2002, 21(5), 88–89.
2. Anderson, R and Moore, K B, Is the Journal Dead? Possible Futures for Serial Scholarship, *Serials Librarian*, 2013, 64(1–4), 67–79. <http://dx.doi.org/10.1080/0361526X.2013.759877> (accessed 28 August 2013).
3. Labtiva: <http://www.readcube.com>
4. England, M and Jones, P, Diversification of Access Pathways and the Role of Demand Driven Acquisition – A Case Study at the University of Utah, *Serials Librarian* (in press).
5. Leon, L and Kress, N, Looking at Resource Sharing Costs, *Interlending and Document Supply*, 2012, 40(2): <http://dx.doi.org/10.1108/02641611211239542> (accessed 28 August 2013).

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