


Getting the balance right with ebooks

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Abstract:

This paper explores the challenges of provisioning a rapidly growing collection of ebooks using Demand Driven Acquisition (DDA) and Evidence-based Acquisition (EBA), the advantages and disadvantages of each model, the impact of usage and purchase trends, and whether these models provide enough evidence to establish future demand and content value. It also briefly examines the impact of various types of discovery on ebooks, in contrast with ejournals.



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Introduction

Since 2005, Queensland University of Technology (QUT) has built a collection of more than 750,000 ebooks, using an e-preferred strategy in combination with a preference for access models rather than ownership models. Over 400,000 ebook titles are made accessible via ProQuest Ebook Central, using the Demand Driven Acquisition (DDA) model. The JSTOR Demand Driven Acquisition (DDA) collection was implemented at QUT in 2015, further expanding the ebook collection. From 2017, QUT has also commenced utilising the recently released ProQuest Ebook Central Access to Own (ATO) model which is a DDA model developed to address library concerns regarding short-term loan (STL) pricing. The QUT ebook collection is now twice as large as the print book collection, and used nearly five times as much. The exponential growth in size and usage of the ebook collection would not have been possible without demand-driven acquisition.

Despite the integral role of DDA to QUT's successful ebook collection expansion, the Library further diversified its ebook procurement from early 2015, implementing evidence-based ebook acquisition (EBA) programs with several publishers. This paper explores the challenges of building and managing a rapidly growing collection of ebooks using DDA models, in contrast with QUT's more recent transition to EBA options.

The paper contrasts the advantages and disadvantages of each of these business models, as experienced at QUT, and analyses return on investment as measured by cost per use and cost to own. The paper includes an analysis of post-purchase usage for titles acquired across the various models and an evaluation of whether and how these models provide enough evidence prior to purchase to establish future demand and value of the content.

The analysis includes the impact of usage and purchase trends when implementing a combined DDA and EBA purchasing model. JSTOR had recently released an EBA model into the market, and on 1 July 2017, QUT transitioned from the DDA model to a combination of DDA and EBA programs on the JSTOR platform.

The paper includes analysis by QUT and JSTOR on the impact the various types of discovery have on ebook usage. Usage data provided by JSTOR is discussed to understand ebook discovery and how this compares to the discovery that occurs for e-journals.

Literature Review

Carrico et al. (2015) highlight the increasing popularity of the DDA model as a mainstay for ebook collection building in academic libraries. The authors compare ebook cost-usage data across different acquisitions styles and disciplines, finding that, while there are differences between the acquisitions strategies and disciplines in cost and use, overall, DDA ebook purchases had the highest use and the lowest average cost per use compared with e-books purchased in packages and firm order e-books.

Costello (2017a) reviews Carrico et al., noting the relatively small sample size and issues with generalisability common to most, if not all, of the single site acquisitions studies of this kind. More acquisitions research from consortia and conglomerate

data is needed to understand the way disciplines and acquisitions strategies impact use.

Costello (2017b) examines the literature on the subject of traditional and demand-driven acquisitions, and finds that while there is some evidence that DDA collections have better reuse than traditionally selected content the evidence is inconclusive.

While there are numerous papers reviewing the advantages of the DDA model, there is less written on the issues with DDA, the reasons for EBA emergence, the potential of EBA and the pros and cons of each model. Proctor (2015) reviewed the Elsevier EBA model (the sunk-cost model) trialled at the University of Wyoming and highlighted the risk of committing funds upfront when books may receive low usage.

Buck (2017) highlights the appeal of the DDA model to quickly build and maintain affordable access to a current collection of multiuser e-books from a wide range of academic publishers, without spending collection dollars on irrelevant materials, paying only for content that is used and with minimal demands on librarian time. One of the appeals of aggregator-based DDA is fewer ebook platforms for users to learn and use. However, aggregator-based DDA is no longer affordable as the primary collecting tool for the author's small, liberal arts university library, given steep STL cost increases, embargoes, and elimination of STL by some publishers. Average STL cost increases of 76%, and content reductions, mean that additional collecting mechanisms must be trialled and evaluated. The future of DDA is uncertain, with publishers promoting other models, including evidence-based access or acquisition (EBA), to generate more revenue. The appeal of paying only for content that is used may still be realised via EBA and other non-aggregator DDA programs, and trials are needed to evaluate their cost-effectiveness.

EBA allows the library to have access to a pre-selection of content (years and subjects) for a period of time for a predetermined fee. The Library then applies usage data to select the most used titles. Borchert and Cleary (2015) contrast the advantages and disadvantages of DDA and EBA. DDA advantages include:

- supports the access rather than ownership approach, wherein a large number of titles can be made available across multiple publishers without an upfront commitment
- the Library pays only for what is used
- the STL model is flexible.

Disadvantages of DDA include:

- the STL costs themselves
- cost increases with demand
- higher costs per use and per-title costs compared to EBA and some other models
- higher cost of ownership than other models
- Libraries do not end up owning as much content compared to other models
- increasing content embargoes imposed by some publishers
- publisher price increases affecting STL costs

- there can be republishing of old titles
- access usually involves Digital Rights Management (DRM) detrimentally affecting the user experience for access to ebooks.

Advantages of EBA include:

- supports the collection development approach to owning content
- costs are known upfront
- no STL costs
- more titles are owned compared to DDA
- the library can use evidence and exercise control over what is owned
- lower cost per use and cost to own per title
- access is via the publisher rather than an aggregator platform so there is no DRM

Disadvantages of EBA include:

- the library is pre-selecting content for patron selection and there is a ratio of titles to payment that limits the amount of content to be included compared to DDA
- title usage may not be sufficient to select content to own
- each EBA is managed one publisher at a time and complexity arises as every publisher is different
- issues with data received from publishers

The authors note that the two programs need not be mutually exclusive and that EBA can be used to supplement a DDA program. However, while not a disadvantage of EBA per se, de-duplication against DDA and owned content further complicates EBA management.

At QUT, Demand Driven Acquisition Predominates

QUT has always had a preference for access over ownership models, where available, in order to spread its buying power further. About half the QUT ebook collection is available from ProQuest Ebook Central under the Patron Driven Acquisition (PDA) ebook business model. PDA has been effective in quickly growing the QUT ebook collection. It has allowed QUT to provide access to far more ebooks than would otherwise have been afforded.

JSTOR DDA at QUT

The JSTOR DDA model was particularly attractive to QUT, due to the absence of STL charges. Already satisfied with the success of the ProQuest DDA and due to the attractive features of the JSTOR model, QUT commenced a DDA program with JSTOR in March 2015, with a small collection of 138 ebooks available via the QUT Library catalogue and in QuickFind, the QUT-branded ProQuest Summon discovery layer. This was expanded in late 2015 to include 4,532 ebooks and again to 44,243 titles in 2017 when QUT implemented the entire JSTOR collection with the exclusion of content that was understood to be irrelevant to QUT courses.

Diversification - Evidence-based Acquisition (EBA)

By 2015, the sustainability of the DDA model for QUT was threatened by the combined effects of increased usage and rising short-term loan and auto-purchase costs, and further exacerbated by both the implementation of STL embargoes by an increasing number of publishers and the weakening exchange rate of the Australian against the US dollar. QUT needed to diversify its ebook acquisition strategy and minimise its exposure to short-term loan charges in particular. Around this time, a few publishers were releasing EBA models.

DDA had for ten years proved an efficient model to provide access to a large collection of ebooks with minimal intervention required from library staff. Despite this success, in 2015, QUT elected to trial the EBA model with Elsevier, Taylor & Francis, and Wiley. The trial would determine if the EBA provided a comparable level of access while improving budget sustainability.

Based on a successful 2015 trial with these three publishers, in 2016 the QUT EBA program was expanded to six publishers, adding in Cambridge, Oxford and a small EBA with Greenleaf Publishing. In Table 1 below, arrows are used to show the return on investment comparison for those models operating in both years. All the EBA programs have improved their performance in terms of increased usage and better return on investment in 2016 (or at least equivalent in the case of Taylor & Francis).

Table 1: Return on Investment Comparison: DDA, Collection and EBA¹.

	# Titles	Cost per Use A\$	Use per Title	Not Used	# Owned	Cost to own A\$
ProQuest DDA	400,000	\$33.67*	3.25**	N/A	27,646	\$329***
JSTOR DDA	12,832	\$6.24****	1.29	N/A	873	\$104
Springer Collections	39,640	\$2.50*****	25.17	47%	39,640	\$30
Cambridge EBS	6,971	\$1.60	1.78	87%	97	\$206
Elsevier EBS	1,658 ↑	\$9.65 ↑	9.58 ↑	53% ↓	481 ↑	\$317 ↑
Greenleaf EBS	267	\$7.11	1.07	81%	15	\$233
OUP EBS	4,682	\$4.25	1.74	76%	276	\$126
Taylor & Francis EBS	18,277 ↑	\$24.89 ↓	0.79 ↑	70% ↓	1,884 ↑	\$191 =
Wiley EBS	19,000 ↑	\$2.06 ↓	6.4 ↑	12% ↓	832 ↑	\$200 ↓

The QUT EBA programs provided a cost-effective alternative to the ProQuest DDA program, as evidenced by lower cost per use of the EBA compared to QUT's 2016 average ProQuest STL cost and a lower cost to own. However, the ProQuest cost to own is cumulative across the entire history of the QUT DDA program, and as the same methodology is not used for all vendors the calculations in the table are not directly comparable and are indicative only. Borchert and Cleary (2015) compare the cost per use of ProQuest DDA against the cost per use of the Elsevier, Taylor & Francis and Wiley EBA. They used the same methodology to calculate for both programs, including a total cost of ownership breakdown by publisher. Overall, they found that the cost per use and the cost to own were lower for EBA compared to the ProQuest DDA, particularly due to the high average STL costs and the high number of STL transactions compared to the number of titles eventually owned.

The cost per use of three of six EBA programs (Cambridge, OUP and Wiley) is lower than the cumulative JSTOR DDA cost per use. The JSTOR DDA cost per use, while not directly comparable, is low compared to the ProQuest average short-term loan cost in 2016. The JSTOR DDA is a relatively cost-effective program when compared against several of these alternatives, as it does not include short-term loan charges.

In the case of two EBA programs (Cambridge and Wiley), the cost per use is lower than the Springer collection purchase model but higher for all other EBA programs. Of the collections owned by QUT, Springer consistently provides the best return on investment as measured by cost per use².

Like most collections purchased by QUT², a high proportion of EBA content was not used. This is a relevant consideration when evaluating EBA models, as the cost of the EBA is proportionate to the size of the collection made available for access, and hence the Library is paying a premium for content that achieves no investment return. The same comparison is not made for ProQuest DDA, as there is no upfront purchase commitment, and hence the proportion of titles that are not used is not considered relevant when considering the model's return on investment. In the case of JSTOR DDA, there is a deposit required; however, the proportion of unused content is also not considered relevant, as the size of the collection does not affect the cost and the Library only pays for what is used.

Reliable and comprehensive supply of MARC records complicates EBA management and failure to add content to discovery channels in a timely manner impacts use and return on investment. When evaluating EBA as a collection development program there are additional considerations. Failure to update records as EBA programs end or change coverage creates frustration for users who may encounter links to content which is no longer accessible due to failures in MARC record delivery and updating of the discovery interface. As DDA content moves in and out of the Library's ProQuest Ebook Central profile, QUT receives a streamlined monthly delivery of MARC record additions and deletions, thereby minimising the risk of "dead links". While some EBA publishers utilise the services of utilities such as OCLC to assist with record delivery, most are ill-equipped to offer a reliable service for updating discovery records.

As indicated by Borchert and Cleary (2015), a significant issue that complicates the management of EBA in combination with DDA and other purchase models, such as subscription and outright purchase, is de-duplication of content. To ensure that

expensive short-term loan transactions are not triggered for titles already accessible via the EBA programs, the ISBN lists for the EBA programs must be loaded to the ProQuest Ebook Central suppress list. This is further complicated when the ISBN used by the publisher for the aggregator access does not match the ISBN used on the publisher platform. To manage this issue, QUT must obtain a list of ProQuest ISBNs from Taylor & Francis, as loading the publisher ISBNs will not suppress the EBA titles from the ProQuest DDA. In addition to avoiding wasteful spending, timing the EBA content suppression from the DDA with removal of DDA access via the discovery layer is critical to avoid broken links and negative impacts on library clients.

Operating EBA in combination with DDA is further complicated by approval-plan purchasing. GOBI Library Solutions from EBSCO (GOBI) already de-duplicates QUT approval plan selections against the QUT ProQuest Ebook Central DDA profile, and the need for GOBI to de-duplicate new title selections against the EBA programs was an additional complexity, with QUT needing to inform GOBI of any new and ongoing EBA for this purpose. GOBI used imprint restrictions to exclude Wiley, Taylor & Francis and Elsevier from the QUT DDA profile and approval plan selection. This is applicable only when the EBA includes the front-file content (latest releases). QUT's EBA program does not include current-year content from Elsevier for instance, as Elsevier does not offer EBA on front-list titles until well into the calendar year. The Library must be clear in communications with the monograph vendor to ensure that only the required EBA de-duplication is performed. Another example of complexity with de-duplication can occur when the EBA program does not cover the calendar year. The Taylor & Francis EBA needed to be de-duplicated against the DDA and approval plans for only the first half of the year, as QUT had secured access to only the first half of 2016 new releases.

Another challenge in managing EBA programs is accounting for content that is excluded from the EBA. Most EBA publishers have chosen to exclude premium content such as textbook titles. Hence, de-duplicating EBA against other selection programs, such as DDA and approval plan, using imprint rather than specific ISBNs will result in failure to secure access to this premium content. As new content is added to both EBA and DDA programs, de-duplication requires ongoing vigilance and maintenance to ensure that funds are not wasted on loans and purchases. Weekly reports of loans and purchases are sampled at QUT, to ensure there is no duplication of expensive loan transactions against content accessible via the EBA.

Once the EBA program is completed, the selection of content is another challenge, as the final content selection often needs to be completed in a short time-frame. While most publishers allow up to two months after the EBA period for final content selections, others require the selections to be completed prior to the completion of the program (one licence stipulates sixty days prior to expiry though in reality there is some flexibility applied). If existing owned content was not eliminated from the EBA collection prior to the EBA commencement, selections need to be de-duplicated to avoid purchasing the same material twice. In some cases decisions on concurrent user levels are required, further complicating the process. Identifying titles to the correct value to use all the committed funds requires massaging, as different discount levels may apply based on the number of titles selected. List prices may change between EBA commencement and finalisation, requiring further tweaking after the final selections have been submitted to the publisher.

In summary, EBA programs add another level of complexity to an already complex ebook acquisition milieu. There is a strong case for an aggregator to offer access to publisher EBA programs to help manage some of this complexity on behalf of libraries.

Despite these challenges, QUT has evaluated two years of EBA programs as a success in providing a viable, cost-effective and budget-sustainable alternative to its primary DDA program, while maintaining access to a growing collection of titles. QUT has applied a strategy of operating EBA programs for those major publishers with high STL charges as a percentage of book price. This strategy has worked in combination with a trial of the ProQuest ATO model for selected publishers. As a result, average STL cost and overall demand-driven expenditure has been capped. Between 2014 and 2016 the number of STLs and total STL expenditure have declined by 20% and 40% respectively. The increasing trend for publishers to place embargoes on STLs or remove STLs entirely has been countered to some extent via EBA.

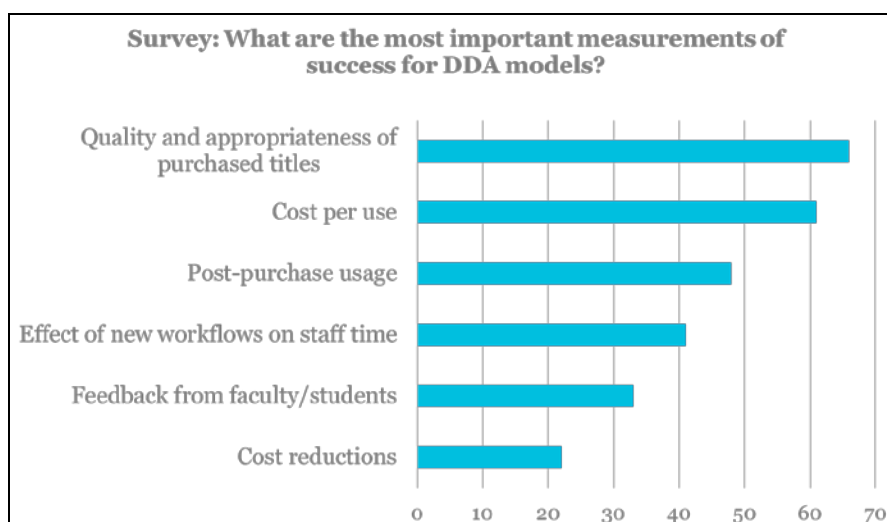
Based on this improved budget sustainability, and despite the increased workload, QUT has continued the DDA and EBA combination strategy, continuing all six EBA programs in 2017. From 2017, QUT has also trialled the Access to Own (ATO) model with ProQuest Ebook Central, as another strategy to curb exponential increases in short-term loan costs and to combat publisher embargoes on front-list content. Following the trial of ATO during 2017, QUT will further review the implications for EBA.

JSTOR - Development of Evidence-Based Acquisition

JSTOR - Experience with EBA Pilot

JSTOR conducted a survey of participants in its DDA program in February 2016 and received feedback from 91 librarians at institutions worldwide. When asked about what libraries considered a key measurement of success, the most important measurement was the quality and appropriateness of purchased titles, followed by cost per use and post-purchase usage (see Figure 1).

Figure 1: 2016 JSTOR Survey Results of 91 Responding DDA Participants



On the whole, libraries had a positive experience with the DDA model, and it ranked highly on the key measurements identified above. However, it was also revealed that some institutions had challenges when implementing a DDA program, including concerns over duplicate purchases; MARC record management; budgeting for adequate funding in order to maintain access through the academic year; and the desire for more mediated title selection. JSTOR considered it important to address these challenges by piloting an evidence-based acquisition model.

JSTOR works to serve the needs of both libraries and its academic publisher partners. Thus JSTOR's goal with EBA, as with all its offerings, is to help address challenges the library community faces while also ensuring that a stable, sustainable program is developed for publishers.

The JSTOR Evidence-Based Acquisition model currently has 39 publishers and more than 27,000 titles. This includes all backlist titles from the publishers participating in the program, defined as 3 years before the current copyright year. Much like JSTOR's "moving wall" for journals, a new copyright year is added into the EBA collection each year, growing it by an estimated 2,000+ titles. JSTOR anticipates that the program will also grow as new publishers join.

Backlist ebooks see high levels of usage on JSTOR, just like archival journals do. Many monographs remain important in their fields long after they are published, especially in the humanities and social sciences. The ease of discovering backlist monograph content on JSTOR, alongside comprehensive journal backfiles, enables scholars to understand and build upon the history of their fields. In reviewing the usage data of institutions that participate in the DDA program, it was revealed to JSTOR that when institutions make both frontlist and backlist content available to researchers, 87% of the usage is of backlist content. When analysing the usage at QUT, JSTOR found that similarly 86% of overall usage was of backlist titles. The high usage of backlist content evident across the DDA program increased JSTOR's confidence in the value the backlist content would provide for libraries in the EBA model.

In order to provide a fair model to publishers, which assume some risk in the EBA model, in that their books may be used but not ultimately purchased, the program designates that a portion of the monies that libraries put into EBA goes towards an access fund, from which publishers are paid based on the usage of their titles. In this way, JSTOR is able to provide a fair business model for publishers, one that provides some compensation for usage even if their titles are not purchased.

This model also provides libraries with the ability to access all titles, and only acquire titles that are determined to be the most important to the library. Libraries are able to utilise usage as a guide, but not as the sole determinant of purchases. Usage reports are provided to assist the libraries in evaluating titles in EBA for acquisition.

In order to prevent duplicate purchasing of titles previously acquired elsewhere, JSTOR will also conduct a holdings comparison of all print and electronic ebooks at the library, to assist in the EBA evaluation when titles are selected for acquisition. This will help the library identify unique titles with the highest usage.

QUT experience with JSTOR EBA

QUT commenced the JSTOR EBA program on 1 July 2017. Consequently, as at November 2017 the program had only been in operation for about six weeks, providing limited data on which to base any conclusions.³

The EBA does not add any additional content to QUT's collection but allows QUT to assess which is the best value JSTOR model, DDA or EBA. The EBA has the advantage of fixed up-front commitment. The other typical EBA model advantage of avoiding STL costs does not apply when comparing JSTOR EBA and DDA.

Any comparison of JSTOR EBA and DDA cannot be done on a like-for-like basis, due to the different sets of content included in the two programs. The EBA does not include front-list titles (that is, the most current 3 years). For example, at the beginning of 2018, all ebooks with a copyright year of 2015 will be moved into the EBA collection for all participating publishers in the program. So QUT still needed to operate its DDA program to gain access to those titles. Accordingly, it is not possible to do a direct comparison between DDA and EBA models because of the different sets of content.

QUT used the MARC record services of OCLC to de-duplicate its DDA program, retaining only the current three years for DDA and the back-file for EBA. There were teething issues in JSTOR's management of the DDA and EBA de-duplication. For the first few months, QUT had records for only a small proportion of the expected EBA content, affecting the success of the initial stages of the trial. With these issues resolved, the de-duplication appears to be working effectively.

QUT and JSTOR – Analysis of Post-purchase Usage

The following section analyses the impact of usage and purchase trends and whether these models provide enough evidence prior to purchase to establish future demand and content value. In addition to providing enough evidence for content acquisition does an EBA program provide a strong level of evidence for future action? Are the purchase-trigger event in DDA and the selection of content to own via EBA good indicators of post-purchase use?

Reuse of owned ProQuest Ebook Central DDA Content

QUT data on DDA reuse supports the somewhat inconclusive literature that reuse on demand-driven ebook content out-performs librarian-selected ebook content (Schroeder, 2012; Way and Garrison, 2011; Costello, 2017b).

Figure 2: Reuse of ProQuest Ebook Central Owned Content

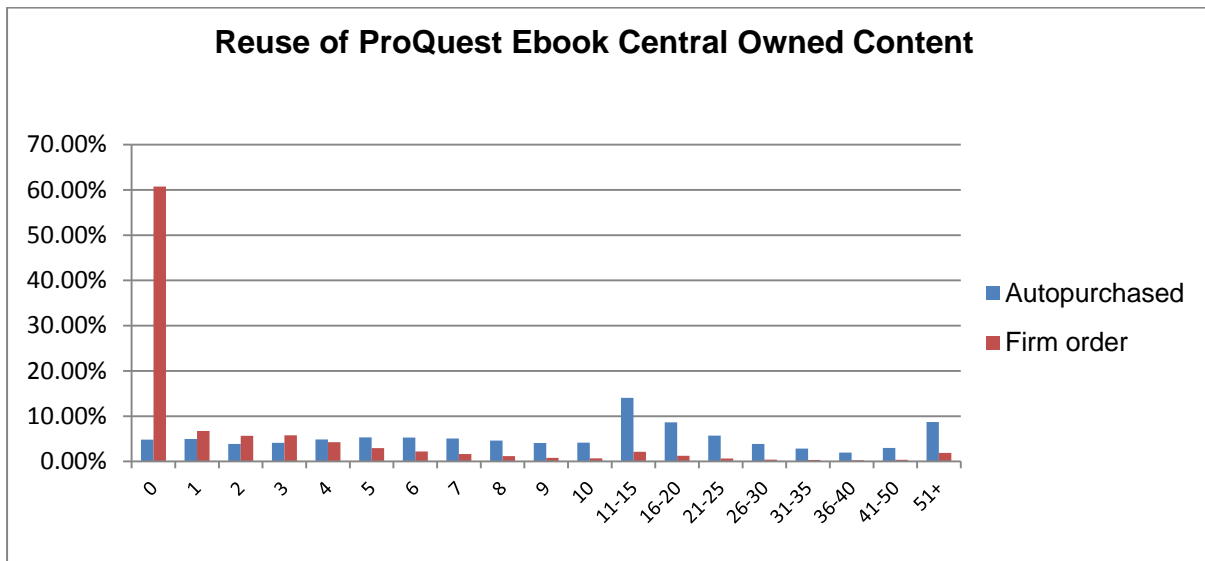


Figure 2 shows the percentage of re-use of QUT ProQuest Ebook Central purchased items separated by method of purchase, including all titles purchased to 2016. The QUT data on reuse confirms earlier QUT findings that re-use on demand-driven owned content continues to be higher than firm order (librarian and approval-selected) with less occurrence of low usage and highest re-use on the demand-driven selections.

Figure 3: Reuse of all owned ProQuest Ebook Central - purchased within a 2 year period

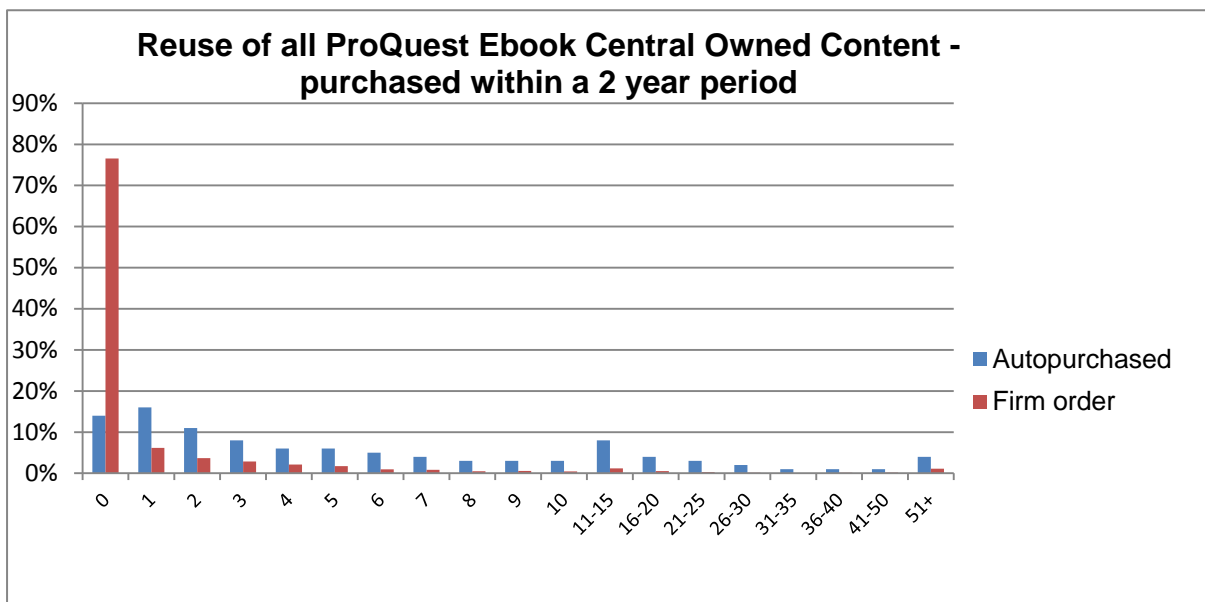
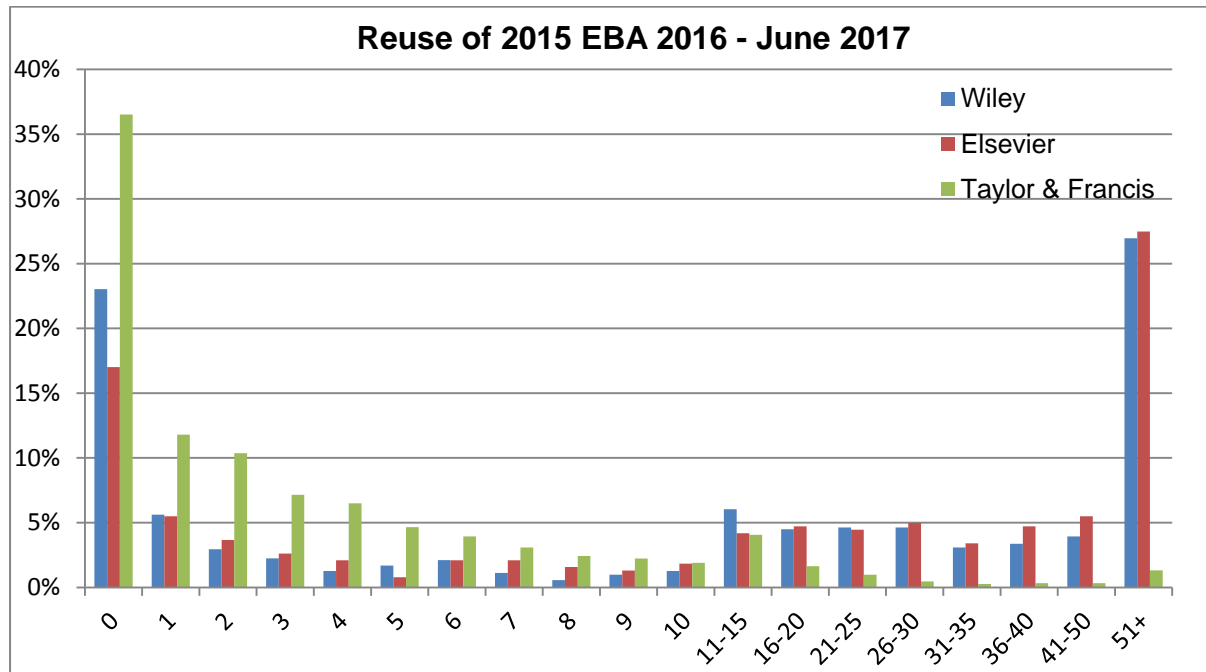


Figure 3 includes items purchased between 1 January 2015 and 31 December 2016, and this data for more recently purchased items confirms the reuse pattern across the entire QUT ProQuest Ebook Central owned collection as outlined above.

QUT data on reuse of EBA-acquired content is mixed, as evidenced in Figure 4 below, which depicts the 2016 – June 2017 reuse of content from three EBA 2015 programs.

Figure 4: Reuse of titles acquired in QUT 2015 EBA programs 2016 – June 2017



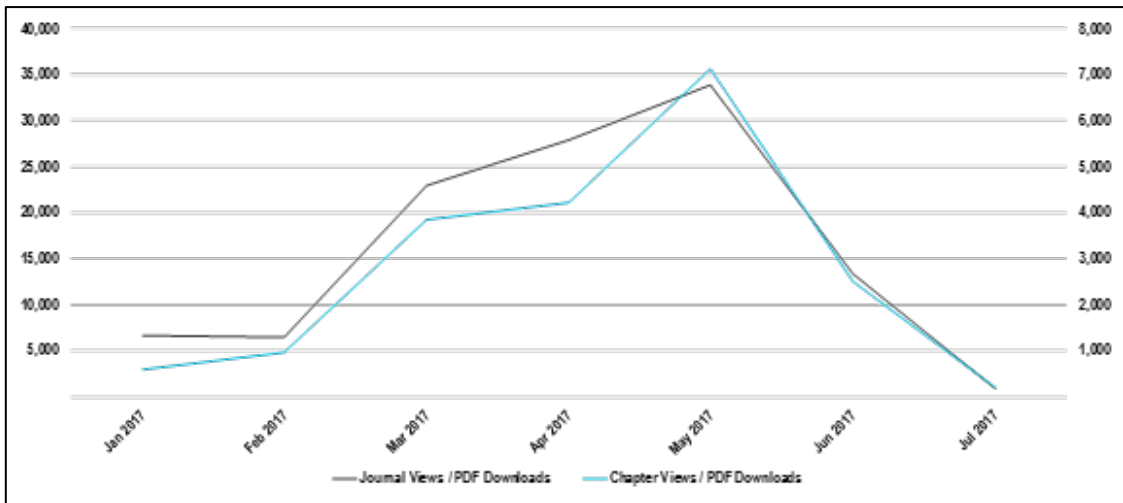
The Elsevier EBA was nearly as cost-effective when compared to DDA, as measured by zero reuse of owned content, with 17% of the Elsevier EBA owned content showing zero reuse (Figure 4) compared to 14% of DDA titles (Figure 3). Wiley EBA purchases were less likely predictors of future use at 23% zero reuse, while Taylor & Francis was the worst performing on this benchmark of cost-effectiveness, with 37% of titles showing no further use after purchase. When comparing zero reuse, all EBAs were better predictors of future demand than firm orders (77%).

Of the three EBA programs, Taylor & Francis was also least cost-effective as measured by “high reuse” of owned content, with only 35% of titles showing 4 or more uses compared to 54% of DDA. The other EBA programs performed better than the DDA, with Elsevier (71%) and Wiley (66%) used 4 or more times. In terms of very high use, only 11% of Taylor & Francis titles were used 10 or more times, compared to 27% of DDA. In contrast, 61% of Elsevier titles and 58% of Wiley titles met this benchmark of very high reuse, significantly out-performing the DDA. When measured by “high reuse” and “very high reuse” all EBAs were again much better predictors of future demand when compared to firm orders (11% and 4%).

Discovery and Impact on Usage

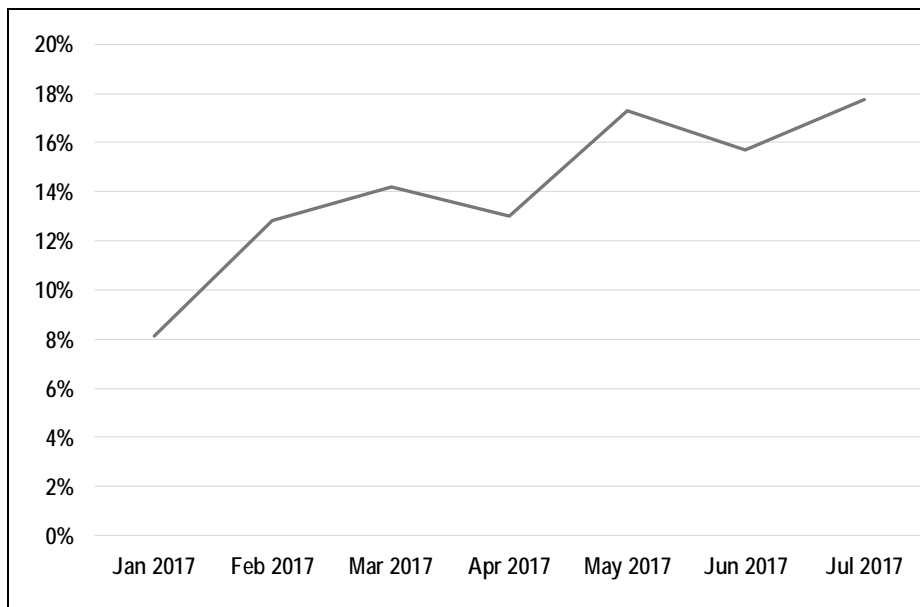
Institutions that have participated in both ebooks and ejournals on the JSTOR platform have seen usage patterns that are similar across an academic year. When the overall usage of the JSTOR platform was analysed at QUT, it was determined a similar pattern occurred with ebooks and ejournals after the full collection of DDA titles were made available in January 2017 (see Figure 5).

Figure 5: 2017 Monthly JSTOR ejournal and ebook usage at QUT



In reviewing QUT's usage of ebooks on JSTOR, JSTOR looked at total views and downloads of all content (ebooks and ejournals) on the JSTOR platform, and measured the percentage of total usage that was derived from ebooks over time. Use of ebooks as a percent of total usage has steadily grown; by July 2017, close to 18% of QUT's total usage of JSTOR came from ebook chapter views and downloads (see Figure 6).

Figure 6: % of ebook Usage of Overall Usage on the JSTOR Platform



In reviewing the referrer data for QUT, which was provided by JSTOR and shows a user's starting point prior to accessing content on JSTOR, it was determined that, for journal articles, 27% of users started at JSTOR; 47% of users came in via Indexed Discovery Services, and 12% via Google Scholar (see Table 2). When this was compared to the referrers for ebook chapters, it was determined that 42% of users started at JSTOR, followed by 38% from Indexed Discovery Services. The data shows that while the majority of journal articles on JSTOR are discovered via

Indexed Discovery Services, most ebook usage is driven by users already on the JSTOR platform.

Table 2: Referrer Data at QUT for Journal and ebook Usage

Referrer	QUT	
	% of Journal Total	% of eBook Total
JSTOR/No Referrer	26.79%	42.43%
Indexed Discovery Service	46.65%	37.52%
Resumed Visit	3.55%	13.69%
Academic	6.02%	4.77%
Google	4.49%	1.14%
Other	0.60%	0.16%
Commercial Search	0.04%	0.15%
Google Scholar	11.85%	0.14%
Grand Total	100.00%	100.00%

When QUT was compared to referrer data for all JSTOR participants in Australia, it was shown that QUT had significantly more discovery of journal and ebook content through Indexed Discovery Services and less discovery directly on the JSTOR platform compared to other academic institutions in Australia. This was consistent when compared to academic institutions in the United States and the United Kingdom (see Table 3).

Table 3: Referrer Data in Australia, United Kingdom and United States

Referrer	Australia		United_Kingdom		United_States	
	% of Journal Total	% of eBook Total	% of Journal Total	% of eBook Total	% of Journal Total	% of eBook Total
JSTOR/No Referrer	54.85%	63.17%	40.01%	41.33%	42.41%	49.60%
Indexed Discovery Service	8.89%	5.04%	8.47%	11.57%	8.57%	3.72%
Resumed Visit	6.02%	14.54%	8.44%	18.56%	10.32%	19.02%
Academic	11.54%	14.50%	10.19%	10.00%	14.29%	17.87%
Google	5.83%	2.21%	18.12%	15.83%	11.40%	7.04%
Other	0.76%	0.16%	2.14%	0.87%	2.19%	1.98%
Commercial Search	0.07%	0.06%	0.56%	0.94%	0.35%	0.36%
Google Scholar	12.04%	0.32%	12.07%	0.90%	10.47%	0.40%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

With a significant amount of ebook discovery occurring on the JSTOR platform, it could be expected that the most highly-used disciplines for ejournals on JSTOR would align with the most highly-used disciplines for ebooks. When reviewing the ejournal and ebook usage data for QUT, JSTOR found that 73% of all ebook usage was concentrated across the top 15 disciplines for QUT journal usage. Eighty-one percent of the total ebook usage occurred across the top 20 disciplines (see Table 4).

There was an even higher correlation between JSTOR ejournal and ebook discipline usage for academic institutions in the United States and United Kingdom, where the majority of both ejournal and ebook discovery occurred directly on the JSTOR platform rather than via Indexed Discovery Services. It is probable that this is due to users searching directly on JSTOR and selecting both ejournal and ebook content from their search results.

Table 4: ebook Usage across Top JSTOR Archive Collection Disciplines

JSTOR Discipline	QUT % of eBook Usage	Aus % of eBook Usage	UK % of eBook Usage	US % of eBook Usage
Archive Collection Top 15 Disciplines	73%	78%	85%	87%
Archive Collection Top 20 Disciplines	81%	88%	90%	91%

QUT provided its ebook holdings so that JSTOR could perform a holdings comparison to determine titles within the JSTOR collection that had already been acquired by QUT. A review of the usage data was run to determine if there was usage on these titles when made available on JSTOR, despite their availability at QUT via another platform. In addition, JSTOR compared the average chapter view and downloads of these titles compared to the average chapter views and downloads of titles that were considered unique to JSTOR.

There were 44,243 titles available on the JSTOR platform that were run against the holdings at QUT, and it was determined there were 2,413 titles that overlapped. JSTOR then analysed the usage that occurred across all the titles in the DDA program from January 1, 2017 through June 30, 2017, the period when the full collection of titles noted above was available to QUT.

In total, there were 4,271 titles that had at least one chapter view or download. There were a total of 3,522 titles (82%) that were unique to JSTOR that had at least one chapter view or download and 749 titles (18%) that QUT already had available from another platform that had at least one chapter view or download (see Table 5). Of the 2,413 titles that QUT had already acquired that overlapped with the collection in JSTOR, 31% of those titles had at least one chapter view or download. The 749 overlapping titles had an average number of views and downloads higher than titles that were unique to JSTOR.

Table 5: Usage of Unique JSTOR Titles at QUT Compared to Overlap Titles

Overlapping JSTOR Title	# of Titles with Usage	Total Chapter Views or Downloads	Average View or Download per Title	% of Overall Usage
N	3522	15224	4.32	82%
Y	749	4216	5.63	18%

Conclusion

Despite the challenges associated with the management of EBA programs, QUT concludes that EBA is a viable, cost-effective and financially sustainable supplement to its DDA-focused ebook collection development program. Implementation of EBA has allowed QUT to continue its strategy of providing access to an expanding collection of ebook titles. With the implementation of EBA programs, DDA expenditure has been capped and issues with short-term loans have been mitigated. The QUT EBA programs have not proved as effective as DDA in eliminating the low levels of reuse of purchased content that have dogged librarian selections. However,

when high level content reuse is considered as a benchmark of collection development success, two out of three EBA programs compared favourably with DDA. The EBA programs implemented at QUT generally provide sufficient evidence for future action. Just as for the purchase-trigger event in DDA, the selection of content to own via EBA provides a good indicator of post-purchase use. Overall, in combining EBA with DDA, QUT is getting the balance right in the management of its Ebook collection development.

Building on the success of its DDA model, JSTOR has moved to address the challenges associated with DDA, by piloting an evidence-based acquisition model. The model aims to maximise the capacity of libraries to provide ebooks for their clients, while at the same time maintaining financial sustainability for libraries and publishers. QUT's use of ebooks on the JSTOR platform as a percent of total usage has steadily grown. With this growing commitment to ebooks, financial sustainability is paramount. The JSTOR EBA has only recently launched and it is premature to draw any conclusions regarding the success and sustainability of the model. However, preliminary results will be available at the conference.

In reviewing the discovery of ebooks at QUT, it was determined that there was a strong correlation with the usage of ebooks and ejournals across the same disciplines on the JSTOR platform. This correlation is usually stronger for institutions that have more discovery direct on the JSTOR platform, rather than through discovery services as was witnessed at QUT, where 38% of the referrers to ebook chapters on the JSTOR platform come from QUT's indexed discovery service. This compared with 5% for other higher education institutions in Australia and 4% of higher education institutions in the United States.

One of the values of EBA is the ability to provide access to all titles available in the program, regardless of any overlap with titles an institution has already acquired in print or electronic format. When reviewing the usage of titles in the JSTOR EBA program for titles that were unique and those that were already acquired electronically at QUT, it was found that titles already acquired from another vendor had a higher average number of chapter views and downloads. This helps to validate the value of EBA by making as much content available to users for discovery without the risk of duplication at QUT.

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EndNotes

¹ Table 1. Average 2016 STL cost converted from US Dollars to Australian Dollars at USD0.70: AUD1; ** Owned titles; *** All ProQuest DDA costs 2007 to 2016 divided by # purchased titles as at end 2016 converted from US Dollars to Australian Dollars at 0.70; **** Total JSTOR DDA cost 2015 to 2016 divided by total JSTOR DDA usage 2015 to 2016; ***** The Springer figures in the table are cumulative and all content owned as at end 2015 and usage to May 2016 as generated by Springer. Cost per use is generated by QUT.

² Springer is the exceptional collection model at QUT, with about 70% of most collections being used over time.

³ However, it will be possible to include analysis based on seven months' data in the conference presentation.