Ebook usage at Curtin University Library: patterns, projections and strategy

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Abstract:
Since Curtin University Library began to collect ebooks in the early 2000s, we have used a variety of collection development and access models for different purposes. To a large extent different acquisition models have been aligned to different collection development goals. For example, acquisition of publishers' collection sets has been directed to providing long-term infrastructure for researchers; purchase of individual ebooks has been intended primarily to address short-term demand for materials required to support teaching and learning. This paper will examine the patterns of usage of different categories of ebooks to establish the extent to which method or philosophy of acquisition has an impact on ebook usage.

Introduction

Is there a relation between patterns of ebook usage and the models of acquisition which are used to add them to a library's collection? Over the longer term, will ebook titles purchased in direct response to client demand receive equivalent, greater or less use than titles purchased as part of publishers' collection sets intended both to meet immediate need and to provide research infrastructure for the future? These are just two among the numerous questions which librarians involved in acquisitions and collection development need to answer in order to plan ebook collection strategies which will maximise return on investment and provide the greatest benefit for clients. Until recently, ebooks have been too new a product to provide longitudinal data that could even begin to answer questions such as these. The present paper, while its findings can at this stage only be provisional, uses data available from Curtin University Library over a five-year period to suggest emerging patterns and predict future development.

Literature Review

Over the last ten years a number of papers and articles have been written on the topic of ebooks and user statistics. Recent overviews include Soules (2009), who provides a general survey of the current state of ebooks, and Safley (2006), who wrote a very comprehensive article about the demand for ebooks in academic libraries, including an insight into the history of ebook models and the evaluation of usage statistics for a large ebook collection.

There are several reasons why university libraries in particular consider ebook statistics deserving of attention. King (2009) notes that owing to the financial crisis and subsequent financial restraints that were imposed on academic institutions and libraries, analysis of usage statistics for electronic resources has become more important than ever in recent times. Other authors have identified purposes of gathering and interpreting use statistics that go beyond monitoring value for money, such as their assistance with collection development decisions. Cox (2008) states, for example, that ebook statistics can help librarians decide whether to purchase titles in print or online, and in which specific subject areas. According to Cox, usage statistics can also aid librarians to plan promotional activities and user training. A survey conducted by Ebrary (2007) shows that librarians often consider offering training to users and organising the promotion of certain resources if statistics show that they are rarely used.

One feature of much of the literature on ebook usage is to combine an analysis of usage statistics with user surveys, either in the form of questionnaires or focus groups: as, for example, Langston (2003), Levine (2006) and Shelburne (2009). Occasionally, a comparison of usage of print versus online monographs has been attempted: see for instance Safley (2006). Other authors have looked at ebook statistics in terms of different subject areas, attempting to establish if electronic monographs show higher use in some areas than in others (for instance, Dillon (2001) and Safley (2006)).

Several conclusions emerge from the literature. Firstly, a number of authors agree that the exercise of analysing and interpreting usage statistics for electronic monographs can prove to be difficult, especially if multiple platforms or databases are to be compared (see for example Safley, 2006). Dillon (2001), however, observes that the definition of use for ebooks is no more problematic than for their print counterparts. Cox (2008) compares the kinds of usage statistics provided by different platforms, and shows that statistics appear in many different shapes and forms. King (2009) also notes that ebook statistics often vary considerably in terms of quality and standardisation.

Most librarians dealing with electronic ebooks will have encountered the COUNTER and SUSHI initiatives (see www.projectcounter.org and www.niso.org/workrooms/sushi). Both Cox (2008) and King (2009) draw attention to these projects, and make clear they will make the meaningful and efficient interpretation of ebook statistics a lot easier once more vendors and publishers agree to comply with these standards.

Several authors identify circumstances which may boost the usage of electronic monographs. Dillon (2001) and Nicholas et al. (2007) state for instance that ebooks show higher use when MARC records for individual titles are made available through the OPAC. Dillon (2001) also assumes that ebooks generally will show little use until there is a 'critical mass' of them available at one institution. In addition, his survey suggests that ebook usage is not affected by whether print copies are available for the same titles in the collection. Safley (2006) finds that promotion of databases or platforms providing access to ebooks by librarians leads to ebooks being used more often. Bailey (2006) reports a steady increase in ebook usage over the five years since ebooks were introduced at his institution, and claims that this is due to an increased acceptance of electronic monographs. Grigson (2009) concurs that over time users have become more accustomed to ebooks, and that this fact increases their usage.

Nicholas et al. (2007) take an interesting approach to the subject by comparing usage statistics for ejournals and ebooks. They conclude that electronic journals show a high concentration of use for most recent articles, with usage rapidly decreasing with time. Ebooks on the other hand show 45% of use for titles published in the last three to six years, with lower usage for more recent titles.

Cox (2008) adds a further dimension to the debate by stating that ebook usage is also influenced by the different access models for electronic monographs provided by different platforms, and by the various data rights management policies of publishers and vendors, governing, for example, the amount of printing or copying/pasting that users are allowed to do.

The question of the differential use of ebooks in different subject areas has been considered in particular by Bailey (2006), who compares a number of studies on this topic. While, as might be expected, detailed results vary from survey to survey, it is notable that economics, business and computer science are often found to be the most highly used subject areas at institutions: in short, he concludes, certain subject areas lend themselves particularly to electronic use. Safely (2006) partly supports this by finding that computer science and engineering have the highest ebook use.

Christianson (2005), on the other had, suggests that, regardless of discipline, most usage is concentrated in relatively few high-use titles.

Relatively few authors discuss the implications their findings might have on librarians' collection development decisions. Davies (2009) has suggested that user-driven ebook acquisition models are an effective collection development mechanism in that ebooks purchased for one user are very frequently also read by others. Christianson (2005) states that there is value in providing both a wide range of titles and specific in-demand titles for users. Safley (2006) supports this line of argument by establishing that the same pattern of use can be found for titles selected by librarians and by suppliers (as often is the case in larger ebook packages with set content). She states in addition that it is advisable for libraries to purchase larger collections as well as individual titles, as the size of databases increases the ability to locate exactly what is required, whereas individual titles can assist in meeting high demand. Silberer and Bass (2007) agree that no acquisition option or single source ordering can meet all the needs of a library. Access needs to be provided both for interdisciplinary use by purchasing databases and ebook packages and for core subject use by acquiring individual titles.

On the future development of ebook statistics collection, King (2009) states that the compiling of usage statistics will probably eventually be outsourced to other institutions which will be able to provide libraries with finalised results. Nicholas et al. (2007) are working in the United Kingdom on the so called 'Superbook Project', which will analyse sets of ebooks included in catalogues of various university libraries by deep log analysis, a method usually applied to electronic journals. Cox (2008) also writes about deep log analysis, which is able to provide figures on the number of unique users or peak times of the day, to give just two examples. Cox notes that this sort of gathering and interpreting of user statistics asks for a large and time consuming effort, and will most likely be conducted by research teams rather than librarians.

Ebooks at Curtin University Library

Curtin University Library began the serious investigation of the newly emerging phenomenon of ebooks in 2002. The first ebooks purchased in 2003 were a small collection of nursing titles on the Ovid platform. In 2004, in order to create a critical mass and to put the concept of ebooks in front of our clients, we loaded records into our catalogue for the NetLibrary version of some 3500 freely available Project Gutenberg titles. These were supplemented that year by a number of purchased NetLibrary titles and by the Knovel collection of reference books in the fields of engineering and applied sciences. For the next two years our holdings of ebooks grew slowly as we experimented with different approaches and platforms. From 2007 a positive funding situation combined with the increasing availability of collection sets from agencies such as CRCnetBase and Springer allowed us to expand our ebook collection significantly. Table 1 indicates the number of ebook records added to our catalogue each year since 2002 and including the first six months of 2009.

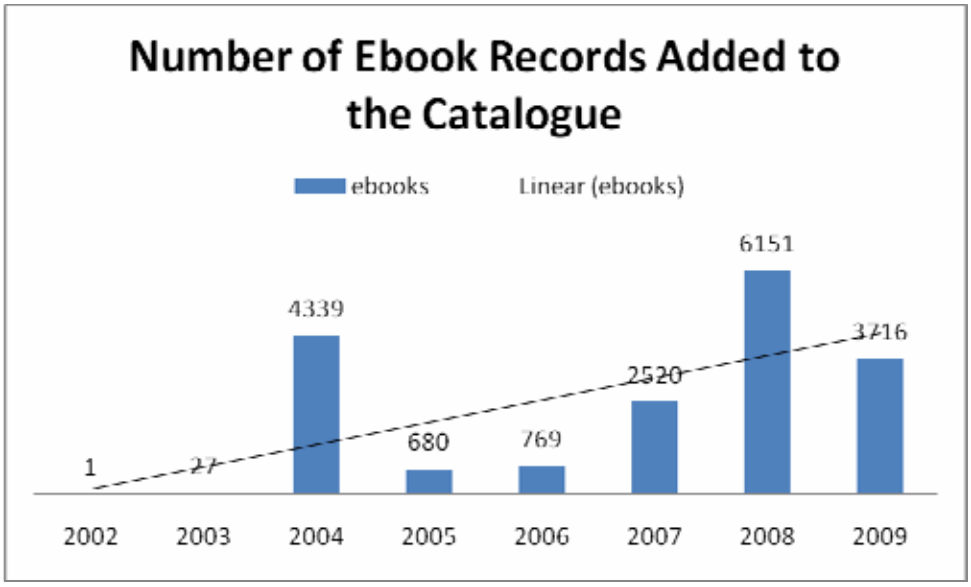

Table 1

For Curtin the ebook format so far remains secondary: although the balance is shifting quite quickly, at present fewer books are still obtained in electronic format than are made available in print. In comparison with ejournals, which are now well established in academic libraries almost to the exclusion of print, ebooks are characterised by a wide divergence of acquisitions and access models. The examples below indicate some of the different models currently found at Curtin.

Publisher packages e.g. Springer, CRCnetBase. Publishers provide a set of all their publications or a subset of publications in specific subject areas, either as an ongoing subscription with perpetual access, or as a one-off purchase for individual years. This is a relatively recent development on the model of established ejournal packages, and tends to be concentrated in science areas where ejournal take-up is already highest. One disadvantage from a collection development point of view is that this is an all or nothing approach; on the other hand, non-current years are often inexpensive. Ebooks may also be included as part of a broader package including journals, conference proceedings etc., as with, for example, Informit e-Library (Curtin subscribes to the humanities and engineering collections).

Subscription services e.g. Knovel, which is a collection of materials from multiple publishers in the areas of engineering and science (unlimited access); and Safari – books in computer science, mostly practically oriented. With Safari subscribers select a specified number of titles from the list of those available, and choose to allow a specified number of simultaneous users across all subscribed titles.

Individual titles. Curtin has titles from Books@Ovid and Wiley, delivered through proprietary interfaces. These are mostly reference works in health or physical sciences, typically available either as subscriptions or as one-off purchases (we have most of them as outright purchases) with a specified number of users. We also subscribe to a small number of Bennett's etitles for Australian content not available elsewhere. These are held on a three-yearly subscription, with one simultaneous user, which is not a particularly attractive model given an annualised budget cycle. The largest numbers of individual titles held at Curtin are from NetLibrary and EBL.

NetLibrary has very broad coverage, using its own on-screen reader to allow books to be checked out in 2-hour blocks to one reader at a time. Books are purchased outright and Curtin has bought multiple copies of some titles. EBL also provides broad subject coverage, and, because of its flexible delivery options, is Curtin's preferred platform for individual books. EBL's 'non-linear lending' model allows 325 lending days per year regardless of the number of readers. A small number of textbooks limited to 5 simultaneous users and some reference books with unlimited access are available outside this model and priced accordingly. EBL allows for books to be loaned rather than purchased outright (though loans have never been implemented at Curtin). It allows user-initiated purchase either mediated by the library (trialled at Curtin in 2005) or unmediated (trialled in 2004 and 2008). In addition Curtin maintains some individually sourced PDF files stored on a library server, as well as out of print books scanned in-house, and provides links in catalogue records to titles freely available on the internet.

Expectations of Use

Collection development for ebooks at Curtin presently follows two main strategies. First we routinely acquire ebooks whenever possible for high-use and Reserve material. These titles are typically purchased on an individual basis from vendors such as NetLibrary and EBL. In terms of acquisitions this is a relatively labour-intensive process, but is responsive to the specific needs of the University's teaching and learning, allows maximum exposure of course-related materials to the student body and facilitates access for off-campus students. As an extension of this process we have experimented with client-initiated purchase of individual ebook titles through EBL. Secondly, and particularly in the last few years when a high value of the Australian dollar has effectively boosted the acquisitions budget, we have purchased collection sets in targeted disciplinary areas with the aim not only of supporting teaching and learning, but also of building up the Library's infrastructure for research.

The two strategies serve different purposes. The first is intended to cater for short-term demand for multiple simultaneous access; the second has longer-term ongoing usage in view. We would expect that material intended to address short-term demand would show high usage in the period immediately following purchase, but that this demand would be likely to reduce over time as items become out of date and/or are replaced as course materials by other titles. Conversely we would expect that material purchased as research infrastructure, but not specifically in response to client demand at an individual title level, would receive relatively little usage in the first instance, but that over time usage would increase as researchers became more aware of the availability of the resources and as a need for them was created by the ongoing development of research.

Is this assumption that there is a correlation between ebook acquisition method and subsequent usage correct? The aim of this paper is to test the hypothesis and to consider the implications of actual usage data for acquisitions and collection development policy. As Bailey (2006) states and the literature review above has shown, very few papers on ebook usage to date have gone beyond making general suggestions for future studies; few concrete proposals for using statistical data to inform collection development plans have so far been put forward.

Moreover, until recently it has not been possible to gain even a preliminary view on this sort of question, because ebooks have not been available to library clients for a sufficiently long period for enough longitudinal data to be collected. Even now, the data available covers only the relatively short period of four to five years, and any conclusions from it must be considered provisional. The present analysis examines groups of titles, either within a particular package or made available through a particular platform. A different pattern might emerge from the examination of individual titles within packages; however, the purpose of the present investigation is not to study ebook collection development at a microbibliographic level, but rather to identify general tendencies in ebook use which could in principle inform the acquisitions process.

Methodology

For this study we have selected for comparison three particular ebook targets which display different characteristics in terms of collection development and illustrate different methods of acquisition. These are Knovel, CRCnetBase and EBL.

For Knovel, vendor-provided statistics have been used for usage, and the figures for numbers of titles held in each six-month period have been taken from the Aleph library system. As catalogue records were not necessarily added consistently at the same time during each period, and as in any case the ebooks can be accessed directly from the Knovel website rather than through the library catalogue, the statistics given incorporate a certain degree of error. The trends indicated, however, should be sufficiently reliable for general conclusions to be reached. For CRCnetBASE, as vendor statistics were not available, usage statistics are based on EZproxy logs; the numbers of titles are again based on the number of catalogue records added to Aleph during the survey period. For EBL, statistics for both usage and number of titles purchased are derived from information provided by the vendor. All three platforms are included in the Library's A-Z list of databases and users can therefore access all purchased titles through the native interfaces of the providers; MARC records for all individual titles are also included in the main OPAC as well as in the ebook subset of the catalogue.

It should be noted that ebook usage statistics from the three providers have not been directly compared in this study as the format and the detail of the data varied considerably. In future, direct comparisons should be easier as more vendors provide COUNTER-compliant statistics.

CRCnetBase

Curtin purchased five CRCnetBase modules at the end of 2006, covering the areas of forensic science, mathematics, statistics, nutrition and tribology (the study of friction). The publication dates of the original collection covered 1983–2006 and new titles have been included for each subsequent year. Curtin purchased additional modules in 2007 and 2008, but these have not been considered as a sufficient depth

of usage statistics is not yet available. The pattern of total usage is shown in Table 2. As CRCnetBase allows for unlimited simultaneous users the question of turnaways (cases where a user is blocked because the maximum number of simultaneous licensed users has already been reached) does not arise.

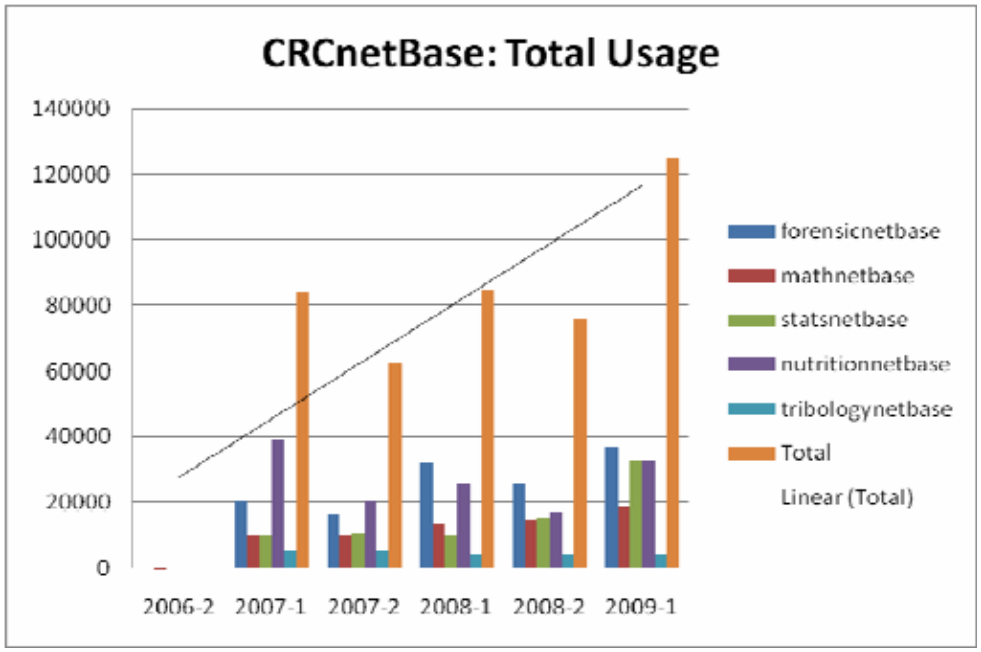

Table 2

Here, while for unidentified reasons usage appears to be consistently higher in first semester than in second, the overall usage trend is up, both for individual subject netbases and for the aggregate of all of the five netbases.

Table 3 compares these five ebook packages in terms of average use per title, thus providing a more accurate picture of usage trends as the number of records available changes due to new titles being published and added to the collections. Although the individual netbases vary in usage per title over the six semesters, and all show particularly high use in the semester following the initial purchase, the overall tendency is towards slowly increasing use.

Although the length of data available is relatively short (two and a half years) the average use per title of CRCnetBase ebooks appears to validate the proposition that usage of ebook material purchased as research infrastructure will increase over time.

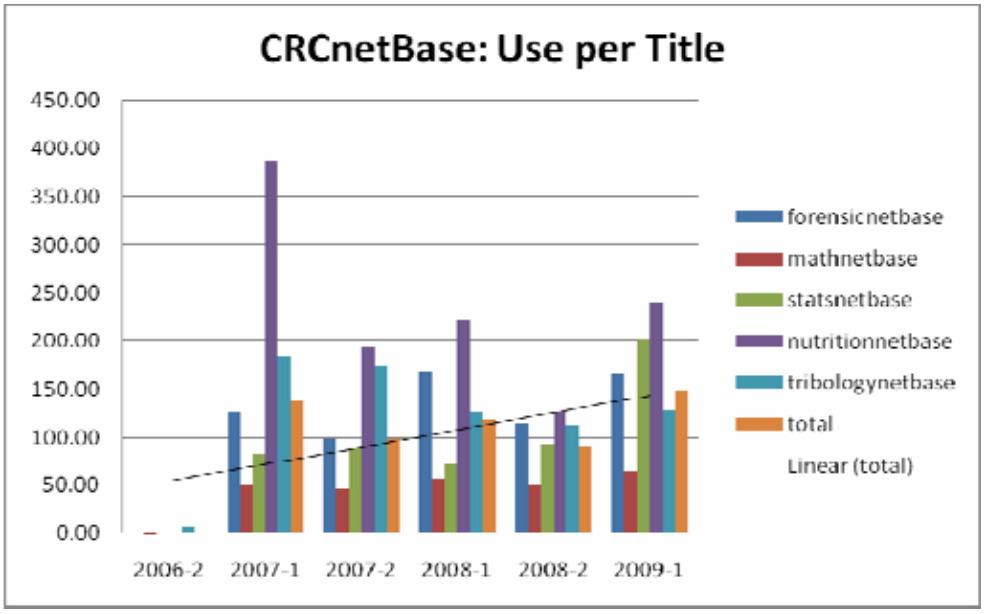

Table 3

Knovel

A slightly different picture emerges when we look at the Knovel collection, for which a longer span of data is available. Knovel is a collection of ebooks purchased on a subscription basis in the general area of science and engineering, including publications from CRC Press, McGraw-Hill, Institute of Physics, Royal Society of Chemistry, Butterworth-Heinemann, Kluwer, Reed-Elsevier and John Wiley & Sons. It includes reference handbooks and conference proceedings as well as single-author monographs, some of which incorporate interactive productivity tools. Knovel allows institution-wide unlimited simultaneous user access. Curtin began to subscribe to Knovel in 2004. The overall pattern of use since that time shows a gradual increase over the first four years followed by a decline, as indicated in Table 4.

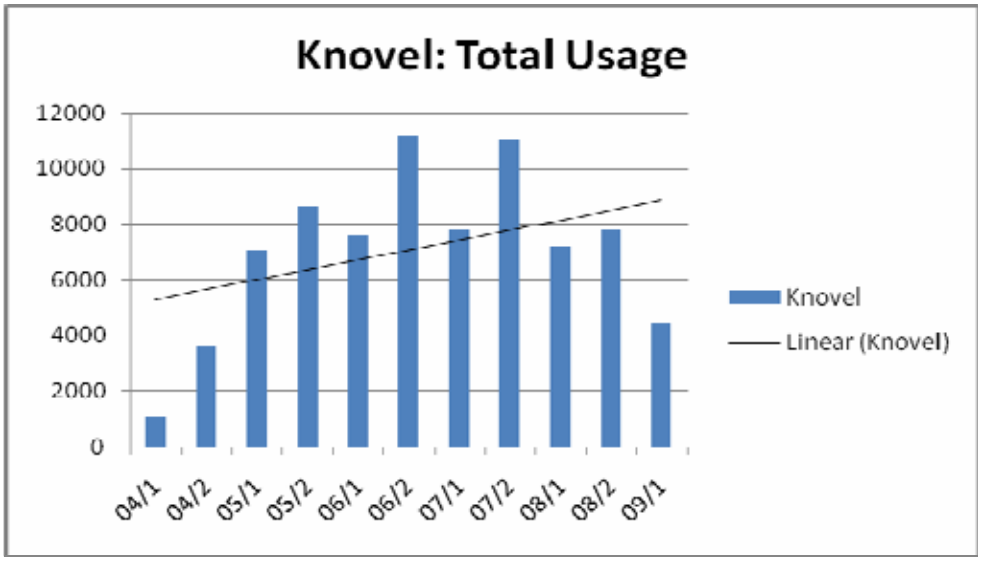

Table 4

Of course since 2004 the number of titles available through Knovel has gradually increased. A clearer idea of the impact of Knovel titles is given by an analysis of use per title broken down by time as shown in Table 5.

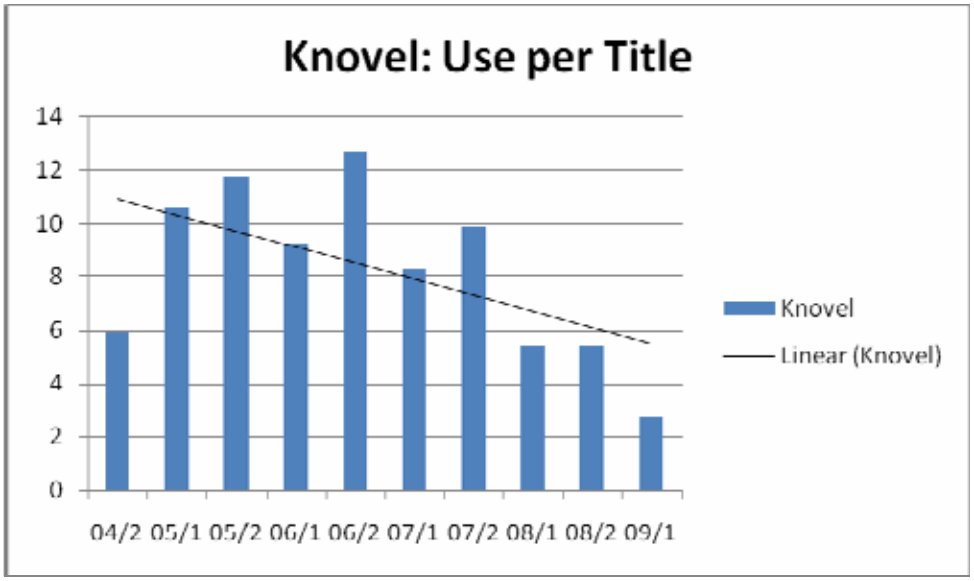

Table 5

This graph shows first of all a consistently higher level of usage in second semester compared to first semester, possibly attributable to the different reading and/or research requirements of academic units taught in the different semesters, or to increased familiarity during the year of each cohort of students. Overall, use has increased from 2004 to 2006 and has started to decline from 2007 onwards, contrary to expectation. One possible explanation of this is that at first the Knovel ebooks had little or no competition from other ebook sources. Alternatively the ebooks added in later years have been of less critical importance than the first titles in the collection and therefore, although use of the original titles has remained steady or increased, overall use per title has decreased. Further investigation will be necessary to clarify this point.

EBL

Curtin began beta-testing with EBL in mid-2004 and since then has experimented with several of the different possible approaches which this system offers to collection development. During the second half of 2005 as a pilot scheme, EBL was set up for immediate and unmediated auto-purchase, with all EBL titles made active through the EBL website. This exercise led to 239 titles being auto-purchased. During 2006 an experiment was made with mediated purchase. Titles from a small group of publishers were disabled on the EBL website, but the majority of titles were made available for purchase at the initiation of library clients. Requests were mediated by Library staff to confirm that titles requested met appropriate academic standards, and made available within a couple of days. In the second semester of 2008 direct auto-purchasing was reinstated. This period saw the auto-purchase of 158 titles. In addition to user-initiated purchases, we have also used EBL as our

preferred source for ebooks to meet the requirements for high-demand material. Orders placed in this way by Library staff can also be considered in a sense to follow from user demand. Curtin has not to date either made the decision to load EBL records for non-purchased titles into the catalogue, or implemented the loan model for ebook provision. Both of these options, however, remain possibilities for future development.

Table 6 shows the usage of EBL ebooks in 6-monthly periods since the first titles were purchased in 2005.

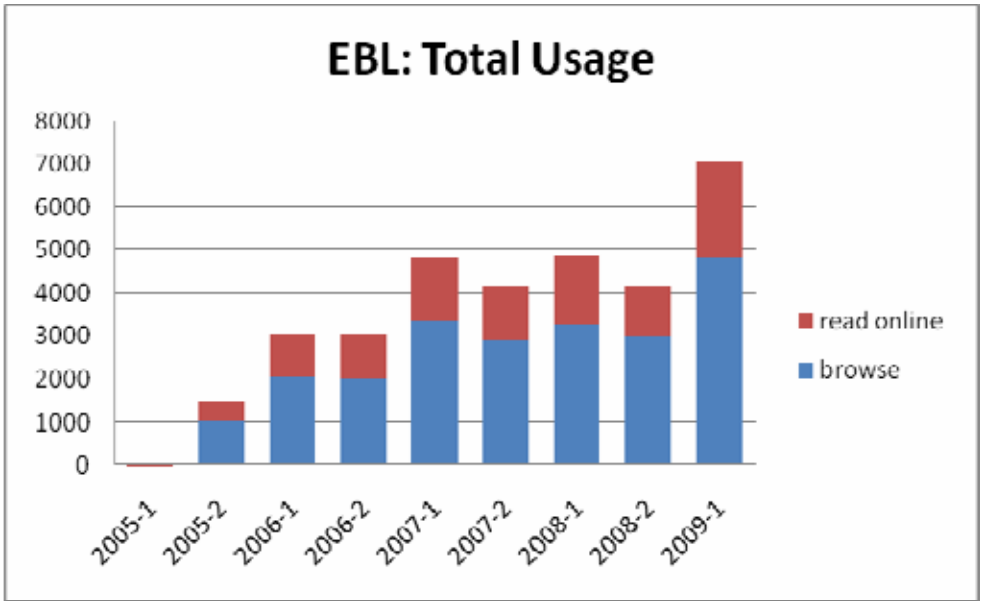

Table 6

As might be expected, the usage figures rise with the increased number of EBL titles available to the users. Again usage patterns appear to be different depending on the semester, with a slight but noticeable tendency for first semester use to be higher than second semester.

The graph differentiates between two different types of use as provided from EBL statistics: ‘read online’ and ‘browse’. The first time any user accesses an EBL ebook, s/he has ten minutes to browse the ebook before the usage switches automatically to a read-online use (which also may occur at a later stage, if it is the same user who accesses the ebook). It is this switch that causes the book to be auto-purchased when user-initiated purchases are enabled. The reason there are more read-online uses than browse uses every semester is at least partly that the usage type switches to read-online straight away if the user decides to print, copy or download the ebook. The detailed figures indicate that, as might be expected, this happens quite frequently. However, although interesting in itself, the distinction between ‘read online’ and ‘browse’ is not significant when considering the total number of uses.

Usage per title for EBL is shown in Table 7.

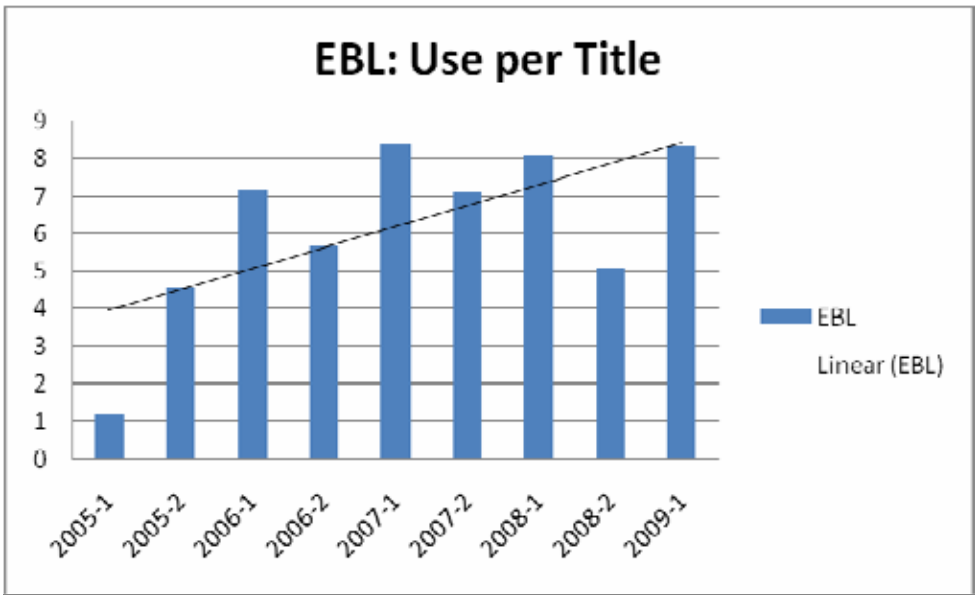

Table 7

The graph shows that the average use of EBL titles increased until the first semester of 2007 as expected, and then began slowly to decrease over the next few semesters. It was expected that the average use would decrease after a certain period of time as these titles were specifically purchased to meet short term high demand requirements. It is surprising though to observe that usage per title increased again for the first semester of 2009, almost to the same height as its peak in the first semester of 2007, and that overall the trend line is up. This, however, reflects the increase in total usage also observed in first semester 2009.

Secondly it is clear that the pattern of higher use in first semester than second semester, as with CRCnetBase titles, also applies to EBL average use per title.

In addition, we have been able to analyse usage specific to the different purchase models that we have applied to EBL, as EBL have been able to provide highly specific data. Table 8 shows the average use per title for those ebooks purchased as a result of Curtin's first experiment with auto-purchasing in 2005, when 239 titles were acquired directly due to user demand and unmediated by library staff.

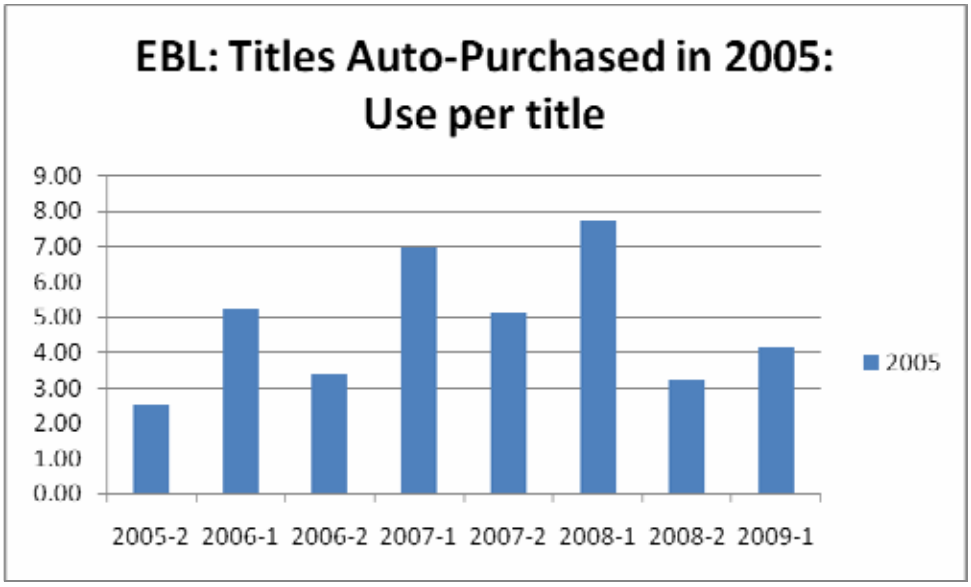

Table 8

The graph shows that the average use per title for these auto-purchased ebooks went up consistently for the first three years, and then dropped quite significantly in the last year. Again, the difference between first and second semester usage can be clearly observed, with higher usage during the first part of each year. It was expected that use of these titles would be reasonably high straight away, and indeed, although the highest use was not in the first year, the ebooks were all used heavily over the first three years. The decrease of usage after the first three years happened as predicted.

The following two tables show usage of titles that were purchased in 2005 by library staff due to high demand of the equivalent print copies (Table 9), and usage of titles that were purchased using the mediated acquisitions model in 2006 - user initiated but monitored by librarians (Table 10).

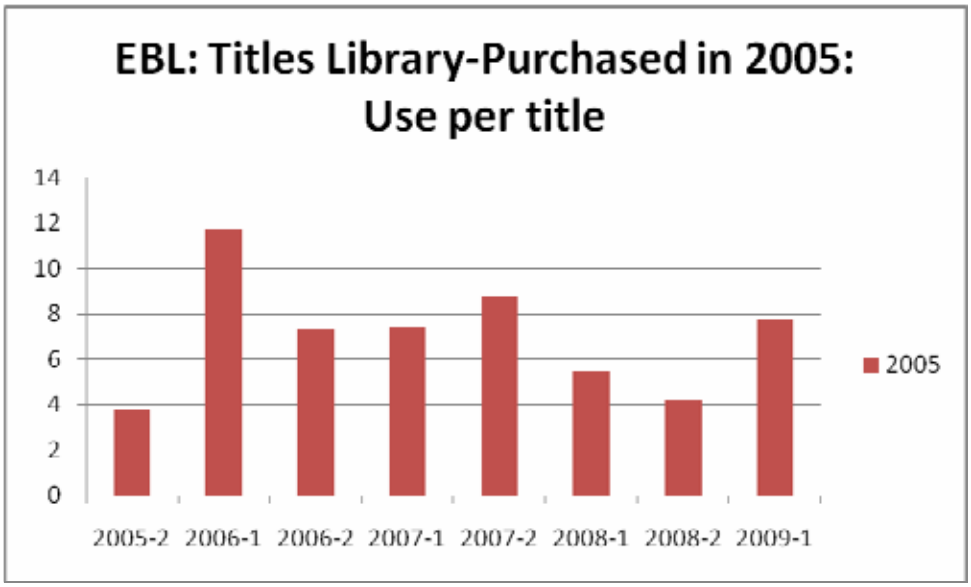

Table 9

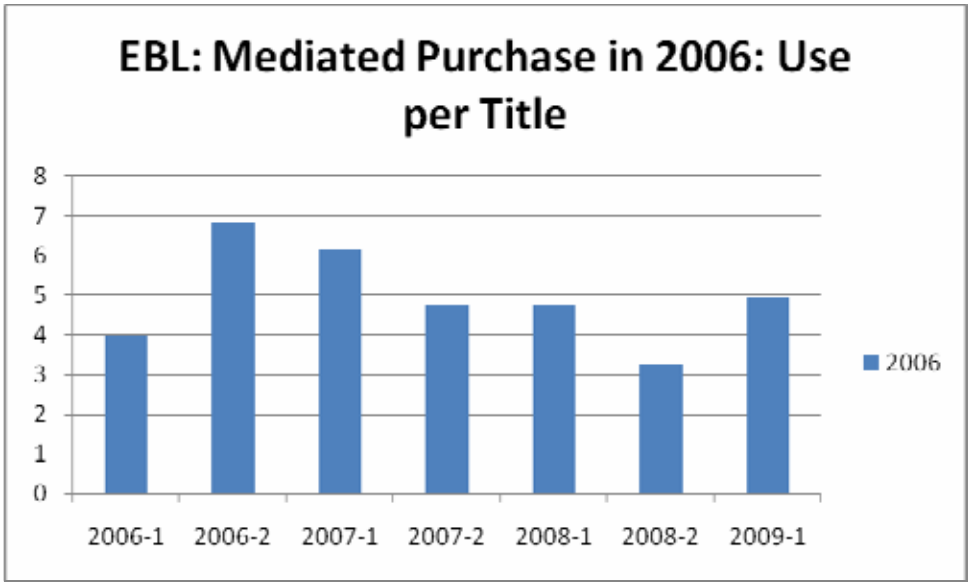

Table 10

Both graphs show a downward trend after a semester of high use. The titles that were purchased by library staff as shown in Table 9 seem to behave more inconsistently than other titles: they are surprisingly, for example, not particularly highly used in the semester of purchase. In addition there is no pattern of first and second semesters as previously observed; this is also the case for titles purchased via the mediated model. This might be due to the fact that some of these ebooks appear on reading lists in one semester, then get taken off, but might reappear on other reading lists subsequently.

Table 11 compares the three different EBL acquisition models in a single graph.

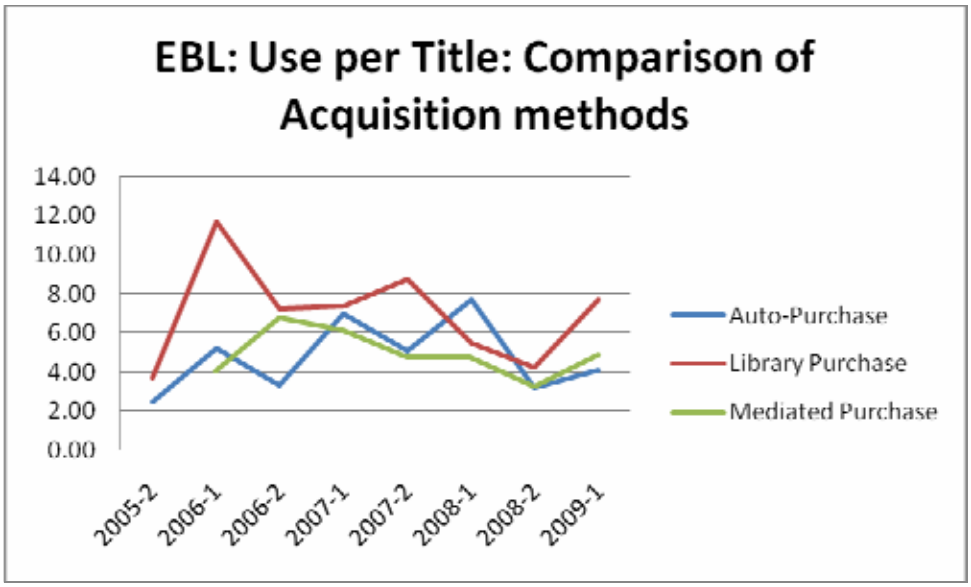

Table 11

It can be observed that titles purchased by library staff show almost consistently higher use than titles purchased using the other two acquisition models. This can be explained by the fact that these titles are always expected to have very high use, with their print counterparts being on reading lists, in the Reserve collection or otherwise heavily used. On average, auto-purchased titles show roughly the same levels of usage as mediated purchase titles, and the differences can probably be ascribed to the popularity of individual titles at different periods of time.

Table 11 illustrates clearly a phenomenon that can be seen on all the EBL graphs. The first semester of 2009, which is the last period for which usage statistics were available, shows a sudden rise in use for all three purchase models. Whether this is due to promotional activities regarding ebooks and other electronic resources by academic staff, or to increased acceptance and demand for ebooks from users, cannot be established in any simple way.

However, if the figures for the first semester of 2009 are disregarded, the hypothesis of this paper – that individual titles purchased due to high demand will show high usage immediately after purchase and that usage will decrease after a certain period of time – has been confirmed.

Conclusion

In this paper usage statistics for ebooks have been analysed to establish whether or not usage would show different patterns depending on the acquisitions model under which they were purchased. It was anticipated that material intended to address short-term demand, specifically individually purchased ebooks, would show high usage at the beginning, but that usage would decrease over time. On the other hand, ebooks purchased as part of large ebook packages would be expected to show relatively low usage initially, but usage would gradually rise over time.

Analysis of the selected CRCnetBase modules demonstrated the usage pattern that was predicted, although the time series available was relatively short. While, over the period surveyed, usage is consistently higher in first semester than second semester, in general use per title has steadily increased since the titles were added to the collection.

On the other hand usage statistics for Knovel ebooks do not support the hypothesis. Usage is persistently higher in second semester than first semester for each year, but generally usage has decreased since these titles have been acquired. There could be various reasons for this: one is that as Knovel ebooks were among the first ebook packages to be bought, competition from other packages and from individually purchased ebooks has increased.

Usage of titles on the EBL platform, driven by client demand, also follows the expected pattern. Use per title does increase over the first few semesters immediately after purchase and, after a peak, decreases slowly as was expected. The first semester of 2009 shows an unanticipated increase of usage, however, which almost matches the figures at their height in 2007. Further data will need to be collected to determine the significance of these figures in terms of overall trends.

In summary, in terms of collection development decision-making, the present research confirms that it is constructive to continue purchasing ebooks individually to meet short-term high demand as well as to acquire larger packages to meet longer term demand, as both methods provide resources that show consistent usage even while varying in their usage patterns broadly according to the expected patterns. The evidence of the Knovel ebooks, however, suggests that in some cases other factors may also be in operation requiring more nuanced collection development decisions.

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