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Free e-Books and Print Sales

John Hilton III and David Wiley

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Abstract

Digital technologies now enable books and other digital resources to be openly available to those with access to the Internet. This study examined the financial viability of a religious publisher that put free digital versions of eight of its print books on the Internet. The cost to put these eight books online was \$940. Over a 10-week period, these books were downloaded 102,256 times and sales of these books increased 26%. Online sales increased at a much higher rate. Comparisons with historical book sales and sales of comparable titles indicate that that this increase may have been connected to the free books being available. There was a modest correlation between book downloads and print sales.

Keywords: open educational resources, e-books, open access, open culture, e-commerce.

Introduction

Some prominent Internet and publishing figures have spoken out on the importance of making books freely available to the world (Lessig 2004, 2008; Boyle 2007, 2008a, 2008b; Doctorow 2008). Although making books available as free educational resources may be beneficial, an obvious objection to the making of books available for free is that the availability of free online copies may harm the commercial viability of printed books, thus making fewer quality books available (Rich 2010; Adams 2007). Adams, the author of the “Dilbert” cartoon strip, wrote of his disappointment with readers after he released one of his older books for free online.

My hope was that the people who liked the free e-book would buy the sequel [which was newly available in hard copy]. According to my fan mail, people loved the free book. I know they loved it because they e-mailed to ask when the sequel would also be available for free. For readers of my non-Dilbert books, I inadvertently set the market value for my work at zero. Oops. (2007, A19)

In contrast, others have suggested that sales are not negatively affected by free digital content (Doctorow 2008; Hardawar 2009; Kusek 2008). Society would obviously benefit from books being freely available; however, if sales collapse, it seems unlikely that authors and publishers will be willing to make them freely available. The present study undertakes to answer the question, how does giving away digital books currently influence the print sales of those books?

Review of Literature

A growing number of authors are using free digital distribution of their books in order to increase the visibility and sales of their work (Hilton and Wiley 2010b). These authors include individuals writing to both academic and general audiences in a wide variety of genres, including technology, law, education, and science fiction. The question of whether releasing free digital versions of books increases sales cannot be determined through experimental research because it is impossible to simultaneously release and not release books. However, this has not prevented many from attempting to analyze the issue from a variety of perspectives.

T. Anderson (2009), an academic residing in Canada, wrote about his experience with making a digital version of *The Theory and Practice of Online Learning* (second edition) freely available.

During the first year of distribution 404 copies were sold and . . . my royalty check was for \$636. During that year 26,497 chapters or copies of the whole book were downloaded at no charge. This means 1.5% of readers choose the paid route....In any case, this \$600 is about the same range of funding I have come to expect from the other 5 academic-type books I have authored or co-authored. But of course, the fame and glory from 26,000 PLUS readers is unmeasurable! (para. 2)

Anderson's statement is particularly valuable because he shares information about downloads in addition to sales. Many authors who make books available on the Internet do not track the number of downloads that occur. However, because a digital version of this book was always available for free, there is no way to determine whether the free version enhanced or detracted from his sales.

Some publishers have also reported how free publications have influenced their print sales. Jensen (2007), director of publishing technologies at the National Academies Press (NAP), reported that the NAP makes the text of all of its publications freely accessible. "Consequently," he wrote, "we are very well indexed by search engines" (para. 6). Jensen explained that as a result of this indexing they receive many visitors, a small percentage of which purchase books. As one example of how free online access increased sales, Jensen reported on the NAP's 1997 publication called "Toxicologic Assessment of the Army's Zinc Cadmium Sulfide Dispersion Tests." Jensen said, "In 2006, that report had 11,500 online visitors, who browsed approximately four book pages each. Of those, four bought a print book at \$45, and two bought the PDF at \$37.50 online. So 0.05% of the visitors to that particular book purchased it, even though they could read every page free online" (para. 23). Thus, in Jensen's view, a publication that otherwise would likely have been inaccessible was viewed 11,000 times and purchased six times.

Similarly, the Oriental Institute at the University of Chicago has been digitally distributing free copies of its books, and recently reported that print sales have not decreased. Specifically the institute noted that, "After the complimentary distribution of twenty-one titles in 2008 that had for many years only been available in print, sales of these titles increased by 7% compared with the previous two years" (Oriental Institute 2009).

Hilton and Wiley (2010a, 2010b) explored how free digital book distribution influenced book sales in the short term by examining a series of books that were released in print at one point in time, and then *later* released in a free digital format. They found that when digital books were made freely available for an extended period of time print sales tended to increase. Although the Hilton and Wiley (2010a) study included a large number of books, no information was available on the

number of times that the books were downloaded. Thus it is difficult to determine whether the downloads themselves were sufficiently large to influence book sales. The study was also limited to books that were primarily academic or fiction titles.

Thus, a study that examines both the number of times free digital versions of books are downloaded and explores possible correlations between these downloads and changes in print sales would fill a gap in the current literature. In addition, because the literature in this area is sparse, this study will contribute to the general knowledge surrounding free book downloads and print sales.

Method

This section describes the publisher and specific books to be studied, how the books were made available, data collection procedures, and the analysis methods used. This methodology combines techniques used by Johansen and Wiley (2010) and Hilton and Wiley (2010a, 2010b).

Publisher and Books to be Studied

Deseret Book was selected as the publisher for this study. Deseret Book is a religious publisher and is a relatively small publisher. Deseret Book agreed to participate in the study as long as the books selected for this study would be books that were backlist titles (meaning that they were not currently selling large quantities). That way, if free downloads did adversely affect sales, the overall impact would be less than if the books were currently producing a lot of revenue.

Selecting Authors and Books

The researcher contacted 13 authors and invited them to participate in the study. These authors were selected because they had authored books published by Deseret Book that were not new releases. In some instances the researcher had a prior relationship with the authors. Of these 13, seven responded and said that they would be willing to participate in the study. Of the six remaining, three did not respond. The other three did respond to the query; two expressed concern about the financial impact on their book sales and one said that her book would not qualify for the study (presumably because it was still selling very well). The researcher chose to participate in the study as well; thus eight authors participated in the study.

Once the authors had been selected, they were given the opportunity to give input as to which of their currently backlisted books they would like to make available. Seven of the eight authors expressed a preference as to which book should be made available for free, and all of these requests were honored. The books selected for the study, their authors, genre, and audience are listed below.

1. *The Book of Mormon Sleuth Part 3: The Hidden Path*, by C. B. Andersen. Fiction for juvenile readers.
2. *What I Wish I Would Have Known When I Was Single*, by John Bytheway. Nonfiction for young single adults.
3. *Digging Deeper*, by Robert Eaton. Nonfiction for adults.
4. *Please Pass the Scriptures*, by John Hilton III. Nonfiction for youth.
5. *Sisters at the Well*, by Richard and Jeni Holzapfel. Nonfiction for adults.

6. *10 Secrets Wise Parents Know*, by Brent Top and Bruce Chadwick. Nonfiction for adults.
7. *Growing Up: Gospel Answers About Maturation and Sex*, by Brad Wilcox. Nonfiction for teenagers and their parents.
8. *Saving Kristen*, by Jack Weyland. Fiction for teenagers.

Making Books Available

A prerequisite to having books for people to download was making the files available online. In order to accomplish this, a Deseret Book associate located the original PDF files that had been used to print the books and created a virtual display case.

Another prerequisite to people downloading free digital books is people being aware that the books are there to be downloaded. Deseret Book made some minor efforts to let people know of the existence of the free books by posting messages on its Twitter and Facebook pages. In addition, several of the authors sent e-mails to family members, friends, and readers to let them know that the resource was available.

Data Collection Procedures

Several key pieces of data needed to be collected for this study to be successful. Because the purpose of the study was to determine the financial impact of making free digital books available, it was important to calculate the financial costs and benefits of doing so. This section describes data that were collected to determine the costs and revenue changes that might accrue as a result of this study.

Cost of Making the Books Available

One purpose of this study was to determine whether it was profitable for Deseret Book to make these eight books freely available. Thus, it was important to know what it cost Deseret Book to put the books online. The main cost associated with this endeavor was the time spent by Deseret Book employees gathering the files and creating the code to put them online.

Number of Downloads

The number of times each book was downloaded was tracked using Google Analytics. The purpose of collecting this data is to determine whether book downloads occurred. If sales changed but no books were downloaded, then the sales change could not be correlated with book downloads. In addition, tracking book downloads would also make it possible to look for correlations between high numbers of downloads and sales. For example, if a small number of books were downloaded over a three-week period of time, and during another three-week period of time a large number of books were downloaded, the researcher could examine whether there was a difference in print sales between the high and low download weeks.

Sales of Each Book

Any direct financial benefit for Deseret Book from making free books available would come in the form of increased book sales. Other benefits, including increased exposure for authors and any perceived change in consumers' opinions of the company, could not be measured in this study. Specific sales data were collected from Deseret Book. Sales data were tracked for each book for 10 weeks before and after the book was made freely available. Because the books were made available

for download during the middle of a week (September 9, 2009), this week was not counted in either the “before” or “after” sales data. The “before” dates were June 28, 2009 to September 5, 2009, and the “after” dates were September 13, 2009 to November 21, 2009.

It is important to note that although it is the book publisher, Deseret Book does not track *all* of the retail sales of books it publishes. It tracks its wholesale sales of books to other stores, sales from its retail stores, and sales from its online store; however, it does not track sales through other retailers. Although this is a weakness in the methodology of the study, there was no direct remedy.

Correlation Between Downloads and Sales

It was anticipated that some weeks in the study would have more downloads than others. Because it might take time for word of mouth (or blog) to generate publicity about the free books, downloads might increase toward the latter part of the study. In order to determine whether there was any correlation between downloads and sales, a Pearson’s r was calculated between these two variables. This was calculated both for downloads versus overall sales as well as downloads versus Internet-only sales.

Sales of Comparison Books

In addition to tracking the sales of the books that were released for free, sales of comparison titles were tracked. Books were chosen that would match as closely as possible with the books that were given away for free. Thus, if the free downloads had no sales effect, the comparison titles should have sales similar to those of the free e-book titles.

Because each book and author have unique audiences, it was determined that the best comparison titles for each book would be another book by the same author. In each case, the book title closest in publication date to the free book was selected as a comparison book. Unfortunately, the books authored by Top and Holzappel were unique in their style and audience, and no comparison book could be found for these titles. The comparison books for the other six books are as follows.

1. C.B. Andersen, *The Book of Mormon Sleuth 4: The Forgotten Treasure*
2. John Bytheway, *What We Wish We Would Have Known When We Were Newlyweds*
3. Rob Eaton, *Extremes*
4. John Hilton III, *I Lost my Phone Number... Can I Have Yours?*
5. Jack Weyland, *Cheyenne in New York*
6. Brad Wilcox, *Raising Ourselves to the Bar*

Year-Prior Book Sales

In addition to analyzing the sales for the 10 weeks before and after the books were made freely available, information was gathered on book sales for the previous year. This was to account for possible seasonal trends in book sales. For example, perhaps the 10 weeks prior to the book being made available for free download were historically the lowest sales weeks of the year. Without comparative historical data, it would be difficult to contextualize the sales data and determine if an increase in sales was more strongly related to the time of year or the free downloads. Sales trends for each book were compared year-on-year to further determine whether the free book downloads had a sales impact. The “before” dates were June 29, 2008 to September 6, 2008, and the “after” dates were September 14, 2008 to November 22, 2008.

Visits to Product Pages for Featured Titles

Ideally, a system could be set up to determine whether customers who purchased a book via <http://deseretbook.com> [<http://deseretbook.com>] had first downloaded a free e-book. Unfortunately, Deseret Book was not able to implement such a system. Instead, it tracked the number of times the product page for each book was visited.

At the location on the Internet where people could download the books, there was also an option to “buy the book.” Clicking on this link brought people to the product page. Obviously, the ultimate hope of Deseret Book is to get people to buy the book, not visit the product page; however, if the number of people who visited the product page increased after the free books were available, it could indicate that something positive was happening or might happen in the future with sales.

Measuring Financial Impact

This study used an interrupted time-series (ITS), quasi-experimental design to determine whether book sales increased after digital versions were made freely available. The ITS design takes a series of measurements before and after an intervention (the “interruption”) and looks at the difference in results before and after the intervention. The availability of the books at <http://deseretbook.com/free> [<http://deseretbook.com/free>] is the event that serves as the “interruption” in the ITS design.

Similar to the Johansen and Wiley (2010) study, the key measurement was to be the number of books sold after the free versions were made available, as compared with the number sold before the free versions were available. This comparison was done for each of the eight titles. The comparison titles were also examined to see if any change occurred in their sales. All 14 of these titles were examined during the year-prior period as well to determine whether any sales changes appeared to be seasonal.

A consistent trend across the eight books of higher sales after the free versions were made available would indicate a positive correlation between making free books available and sales of the print books. A consistent trend of lower sales would suggest a negative impact.

For the financial impact to be positive, the revenues from increased book sales would need to be larger than the costs of making the books available. A simple calculation was performed to answer this financial sustainability question, following Johansen and Wiley (2010).

$(\text{Cost to make available}) < (\text{Profit per book sale}) \times (\text{New attributable sales})$

Results

The research question of this study was, how does giving away digital books influence the print sales of those books? The sales data was obtained from Deseret Book and includes all copies sold in Deseret Book retail outlets as well as through its catalog and Internet divisions. In order to protect the privacy of authors’ sales data, the results have been made anonymous and will be represented as “Title 1,” “Title 2,” etc.

In the data collection, it was discovered that one of the books in the study was out of print and not available for purchase from Deseret Book during the study. Originally, it was understood that the book was going to be made available again; however, it was not. Thus, although this book was downloaded 14,914 times, no sales were recorded. Throughout the remainder of this section, this book will be referred to a “Title 8,” and is excluded from some analyses.

Publisher Costs, Downloads, and Sales

Data on the cost of posting the books on the web (as estimated by Deseret Book), were evaluated alongside data on book sales and downloads. Results are presented in the same order described in the “Data Collection” section.

Cost of Making the Books Available

The managing director of Deseret Book’s Internet division estimated that getting the e-books put together and creating the virtual display case for the e-books on the website cost \$940. He further estimated that to put eight additional books onto the website cost \$425. This would be the cost to locate the digital files and put them on the Internet. Thus, there were approximately \$500 in initial fixed costs, with each free e-book costing \$55 to post online.

Number of Downloads

Table 1 contains the number of times each book was downloaded for each of the 10 weeks that the books were made freely available. On average, each book was downloaded 12,820 times over the 10-week period ($SD = 1,943$).

Table 1: Downloads

Downloads, week ending (all dates 2009)

| | 20-Sep | 27-Sep | 4-Oct | 11-Oct | 18-Oct | 25-Oct | 1-Nov | 8-Nov | 15-Nov | 22-Nov | Total |
|----------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|--------------|---------------|---------------|---------------|
| Title 1 | 92 | 382 | 172 | 53 | 270 | 1631 | 1496 | 2104 | 1961 | 1242 | 9403 |
| Title 2 | 87 | 572 | 253 | 79 | 390 | 2125 | 1962 | 2628 | 2406 | 1587 | 12089 |
| Title 3 | 214 | 631 | 315 | 71 | 385 | 2150 | 2070 | 2785 | 2633 | 1632 | 12886 |
| Title 4 | 238 | 701 | 318 | 86 | 511 | 2718 | 2592 | 3488 | 3193 | 1991 | 15836 |
| Title 5 | 119 | 647 | 288 | 73 | 387 | 2162 | 2080 | 2809 | 2651 | 1636 | 12852 |
| Title 6 | 104 | 722 | 328 | 84 | 353 | 2084 | 2026 | 2689 | 2609 | 1585 | 12584 |
| Title 7 | 100 | 625 | 278 | 79 | 404 | 2071 | 1927 | 2568 | 2426 | 1514 | 11992 |
| Title 8 | 125 | 873 | 369 | 91 | 456 | 2488 | 2358 | 3156 | 3029 | 1969 | 14914 |
| Total | 1079 | 5153 | 2321 | 616 | 3156 | 17429 | 16511 | 22227 | 20908 | 13156 | 102556 |

It should be noted that Deseret Book tracked downloads on a Monday to Sunday week, so the “week endings” in Table 1 are different by one day from those in Tables 5 and 6. These tables track sales, which were calculated on a Sunday to Saturday week. The reason for the large jump in downloads that occurs during Week 6 will be detailed in the “Discussion” section below.

Sales of Each Book

Table 2 contains the sales data for each book for the 10 weeks before and after free digital versions were made available on the Internet.

Table 2: Pre-Post Sales

| Book | Sales before | Sales after | Change in sales | Change in sales(%) |
|--------------|---------------------|--------------------|------------------------|---------------------------|
| Title 1 | 19 | 29 | 10 | 53% |
| Title 2 | 22 | 19 | -3 | -14% |
| Title 3 | 21 | 30 | 9 | 43% |
| Title 4 | 62 | 38 | -24 | -39% |
| Title 5 | 21 | 19 | -2 | -10% |
| Title 6 | 30 | 39 | 9 | 30% |
| Title 7 | 88 | 157 | 69 | 78% |
| Title 8 | NA | NA | NA | NA |
| Total | 263 | 331 | 68 | 26% |

Overall, sales of these books increased 26% during the 10 weeks after the free digital versions were available versus the 10 previous weeks. Four of the seven books had increased sales. Because the free books were available online, it is reasonable to speculate that online sales may have had larger sales gains than retail sales gains. When retail and online sales were separated, the increase in online sales (79%) was dramatic compared with the increase in retail sales (17%). The researchers have no information as to why some books saw increased sales and others had decreased sales. As will be discussed below, this sales data is more helpful when viewed in an historical context.

Correlation Between Downloads and Sales

The download and sales data previously cited were combined to determine whether there was a correlation between downloads and sales. Did weeks that had higher downloads also have higher sales? Table 3 shows the total number of sales and downloads each week.

Table 3: Total Sales vs. Downloads

| Week Ending | Downloads | Sales |
|--------------------|------------------|--------------|
| September 19, 2009 | 954 | 12 |
| September 26, 2009 | 4280 | 20 |
| October 3, 2009 | 1952 | 44 |
| October 10, 2009 | 525 | 26 |
| October 17, 2009 | 2700 | 40 |
| October 24, 2009 | 14941 | 34 |
| October 31, 2009 | 14153 | 58 |
| November 7, 2009 | 19071 | 39 |
| November 14, 2009 | 17879 | 38 |

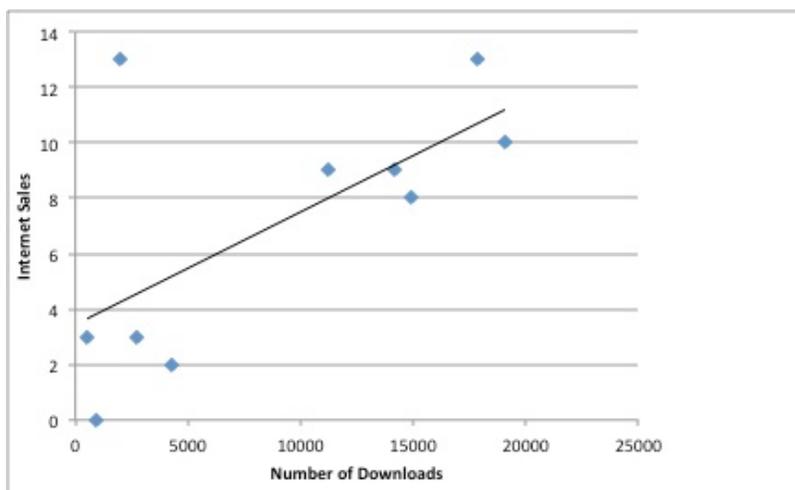
A Pearson correlation was calculated for these numbers, $r = 0.42$.

It seems plausible that Internet downloads would have a larger effect on Internet sales than on retail sales. Thus, the same calculations just described were performed again to determine whether a relationship existed between downloads and Internet sales. Table 4 shows this comparison.

Table 4: Total Internet Sales vs. Downloads

| Week Ending | Downloads | Internet Sales |
|--------------------|-----------|----------------|
| September 19, 2009 | 954 | 0 |
| September 26, 2009 | 4280 | 2 |
| October 3, 2009 | 1952 | 13 |
| October 10, 2009 | 525 | 3 |
| October 17, 2009 | 2700 | 3 |
| October 24, 2009 | 14941 | 8 |
| October 31, 2009 | 14153 | 9 |
| November 7, 2009 | 19071 | 10 |
| November 14, 2009 | 17879 | 13 |
| November 21, 2009 | 11187 | 9 |

The Pearson correlation coefficient was calculated between downloads and the number of copies sold online, $r = 0.65$. This is significantly higher than the correlation between downloads and total sales. Figure 1 represents the relationship between Internet sales and downloads.



[\[\[j/jep/images/3336451.0014.109-00000001.jpg\]](http://quod.lib.umich.edu/j/jep/3336451.0014.109-00000001.jpg)

Thus, it appears there is a stronger relationship between downloads and Internet sales than

downloads and total sales.

Sales of Comparison Books

Table 5 shows the before and after sales of the comparison titles. As described previously, there were no comparison titles available for Titles 5 or 8.

Table 5: Pre – Post Sales of Comparison Titles

| Book | Sales before | Sales after | Change in sales | Change in sales (%) |
|--------------------|---------------------|--------------------|------------------------|----------------------------|
| Comparison Title 1 | 33 | 30 | -3 | -9% |
| Comparison Title 2 | 354 | 47 | -307 | -87% |
| Comparison Title 3 | 8 | 12 | 4 | 50% |
| Comparison Title 4 | 18 | 12 | -6 | -33% |
| Comparison Title 5 | NA | NA | NA | NA |
| Comparison Title 6 | 261 | 183 | -78 | -30% |
| Comparison Title 7 | 33 | 61 | 28 | 85% |
| Comparison Title 8 | NA | NA | NA | NA |
| Total | 707 | 345 | -362 | -51% |

Overall, sales of the comparison books decreased 51% after the free digital versions were made available. It is clear that the majority of the difference in sales can be attributed to Comparison Title 2. This book was part of a large summer sale, and the large drop in sales occurred after the sale ended. When this title is excluded, sales of the comparison titles were down 15.6%.

Year-Prior Book Sales

Table 6 summarizes the sales of the studied books during the year 2008. This data was to be used as a comparison to the 2009 pre–post data. Sales of these books decreased 38.2% during this time period. Only one of the seven books had increased sales.

Table 6: Sales of Featured Books in 2008

| Book | Sales before | Sales after | Sales after | Change in Sales (%) |
|---------------------|---------------------|--------------------|--------------------|----------------------------|
| Change in Sales (%) | 73 | 37 | -36 | -49% |
| Title 2 | 64 | 49 | -15 | -23% |
| Title 3 | 40 | 27 | -13 | -33% |
| Title 4 | 250 | 110 | -140 | -56% |
| Title 5 | 37 | 59 | 22 | 59% |
| Title 6 | 118 | 56 | -62 | -53% |
| Title 7 | 95 | 80 | -15 | -16% |
| Title 8 | NA | NA | NA | NA |
| Total | 677 | 418 | -259 | -38% |

When each title's performance was compared to itself between the time periods studied in 2008 and 2009, each book did better during 2009 (the time period when the free books were available). Table 7 shows a comparison of sales of each book. This table compares sales of individual titles. As stated previously, the dates being compared are June 29, 2008 to September 6, 2008, versus September 14, 2008 to November 22, 2008, and June 28, 2009 to September 5, 2009, versus September 13, 2009 to November 21, 2009.

Table 7: Change in Sales of Each Featured Book, 2008 vs. 2009

| Book | 2008 change in sales | 2008 change in sales (%) | 2009 change in sales (%) | 2009 change in sales (%) |
|--------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|
| Title 1 | -36 | -49% | 10 | 53% |
| Title 2 | -15 | -23% | -3 | -14% |
| Title 3 | -13 | -33% | 9 | 43% |
| Title 4 | -140 | -56% | -24 | -39% |
| Title 5 | 22 | 59% | -2 | -10% |
| Title 6 | -62 | -53% | 9 | 30% |
| Title 7 | -15 | -16% | 69 | 78% |
| Title 8 | NA | NA | NA | NA |
| Total | -259 | -38% | 68 | 26% |

Thus, six of the seven books that were given away for free had better sales in 2009 than 2008.

In addition to historical comparison of the eight books that were distributed for free, historical analysis was also done on the comparison titles. Table 8 shows the before and after sales of the comparison titles in 2008. Sales of the comparison books decreased 67.8% during this time period. As with Title 2 during 2009, the vast majority of change in sales for the comparison titles in 2008 was due to large summer sales, this time of Comparison Titles 1 and 3. When these titles are excluded, sales of the comparison titles decreased 6.4%.

Table 8: Pre – Post Sales of Comparison Titles in 2008

| Book | Sales before | Sales after | Change in sales | Change in sales (%) |
|--------------------|---------------------|--------------------|------------------------|----------------------------|
| Comparison Title 1 | 701 | 67 | -634 | -90% |
| Comparison Title 2 | 400 | 400 | 0 | 0% |
| Comparison Title 3 | 1693 | 190 | -1493 | -88% |
| Comparison Title 4 | 48 | 32 | -16 | -33% |
| Comparison Title 5 | NA | NA | NA | NA |

| | | | | |
|--------------------|-------------|-------------|--------------|-------------|
| Comparison Title 6 | 269 | 231 | -38 | -14% |
| Comparison Title 7 | 115 | 116 | 1 | 1% |
| Comparison Title 8 | NA | NA | NA | NA |
| Total | 3216 | 1036 | -2180 | -68% |

Visits to Product Pages for Featured Titles

As stated previously, Deseret Book was not able to calculate the number of people who purchased books after looking at the free version; however, it did track the number of visits to the online product page of each book. Table 9 shows the number of times each book's product page was visited during the 10 weeks before and after the free books were made available.

Table 9: Visits to the Product Pages of Featured Titles

| Book | Visits pre-free books | Visits post-free books | Change in visits | Change in visits (%) |
|--------------|------------------------------|-------------------------------|-------------------------|-----------------------------|
| Title 1 | 10 | 302 | 292 | 2920% |
| Title 2 | 105 | 636 | 531 | 506% |
| Title 3 | 43 | 469 | 426 | 991% |
| Title 4 | 63 | 1686 | 1623 | 2576% |
| Title 5 | 15 | 578 | 563 | 3753% |
| Title 6 | 111 | 931 | 820 | 739% |
| Title 7 | 174 | 738 | 564 | 324% |
| Title 8 | 0 | 834 | 834 | * |
| Total | 521 | 6174 | 5653 | 1085% |

* percentage cannot be calculated—0 copies downloaded in the “pre” phase.

Table 10 shows the number of times each comparison book's product page was visited during the 10 weeks before and after the free books were made available. Overall, these visits decreased in the second 10 weeks by 201 visits, or a decrease of about 34%.

Table 10: Visits to the Product Pages of Comparison Titles

| Book | Visits pre-free books | Visits post-free books | Change in visits | Change in visits (%) |
|--------------------|------------------------------|-------------------------------|-------------------------|-----------------------------|
| Comparison Title 1 | 9 | 13 | 4 | 44% |

| | | | | |
|--------------------|------------|------------|-------------|-------------|
| Comparison Title 2 | 324 | 300 | -24 | -7% |
| Comparison Title 3 | 349 | 52 | -297 | -85% |
| Comparison Title 4 | 64 | 75 | 11 | 17% |
| Comparison Title 5 | NA | NA | NA | NA |
| Comparison Title 6 | 88 | 125 | 37 | 42% |
| Comparison Title 7 | 92 | 140 | 48 | 52% |
| Comparison Title 8 | NA | NA | NA | NA |
| Total | 593 | 392 | -201 | -34% |

The data leave no doubt that hits to the product pages increased dramatically after the free books were made available. Particularly when compared to the comparison titles, it is evident that the free e-books had a large positive impact on Internet visits to product pages.

Measuring Financial Impact

As stated previously, one way to measure financial impact is to use the following equation.

(Cost to make available) < (Profit per book sale) x (New attributable sales)

There are at least two different ways that “new attributable sales” could be determined based on the data obtained. One would be to take the number of sales over the 10-week period after the free e-books were made available and subtract the sales of the 10 previous weeks. This would result in a gain of 68 sales. A second way to calculate new attributable sales would be to compare the 2009 sales with the 2008 sales. In 2008, sales of the seven books decreased 38% in September to November, versus July to August. If a similar decline had occurred in 2009, 162 books would have been sold during the same time period as the 10 weeks after the free e-books had been made available. Thus, it could be said that there were 169 new attributable sales: that is, 331 (total number of sales) minus 162 (sales if 2008 change in sales figures had held constant). Profitability calculations will be made using both of these figures.

The third aspect of the equation is the “profit per book sale.” The average price of the seven books that were available for purchase was \$14.53. Because the actual profit that Deseret Book makes per book sold cannot be determined, we will make this calculation based on margin. Margin estimates here are based on the study’s 10-week time period. Longer time periods are reviewed in the “Discussion” section.

The more conservative estimate for new attributable sales is 68. Thus, the formula that includes both the initial fixed costs of creating the website, plus the cost of making the original eight e-books available would be:

$$940 < (\text{margin } \%) \times (14.53) \times 68$$

Thus, in order for Deseret Book to make a profit from making the books freely available, it would need to have a 95% profit margin. It is extremely unlikely that it could have such a profit margin.

If the less conservative estimate for new attributable sales is used, the formula would be:

$$940 < (\text{margin } \%) \times (14.53) \times 169$$

In this scenario, for Deseret Book to make a profit from making the books freely available, it would need to have a 38% profit margin.

In addition to calculating the profit margin necessary to recoup the costs of making the free books available, the financial viability of putting up additional free books was calculated. Because much of the cost of making the books available for free was in the initial design, the marginal cost of making additional books available is substantially less. Assuming that sales of future books where e-books had been created increased the same as in the present study, the cost-benefit analysis is as follows. For the conservative estimate of attributable new sales:

$$425 < (\text{margin } \%) \times (14.53) \times 68$$

Deseret Book would need a profit margin of 43% per book sold.

For the less-conservative estimate of attributable new sales:

$$425 < (\text{margin } \%) \times (14.53) \times 169$$

Deseret Book would need a profit margin of 17% per book sold.

Discussion

While the results of this study cannot be construed to imply causation, they nevertheless have interesting implications. In this section, some of the key results of this study are reviewed and discussed as well as directions for future research.

During this study, 102,556 free e-books were downloaded. This number seems to be sufficiently large to indicate that there is a demand for free e-books and that enough people viewed them as to possibly have an impact on sales. It is particularly interesting to note that Title 8, which was not available online or in Deseret Book retail stores, was the second-most frequently downloaded book; it was downloaded 14,914 times. This would seem to indicate that there is continued interest in accessing the work. These downloads further the argument that books can be important open educational resources, as stated by Lessig (2004). Thus, while Title 8 did not contribute to any financial gain seen by Deseret Book, it may have contributed to an educational gain made by the public.

Commercial Implications

The research question of this study was, how does giving away digital books influence the print sales of those books? In the 10 weeks following the free books being made available, sales of the seven books studied increased 25.9%. In contrast, the previous year sales of these seven books decreased 38.2% over the same time period. Furthermore, in 2009, the comparison books declined 15.6% (even after the title with the largest decreases in sales had been excluded). In 2008, the comparison books declined 6.4% (after the two titles with the largest decreases in sales had been excluded). Thus, based on historical and comparison sales, it would be expected that print sales of the seven books would decrease during the 10 weeks following the free versions of the books being made available. This decrease would be expected not as a result of the free versions; rather, it would be expected based on the fact that sales decreased for those titles the year previously, and for the comparison titles as well. However, sales did not decrease. The fact that sales increased when a decrease was expected is one of the most important findings of this study. This increase is similar

to that seen by some of the “free books” reported on in Hilton and Wiley (2010a).

Another important finding in this study was that there was a positive correlation (albeit weak) between book downloads and print sales. The correlation was stronger when Internet-only sales were considered. One theme uncovered throughout an analysis of the data is that free e-book distribution had a considerably stronger relationship with Internet sales than in-store sales. Internet sales increased 79% after the free e-books were made available, while in-store sales increased 17%. Hits to the product pages of the books that had been made freely available increased an astounding 1,085%. This facet of the research may have important implications for publishers that deal primarily or exclusively in online (versus in-store) retailing. Because most of Deseret Book’s sales are in-store versus online, the overall impact of free e-books was smaller than it might have been had a larger proportion of total sales been Internet based.

Although book sales increased during the 10 weeks that the e-books were available for free download, the increased sales during these 10 weeks alone were likely not sufficient to recoup the costs of making the books available. When the conservative estimate for attributable sales was used, Deseret Book would need to have a 95% profit margin to make a profit. It is extremely unlikely that it could have such a profit margin. When the less-conservative number of attributable book sales was used, the sales margin needed to break even was 38%.

But both of these scenarios assume that any increased sales due to the free books being made available occurred during the 10 weeks the books were made available online for free. This assumption is suspect for at least two reasons. First, it is possible that many of the people who downloaded books did not immediately read them. These people might later read (and purchase) the books. Second, there is little cost to keeping the free books available on the Internet once they are online. Thus, if continued free availability of e-books led to continued increased sales, the profit calculations described previously would change significantly.

Another factor when considering financial impact is that Deseret Book made little effort to market the free e-books. If people went to <http://deseretbook.com> [<http://deseretbook.com>], they would find no link to the “free” page. If Deseret Book had used more publicity, it is possible that more books would have been downloaded, leading to increased sales. In the present study, it was a mass e-mail sent by one of the researchers during the sixth week of the study (announcing the free e-books and encouraging recipients to forward the message) that initiated the large jump in downloads.

This leads to one facet of financial impact that was not explicitly explored in this study—the benefit Deseret Book received by increased exposure. Many people received notices via e-mail encouraging them to go to <http://deseretbook.com> [<http://deseretbook.com>] and download a free e-book. Would people have been as likely to forward on e-mails advertising \$2.99 e-books? And the increased exposure went beyond e-mail. A Google search of “<http://deseretbook.com/free>” [<http://deseretbook.com/free>] shows approximately 35 blog entries about Deseret Book giving away free books. The web page was also mentioned multiple times on Twitter and Facebook. On some weeks, hits to <http://deseretbook.com/free> [<http://deseretbook.com/free>] represented about 3% of total traffic to Deseret Book. What would the marketing cost be in sending fliers to get so many people to visit its website? Although the benefit of the increased publicity is difficult to quantify, it should nonetheless be considered by those considering making free e-books available. As C. Anderson (2009) points out, this additional exposure could be monetized.

Educational Implications

Many have argued that free digital materials will improve education. This study adds to a body of

knowledge demonstrating that there is a demand for free digital materials. It also shows that, at least for the present, in some circumstances it is possible to make educational resources available for free in such a way as to not lose money. Hilton and Wiley (2010c) describe the efforts of Flat World Knowledge to do just that with college textbooks.

For authors and publishers who depend on print sales to make money, giving away digital copies of their work may not be a smart strategy in the long term. However, for academics and others who are writing primarily to disseminate information, with book sales numbers being a tangential motive, the concept of giving away digital copies of their work has important educational implications.

Limitations

One limitation of the present study is the relatively small number of books studied. Eight was a small number to begin with and the elimination of one book was detrimental to the study. To strengthen this area, a future study should include a larger number of books. Furthermore, Deseret Book serves a relatively small market. Future studies should include larger publishing companies.

Another weakness of this study was that it only included sales data from Deseret Book retail stores and its catalog and online sales. Although this captured a significant portion of sales, it would have been possible to capture a broader range of sales data by using the BookScan database. BookScan did not respond to requests to use its database for this study; however, it may be possible that BookScan would be willing to grant access for future studies.

The study could also have been strengthened if it were of a longer duration. In this study, sales data was compared for 10 weeks before and after the free books were made available. Future studies could compare sales data over longer periods of time. This would be particularly helpful in determining the financial impact of making free books available. As stated previously, if the higher sales that occurred in the 10 weeks after the books were made available continued for 20 or 40 weeks, there would be significant financial implications. The present study being limited to 10 weeks cannot provide evidence on what would have happened to sales if the free e-books had continued to be available. This should be remedied in future studies.

Future Research

One question that should be considered is: If e-readers become more popular, how much will that change people's proclivities to read digital books? For example, Amazon.com said that they sold more e-books on Christmas Day 2009 than physical books, marking the first time this had ever happened (Paul 2009). Perhaps most important, if publishers made all or most of their books available for free digital consumption, would that have an overall negative effect on sales? In other words, in the present study the seven books saw increased sales, likely due to the special attention they received from being downloaded 102,556 times. If all books were available for free online, would they see this same sales benefit?

Michael Jensen of the NAP recently reported that his organization (which makes all of its materials available for free) is facing declining sales (Hadro 2010). Only a short while earlier, Jensen had pointed out that giving digital books away had increased its sales (Jensen 2007). Thus, when dealing with free digital content, what worked today, may not work tomorrow. Furthermore, additional studies should be done to see whether different types of free books (e.g., PDF download versus HTML display), have different correlations with print sales.

The present study indicates that in certain contexts making books available for free online does not

appear to have a negative effect on sales. However, this could change rapidly if e-readers are more fully adopted. Even during the time of this study, and the writing of this paper, the market around digital publishing has changed dramatically. Continued research is necessary to determine how (or if) free e-books affect print sales of books. In addition, should digital book sales eclipse print sales, the more important question will be, how do free e-books affect digital sales of books

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