2020 Scholastic Analytics Case Competition

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Scholastic ought to care about sustainability. This sentiment seems frightening and costly, but our analysis of Scholastic's data shows that they can contribute to creating a more sustainable publishing landscape while increasing their profitability. According to an article published by *The Economist*, paperbacks were created as a result of paper shortages during World War II. We are excited to share our methods with Scholastic so that we can all move into a more sustainable future by reducing the use of paper while increasing profits.

Through analysis of the data, we found that there was a significant overlap in the type of books that are popular across both channels, but the total number of titles and the revenue from the channel vary greatly. The first step in coming to this conclusion was cleaning the data in Python. According to the prompt given by Scholastic, we have been tasked to analyze trends between the two distribution channels across the nation. We interpreted this as limiting the scope of our analysis to records coming from the 50 U.S. States. Additionally, we removed any extreme outliers in the price column such as records with a price of $0 or above $100.

On initial observation, we found that Channel 1 has a revenue of $6.9 million and $7.8 million in Channel 2. This finding forced us to examine why Channel 2 performs better than Channel 1. Extracting the total number of titles sold in each channel, we found that Channel 1 sold 7,019 unique titles compared to 1,838 unique titles in Channel 2. Even more interesting is that despite the difference in unique titles sold, Channel 2 sold more units and contributed more revenue than Channel 1. In Channel 1, there were 826,667 units sold and 1,159,450 units were sold in Channel 2. The average revenue per title in Channel 1 is $986 and $4264 in Channel 2. This approach led us to the conclusion that Channel 2 has a more practical, more profitable approach which also closely aligns with Scholastic's goal of getting more books into the hands of children.

According to our observations, Channel 1 has 26.8% hardback books compared to 12.5% in Channel 2. Channel 1 has a greater negative environmental impact than Channel 2 because the production of hardbacks requires more paper than paperbacks. Additionally, the average price of books in Channel 1 is greater than Channel 2's. This can be attributed to the use of more resources during the production of hardbacks. The higher ratio of hardbacks in Channel 1 increases the average unit price in this channel. In Channel 1, the average unit price is $8.37 and $6.76 in Channel 2. Therefore, there is an environmental incentive and a cost incentive to produce more paperbacks.

Given all of our findings, we have concluded that Channel 1 is working as a test market for Channel 2. Channel 1 casts a wide net to identify the titles which will sell best in the years to come. Channel 2 consists of those books which have proven themselves to be bestsellers in Channel 1. The data shows that this approach is working for Scholastic, but we would like to offer an alternative approach that offers a focus on sustainability and cost reduction. We propose that Scholastic merge its two channels and therefore merge its distribution channels and the total number of book titles for sale. The disadvantage of merging the channels is the loss of the role which Channel 1 fills. Therefore, this approach would require a heavy reliance on data analytics to fulfill the role of Channel 1 to find those books which will sell best. The rest of the effects are largely positive. The distribution costs will decrease dramatically as a result of distributing fewer titles. This reduction of costs results in a better bottom line for Scholastic. The raw materials used will also be decreased because fewer titles must be printed in the first place. Using fewer raw materials is not only cheaper for Scholastic, but also works toward the goal of a more sustainable world which this proposal hopes to accomplish.

Additional Source: "Why Books Come out in Hardback before Paperback." The Economist, The Economist Newspaper, 15 Oct. 2014, www.economist.com/the-economist-explains/2014/10/15/why-books-come-out-in-hardback-before-paperback.