Valuing A B2B Website: A Case Study Of An Industrial Products Supplier

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ABSTRACT

In this research we examine the value of a business-to-business (B2B) website of an industrial products supplier by tracking website metrics (e.g., visitors, pages/visit, time per visit, etc.), along with the associated (non-Web-based) financial measures of sales, profit and amount of merchandise sold. We recorded this data over a 15 month period that included a significant mail promotion. Our results indicate that while the promotion dramatically increased visits to the websites, it had no positive effect on sales, profit or quantity of material sold. Generally, there was no relationship between website visits and monetary measures.

Keywords: Business-to-Business, B2B, Industrial products, Value of information technology, Website effectiveness

INTRODUCTION

There has been a longstanding debate on the value of organizational investments in information technology (IT). While some have argued that investments in IT are closely linked to organizational effectiveness (Bhatt & Grover 2005, Santhanam & Hartono 2003) others have gone so far as to argue that "IT doesn't matter" (Carr 2003). With the rise of the Internet and e-commerce, a focus has turned to evaluating commercial websites. Determining the number of visitors and related metrics for a business website is relatively trivial, but assessing its business value is more complex. For business-to-consumer (B2C) websites, this valuation task is facilitated by the fact that purchases are typically made via the website. Analytics can be compiled on sales data, the effect of promotions on sales, how website design changes impact sales, etc. For business-to-business (B2B) websites without "shopping cart" functionality the task is considerably more challenging.

In this research we examine the value of a business-to-business (B2B) website of an industrial products supplier by tracking not just website metrics (e.g., visitors, pages/visit, time per visit, etc.), but the associated (non-Web-based) financial measures of sales, profit and amount of merchandise sold. We recorded this data over a 15 month period that included a significant mail promotion; a major focus of this study is determining the impact of this promotion on the number of visits to the web and determining if these visits are correlated with increased sales.

INDUSTRIAL PRODUCTS B2B WEBSITES

van Riel, Pahud de Mortanges, & Streukens, (2005) stress the value and importance of branding and brand management for industrial brands due to a) the commoditization of many industrial products and b) the increasing importance of B2B. Perry and Bodkin (2002) among others suggest that B2B websites can be used for advertising, sales promotion, public relations and direct marketing.

While the usefulness of B2B websites is generally recognized, measuring their value still remains elusive. A principal conclusion of a Forrester Report on B2B marketing (Ramos 2007) is that, "Business-to-business (B2B) marketers collect mounds of data …. but still struggle to find effective ways to measure and demonstrate success." Some 44% of the survey respondents cited "demonstrating ROI" as the top challenge in managing their website.

COMPANY BACKGROUND

Specialty Metals, Inc. (SMI)[1] is a relatively small (< $50M in annual sales) United States-based distributor of different grades of a variety of metals used in industrial manufacturing. One of their better-known products is stainless steel, an alloy whose physical properties do not degrade as easily as ordinary steel. As a result, stainless steel is used in many applications ranging from surgical equipment to cookware.

SMI's market niche is based on a number of factors:

1. They have expert knowledge regarding which suppliers manufacture the different grades of metals, and who does so reliability.
2. They sell in small quantities.
3. They cut material to user specified sizes, with tolerances of less than .001 of an inch.
4. They ship items in stock the same or next day.

SMI's customers are generally small companies that make parts out of the metals they purchase. They generally can't buy directly from mills (the metal producers) as their orders are not large enough. These customers do not inventory the metals purchased from SMI, and typically purchase what they need for specific jobs they have in hand. One purchase may not be an accurate predictor of future purchases; that is one purchase may not signal what will be purchased in the future, or when a future purchase will occur. The individuals making the purchasing decisions may be engineers, purchasing agents or the business owners.

SMI is well-respected in its market space. Their competitors are other intermediaries providing similar services.

SMI markets their products through direct mail, advertising in trade magazines and, more recently via advertising on two industrial-products "white pages" websites. In mid-2008 SMI decided to extend their marketing reach by establishing a company Web presence. The goals of the company's website were to a) drive new sales, b) make product and contact information available and c) give/add legitimacy to brand.

Further, in addition to providing them with another opportunity for reaching out to their traditional clients, the website would enable SMI to extend their reach to many more companies in the US, Europe and Asia. The Asian market is particularly important to SMI given the shift towards manufacturing in the Pacific Rim.

Given the intricacies of SMI's products, their goal was not to allow users to enter orders over the Web. However, in addition to providing descriptions of the products and services offered by SMI, the website does allow potential customers to submit request for quotations; that is a request to be contacted. These requests are given to inside sales staff for follow up. So, as is the case for other B2B providers, there's no direct way to connect a visit with a sale as there is no "shopping cart" on the website.

There are a number of questions that would be useful for SMI to have answered. Foremost of these are the following:

- How many people visit the website?
- Is the website generating interest and does this interest yield actual sales?
- Do traditional promotions drive web traffic, and in turn drive incremental sales?

SMI commissioned a professionally produced brochure providing an overview of the company's products and services and sent it to potential customers in mid-December 2008. The list of potential customers and their addresses was purchased by SMI. The total cost of the promotion is estimated to be approximately $25K. SMI was expressly interested in determining the effect of this promotion.

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[1] Specialty Metals, Inc. is a pseudonym for the actual company represented here. Some other details, not relevant to the thrust of the case, have been disguised or hidden as well. The problem description and data are authentic.

ANALYSIS

We analyzed SMI website data over the period May 25, 2008 – August 29, 2009. The start date was the first full week the website was up. The end date was selected as it coincided roughly with the launch of another SMI website. (We felt this alternate site might affect the relevant data of the primary website.) The time frame includes the promotion mentioned above. A chart of weekly visits to the SMI website is provided in Figure 1.

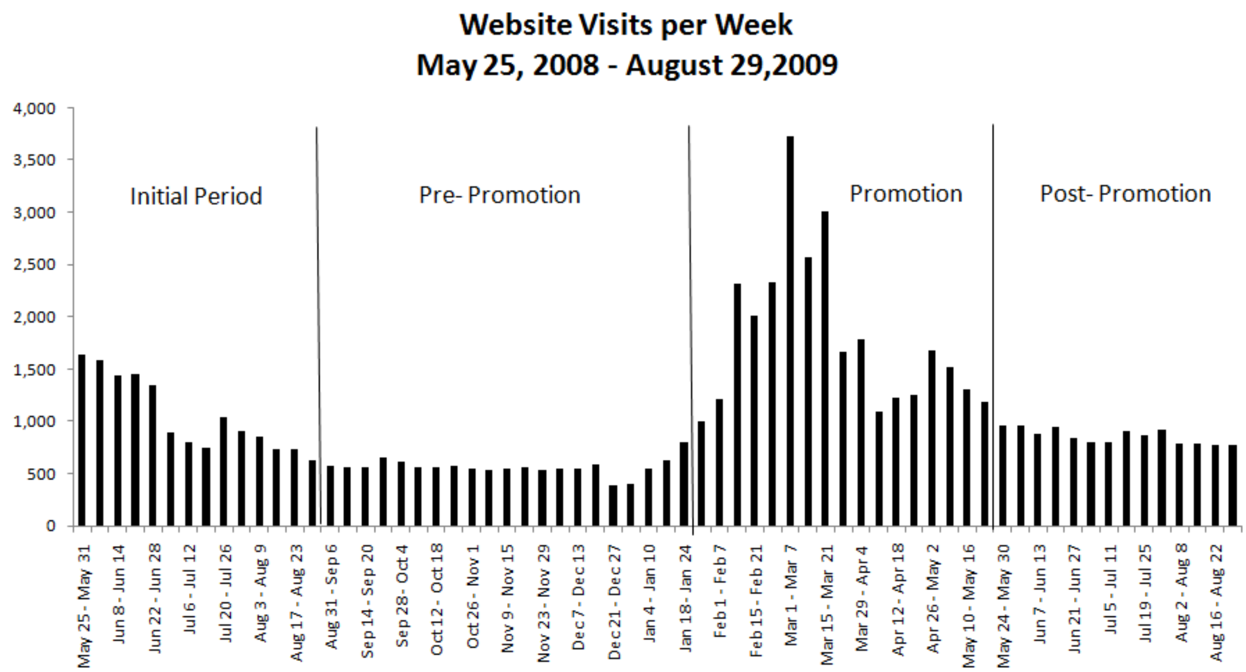

Figure 1: Visits to the SMI Website per Week

We've divided the entire time frame into four sections. The first comprises the "initial" or "break-in" period for the website. The second, established when visits appear to stabilize at a roughly constant level, is the "pre-promotion" interval. The "promotion" period begins shortly after SMI's promotion took place and website visits dramatically increased. The final period, "post-promotion," begins when visits appear to level off again. Two points are worth noting. First, it seems clear from both the data and feedback from SMI management that this general partitioning makes sense. For example, we have website data through the present time (May 2010) and visits remain approximately at the same level as the post-promotion period so we know that the jump associated with the promotion period is not some seasonal variation. Secondly, while there is some arbitrariness about the exact cutoffs between periods, if we vary these cutoffs in any reasonable way, our overall results (to follow) don't change.

One major conclusion from the chart is that the promotion had a significant impact in terms of the number of visits to the website. This becomes perhaps more clear by viewing Figure 2 below, which breaks out the mean number of visits per week by period. The differences are statistically significant ($p < .001$). However, SMI provided us with sales revenue, profit, and pounds of material sold over the same time frame. We provide the mean sales revenue over each period in Figure 3. There are no figures on the vertical axis of the revenue chart, as we need to conceal SMI financial data, but the results are clear: while visits spike as a result of the promotion, there is no corresponding rise in sales revenue. (In fact, mean revenue drops.) The patterns are similar for profit and pounds of material sold.

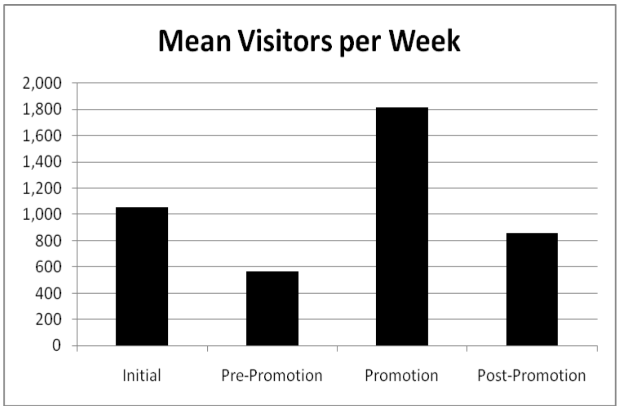

Figure 2: Mean Website Visits per Week by Period

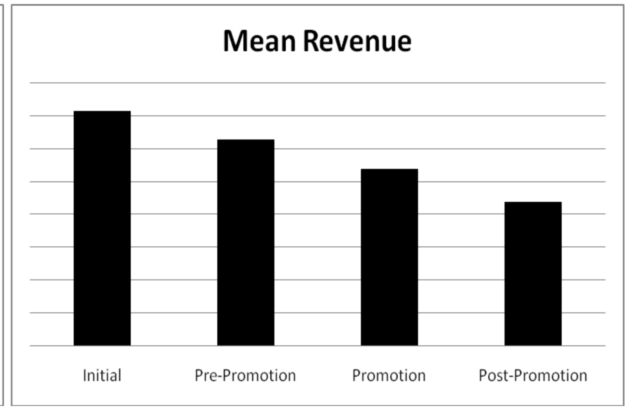

Figure 3: Mean Revenue per Week by Period

Further, the simple linear correlation coefficient between website visits and sales revenue is effectively zero (r = -.056). The scatter diagram of revenue vs. visits is provided in Figure 4. Again, revenue numbers have been omitted."

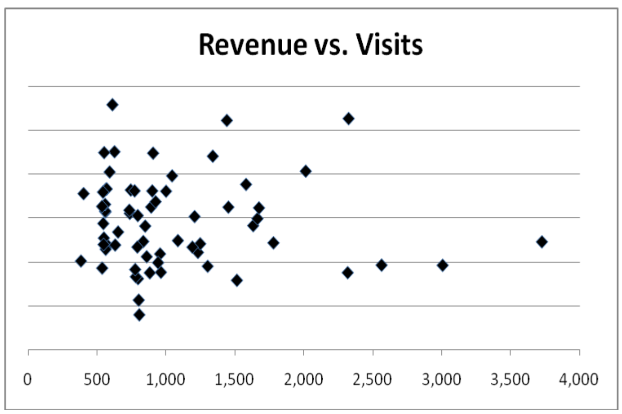

Figure 4: Scatter Diagram of Sales Revenue vs. Website Visits

Clearly there is no obvious relationship between the two variables. To see if visits were correlated with later sales, we lagged visits by one, two, three and four weeks, and examined each lagged variable with sales. Again, no correlation, and the scatter diagrams resemble the one above. The results are equivalent when we look at profit and visits, and pounds sold and visits. We then examined the number of inquiries generated via the website. Summary results are presented in Figure 5. We note first that there are relatively few inquiries generally (certainly as compared to the number of website visits). SMI receives approximately 125 phone inquiries per week. Unfortunately, they do not keep track of how many of these resulted from a visit to the website. Secondly, like revenue, profit and pounds sold, the number of inquiries is not related to the number of visits.

We examined two Web metrics, the number of pages viewed per visit and the time spent on the site, by period. Summary results are provided in Figures 6 and 7. Generally, visitors to the SMI website view on average about two pages and spend about a minute and a half on the site. While visits were dramatically up during the promotion period, pageviews and the time visitors spend on the website during the promotion period were the lowest of all four periods.

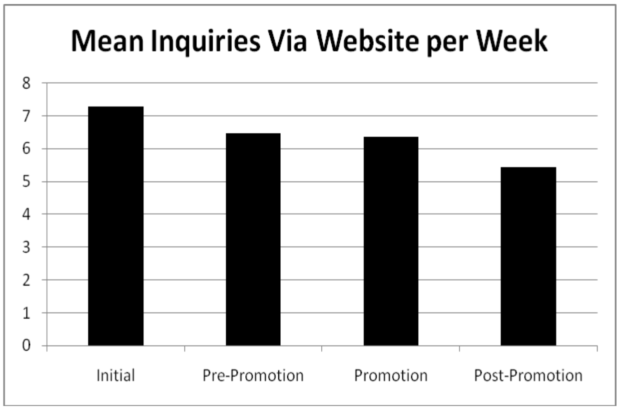

Figure 5: Mean Inquiries Generated Via The Website Per Week, by Period

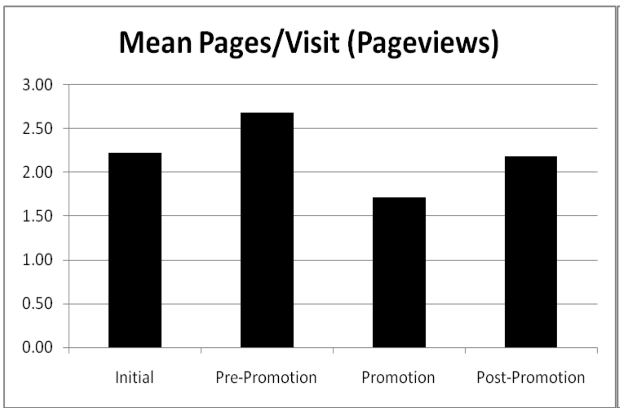

Figure 6: Mean Pageviews per Week by Period

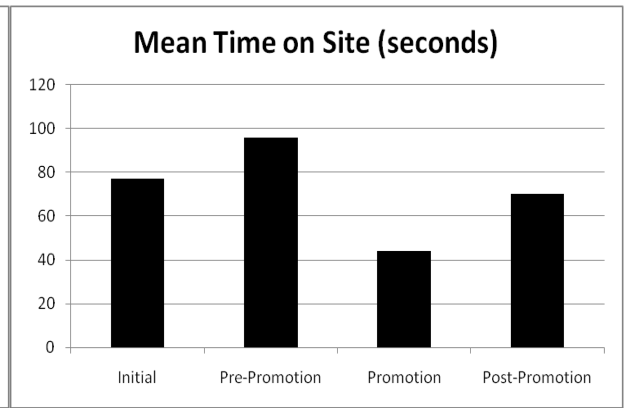

Figure 7: Mean Time on Website per Week by Period

It would seem that the promotion prompted individuals to visit the website for a quick check, but not much more. Finally, we looked at the percentage of new visitors to the SMI website. (A new visitor is one who hasn't visited the website before, as determined by a cookie placed on the Web browser of the visitor the first time s/he visits the site.) Overall, approximately 80% of the visitors to the SMI website are new visitors. The promotion increased the percentage of new visitors by approximately 8% as compared to the pre-promotion period; this was a statistically significant difference ($p < .001$).

DISCUSSION, CONCLUSIONS AND FUTURE RESEARCH

Over the 15 months of our study, weekly visits to the SMI website ranged from a low of approximately 500 to peaks of around 3,000. The mail promotion had a clear and dramatic effect on visits, apparently moving them from an average of almost 600 per week prior to the promotion to a weekly average of 1800 for the promotion period. However, the mean pages per visit and the mean time spent on the site decreased during the promotion period, as compared to the pre-promotion period. After the immediate effects of the promotion, we see an increase in the general level of visits; the post-promotion period shows average weekly visits at just over 800 – an increase of about 200 over the pre-promotion average visits. However, there is no indication that increased web traffic has resulted in increased sales. Neither sales revenue, nor profit, nor quantity of goods sold increased during the promotion period or during the post-promotion period. Further, there appears to be no statistical correlation between these metrics and number of visitors to the website. Likewise the increased visits had no impact on the number of Web-based inquiries.

One possible explanation for these results is that, as noted previously, SMI customers typically make a purchase when they have a contract in hand. (Therefore, for example, they won't respond immediately to promotional material.) However when they do need to make a purchase, it can be argued they will more likely purchase from a company they recognize and respect. The website, and the promotion that drove the incremental visits to the website, may be valuable in contributing to the brand recognition of SMI.

There are other possible explanations for the disconnect between visits and sales – for example, poor website design. Future possible work includes an evaluation of the SMI website, surveying customers regarding their perceptions of the website, tracking the number of phone inquiries to SMI resulting from website visits, and extending our methodology to similar companies in order to validate our results.

AUTHOR INFORMATION

Rob Weitz is associate professor in the Department of Computing and Decision Sciences in the Stillman School of Business at Seton Hall University. His research has appeared in, among others, *The International Journal of Artificial Intelligence in Education*, *The Journal of the Operational Research Society*, *The Journal of Management Information Systems*, *Information and Management* and *Decision Sciences*.

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