The Blur Age: Effective Communications in Today's Changing Environment
Rudolph Magnani

The Reality of ROI: Dell’s Approach to Measurement
Marlene Bender
Art Zambianchi

Unlocking the Challenges of Professional Services Marketing
Jennifer D. Chrzastek
Cyndy Reid

Paint the Town Ted: Launching an Airline Using IMC Principles
Martin Wodarz

Back to Nature: Big Food Enters a Niche Market
Kristin McDaniel

Employee Bloggers: Turning a Potential Liability into Your Best Weapon
Christopher Hannegan
Sara Fisher

The Athens 2004 Olympic Games: An Event Study
George Spais, Ph.D.
George Filis, Ph.D.

Spinning Off Hospira: Shifting Communications Paradigms
Tareta Adams
Shannon Gore
The Athens 2004 Olympic Games: An Event Study

by George S. Spais, Ph.D. & George N. Filis, Ph.D.

ABSTRACT

The manner in which sponsorship affects image is unique, and likely to be missed by conventional measurements of corporate value and brand equity. Scholars argue that current methods of sponsorship evaluation really measure the publicity surrounding the sponsorship and not the sponsorship itself. The major objective of this study is to measure the impact of an Olympic games sponsorship program, which targets the public of investors. We address the core research themes of our analysis using an event-study methodology. Our intention is to test 440 daily stock prices and transaction volumes in order to investigate the potent relationship between the announcement of a grand sport sponsorship program and investors’ behavior. For this study we examined the announcement data of three grand sponsors of the 2004 Olympic Games in Athens (Alpha Bank, Delta, and G.T.O.). The authors propose that service organizations must build sponsorship programs targeting the public of investors.

Introduction

According to Abratt, Clayton, & Pitt, modern sponsorship has moved from primarily a philanthropic activity to mutually advantageous business arrangements between sponsors and the sponsored (1987). The objectives sought by sponsoring organizations are focusing more and more on exploitable commercial potential and measurable results (Farely, 1997; Wilson, 1997; Cornwell, 1995) and less on altruism or a sense of social responsibility without expectation of return.

The manner in which sponsorship affects image is unique and likely to be missed by conventional measurements of corporate and brand equity (McDonald, 1991). McDonald (1991) also argues that current methods of sponsorship evaluation really measure the publicity surrounding the sponsorship and not the sponsorship itself. The problem that arises from the lack of a clear theoretical definition considers the strategic objectives that result in sponsorship programs, reflects on the difficulties of measuring the success of sponsorship programs (noting that organizations will judge success in different ways), reflects on the controversial aspects of some sponsorship programs, and examines groups at which a sponsorship might be targeted. It concludes that sponsorship has a significant (some would say major) role to play in
increasing sales, enhancing corporate image, and leveraging employee morale. It suggests significant areas that merit further research in this greatly neglected academic area.

The major objective of this study is to test if an Olympic Games sponsorship program can influence investors’ behavior: p. So, our research aim is to test, if p is true.

Our intention is to test 440 daily stock prices and transaction volumes in order to investigate the potent influence the announcement of a grand sport sponsorship has on investors’ behavior. For this study we examined the announcement data of three grand sponsors of the 2004 Olympic Games in Athens.

The three grand sponsors: A brief description

**Alpha Bank**

John F. Costopoulos founded Alpha Bank in 1879 when he established a small commercial firm in the city of Kalamata. In 1918 the banking department of the “J.F. Costopoulos” firm was renamed to “Bank of Kalamata.” In 1924 the Bank’s headquarters were moved to Athens and it was renamed “Banque de Credit Commercial Hellenique.” In 1947 the title was changed to “Commercial Credit Bank,” in 1972 to “Credit Bank” and finally in March 1994 to “Alpha Credit Bank.” The Bank has grown considerably in the last decades. Beyond providing banking services and products, it has developed into a major group offering a wide range of financial services.

In 1999 the bank acquired 51 percent of the shares of the Ionian Bank. On April 11, 2000 the merger of the Ionian Bank was approved through absorption by Alpha Credit Bank.

The name of the bank, resulting from this merger is Alpha Bank. The Bank’s activities cover the entire range of financial services.

It is acknowledged as an innovator in introducing new electronic services, such as:
- Alphaphone (banking services over the phone)
- Alphaline (PC link)
- Alpha Web Banking (banking services through the Internet)
- Alpha Bank m-Banking (banking services over a mobile phone)

Alpha Bank is the second largest bank in Greece. With 450 branches, Alpha Bank Group is also active in the international banking market, with presence in Cyprus and Southeastern Europe as well as in New York, London, and Jersey in the Channel Islands.

**Delta**

Delta was set up in 1952 by the late Aristides Daskalopoulos as a family-run business producing yogurt and distributing milk. The company was first established in 1968 as Delta Dairy S.A. In November 1999, it reorganized under the name Delta Holding S.A. Today, Delta Holding S.A. is the parent company of one of the largest food manufacturing groups in Greece, leading the market in the following segments: fresh dairy, ice cream, fresh juice, frozen food, ready-made meals, and quick-service restaurants and catering.

Since 1999, Delta Holding S.A. has run on a flexible organizational structure to support the operations and development of its subsidiaries. The company has been listed on the Athens Stock Exchange since 1990.

**G.T.O. (Greek Telecommunications Organization)**

OTE ranks among the top groups of companies in Greece and the top-ten telecommunications organizations in Europe. Its marketing policy is customer focused with a spectrum of more than 65 products and an extensive commercial network of 370 commercial outlets.

Regarding infrastructure, the OTE network was developed to anticipate real market demands and to offer advanced services to customers. Therefore it provides: 99.6 percent digitalization of switching systems;
20.3 kilometers of optical fiber cables; an ISDN network with 503.336 ISDN-BRA and 9.168 ISDN-PRA subscriber units installed, and many other features.

Background study and hypotheses

Service organizations and the halo effect

Many services have a high degree of credence and ambiguous attributes. Consumers cannot evaluate credence attributes even after a service has been consumed (e.g. the hygiene conditions in the kitchen of a restaurant). Credence attributes assume that consumers know that neither search nor experience can help them evaluate credence attributes. This does not always seem to be the case, and Hoch & Deighton (1989) and Hoch & Ha (1986) proposed ambiguous attributes as a further category next to Darby & Karni’s (1973) search, experience, and credence attributes. They define ambiguity in the sense that the evidence is consistent with more than one hypothesis. Ambiguous attributes are perceived and evaluated by the consumer (nothing is missing in contrast to credence attributes), but they can be perceived in more than one way. For example, a messy desk in a travel agency could be interpreted by the consumer with regard to the perception of service quality as not relevant information, an exceptional occurrence, or a direct indicator of the service quality provided. If consumers fail to recognize the full range of possible interpretations, the evidence (the messy desk) will be seen as more diagnostic than it is (Hoch & Deighton, 1989).

The perception and evaluation of both credence and ambiguous attributes can be influenced by other factors such as expectation and previous knowledge (e.g. Herr, Sherman, & Fazio, 1982). It seems reasonable to assume that consumers who evaluate the performance of credence and ambiguous attributes also use the performance of search and experience attributes. Services show a higher degree of credence and ambiguous attributes than goods, and therefore may also be more prone to halo effects between their attributes. Gaining an understanding of halo effects in satisfaction models may be particularly important for marketers and investor relations managers of service organizations.

Derivation of communication theory to be adopted

Halo effects have not yet been examined in the context of investors’ satisfaction. They have been observed extensively in pre-choice evaluations (e.g. Beckwith, Kassrjian, & Lehmann, 1978; Holbrook, 1983) and in a wide range of evaluations from goods (e.g. Moore & James, 1978), retail stores (Wu & Petroshius, 1987), and cities (James & Carter, 1978) to people in various contexts, including personnel recruitment and performance appraisal (e.g. Farh, Cannella, & Bedeian, 1991), interpersonal judgment (e.g. Murphy & Jako, 1989; Nisbett & Wilson, 1977), and self-assessment (Lay & Jackson, 1969). Although it has not been tested yet, it seems reasonable to suggest that halo effects also occur in attribute-specific measures used in investors’ satisfaction research, i.e. measures of disconfirmation-of-expectations and satisfaction.

The conceptualization and measurement of cognitive dissonance has been a recurring theme of the investors’ psychology recently (Prast & de Vor, 2005). Referring as it does to the “psychological consequences of buying decisions” (Engel, 1963, p.55), the research community’s treatment of the dissonance construct has at times been heated, yet for the most part, non-committal. Wilkie (1986, p.557) for example, states that while “scientists have been debating for years over the precise nature of dissonance theory and its explanations,” much of the psychology literature has not been “flattering” and studies in marketing “have led to both positive and negative results.” Not surprisingly, empirical evidence to support the existence
of the construct has been sparse, with some studies concluding that the existence of the construct of cognitive dissonance has not been proven (Chapanis & Chapanis, 1964). Wilkie (1986, p.557) suggests that such debates “do not mean that dissonance does not occur or that it cannot lead to significant impacts on consumer behaviour.” What they do, however, is “suggest caution in accepting dissonance explanations too easily or expecting that the results will always occur.”

**Behavioral finance**

Behavioral finance deals with the influence of psychology in financial decisions and argues that factors such as fear, greed, risk seeking, and peer group pressure have an important role in investment considerations. Hirshleifer’s study (2001) argues that financial decisions are made not only under the examination of new information, but also based on the investors’ psychology for the stock prices. In addition, Barberis & Thaler (2001) point out that investors’ behavior is a major consideration for decision-making and thus there should be models which can capture investors’ behavior in asset pricing.

Ritter (2003) argued that there are two blocks of behavioral finance, namely, how investors think and whether the markets are efficient or not. He pointed out that regarding the first block, i.e. how investors think, there are several influences. These influences can be outlined such as beliefs, preferences, heuristic behavior, and overconfidence. According to Chana, Frankelb, & Kotharib (2004), investors tend to be over-confident which in return causes an overweight of their private information and an underweight of the public information. The most recent evidence (Chen, 2003; Hirshleifer & Welch, 2001; Hong & Stein, 1999) shows how investors’ imperfect memory are prone to follow new information signals in volatile environments. Investors tend to believe more in recent information rather than the old information. Many times it has been observed that old news is of no influence (Chen, 2003).

Based on the above evidence, we believe that investors (in a stable environment) optimally respond to memory loss with excess inertia, defined as a higher probability of following old decisions than would occur under full recall.

**Some communications effects of sponsorship activities**

Several empirical efforts have investigated the objectives companies try to achieve through their sponsorship activities. Early studies found that media objectives were the first priority (Abratt, Clayton, & Pitt, 1987; Waite, 1979). More recent studies point to a shift in the priority of the objectives. Gardner & Shuman (1987) conducted a survey among 300 of the Fortune 500 companies regarding their sponsorship practices. They reported that the highest priority was given to broad corporate objectives. A survey among the Fortune 1000 companies in the U.S. supports this trend. The two main objectives of sponsorship reported were to enhance corporate image (corporate objective) and to increase awareness of brands (marketing objective), (Shanklin & Kuzma, 1992). The Fatt, Poon, Wei, Yuen, & Suan (2000) study looks at the enhancement of corporate image, which is considered a strategic objective, in order to shift expectations of the various stakeholders and investors. Thus, a clear shift from emphasizing media objectives to emphasizing corporate objectives (e.g., corporate image) is apparent.

**Event studies in the sponsorship context**

Clark, Cornwell, & Pruitt (2002) consider the sponsorship of stadiums and arenas and Cornwell, Pruitt, & Van Ness (2001) consider the value of winning an auto racing event. Of particular relevance to our study, however, is the work of Farrell & Frame (1997), which
considered Olympic sponsorships. All the above studies are considered important, as sponsorship announcement data are used.

Thus, the influence of psychology in financial decisions and the clear shift of service organizations to prioritize the strategic objective of corporate image empowerment suggest two hypotheses:

(H\textsubscript{1}): If p is true, then q\textsubscript{1} is true (p \supset q\textsubscript{1})

where:

(q\textsubscript{1}) The relationship between the impact of a sponsorship for Olympic Games and investors’ risk perceptions will be positive for reducing investors’ perceived risk.

(H\textsubscript{2}): If p is true, then q\textsubscript{2} is true (p \supset q\textsubscript{2})

where:

(q\textsubscript{2}) The relationship between the impact of a sponsorship for Olympic Games and investors’ perceptions for stock returns will be positive for increasing investors’ expectations for increased returns.

Method

Our intention is to test daily stock prices and transaction volumes to investigate the potent influence of the investors’ behavior on three grand sponsors of the 2004 Olympic Games in Athens (Alpha Bank, Delta, and G.T.O.), as an indicator of the sponsorship programs’ effectiveness.

In order to reject or accept the stated hypotheses, we performed an event-study. The event-study methodology is used to examine the reaction of investors to positive and negative news. It involves the following steps: (1) identification of the events of interest and definition of the event window, in addition we define a pre-event window and a post-event window; (2) prediction of a ‘normal return’ during the event window in the absence of the event; (3) estimation of the abnormal return within the event window, where the abnormal return is defined as the difference between the actual and predicted returns; and (4) testing whether the abnormal return is statistically different from zero. In order to determine the ‘normal return’ of the stock, the market model will be introduced, as one of the most widely used models (Dasgupta et al., 1998). The model assumes that there is a linear relationship between the return of any stock to the return of the market portfolio:

\[ E(R_s) = a + bR_{mt} + e_t \] [1],

where:

\[ E(R_s) \] = expected or normal return of the stock at time \( t \)

\[ R_{mt} \] = return of the market at time \( t \)

Equation [1] will be estimated based on the pre-event window period. Having estimated the ‘normal returns’ we will estimate the abnormal returns, within the event window, as:

\[ AR_s = R_s - E(R_s) \] [2].

Finally, under the null hypothesis, the abnormal returns should have a mean of zero. The event window will include -20 and +20 days before and after the event day. The pre-event window will be from -220 until -21 days before the event day and the post-event window will be from +21 until +220 days after the event day.

The analysis of the pre- and post-event data such as transaction volumes, volatility, and stock returns will enable us to make significant comments regarding the effect of the sponsorship programs on investors’ behavior. As we were able to conclude from the literature review, investors’ behavior is an important issue for the stock markets. However in order to test the effect of information to the investor, one has to take samples from the pre- and post-event period. For example, if there is an event that has a negative impact on an investor’s thinking, then we should expect that the stock prices will fall and the trading volumes should
become lower as well. Investors’ behavior analysis through transaction volumes and stock price fluctuation was also documented by Huddart, Lang, & Yetman (2003).

In total, 440 daily stock prices and transaction volumes were tested.

**Measures**

Huddart, Lang, & Yetman (2003) performed a study of the investors’ behavior on trading volumes and stock price fluctuations. Performing an event study, they were able to conclude that investors’ behavior influences the trading volumes of the stock market and the stock prices themselves.

The measures used to test the hypotheses were obtained through classical buying behavior and trading analysis. The key variables were volatility (risk) and transaction volume (Barberis & Thaler, 2001; Hirshleifer, 2001; Daniel, Hirshleifer, & Teoh, 2001).

**Data Analysis**

Apart from the event study, we will also use t-statistics and F-statistics in order to examine the impact of the announcement on stock’s risk level and stock’s transaction volume. The t-statistics will be performed between: (1) the pre-event window and the event window, (2) between the pre- and post-event window, and (3) between the event window and the post-event window.

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### Results: Interpretation of the findings

**Impact of the announcement on stocks’ returns**

**Table 1**

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>T-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>0.366</td>
<td>0.71</td>
</tr>
<tr>
<td>GTO</td>
<td>-1.081</td>
<td>0.28</td>
</tr>
<tr>
<td>Delta</td>
<td>2.18</td>
<td>0.03</td>
</tr>
</tbody>
</table>

T-test on the abnormal returns during the event window

Delta’s abnormal returns are significant (see Table 1). This means that Delta’s announcement as a Grand Sponsor had a significant impact on its returns. Regarding the other two, (Alpha and GTO) it seems that the event did not significantly affect their returns. This result is not surprising, as Alpha Bank and GTO are two of the largest firms in the Greek economy and investors were quite sure of their presence as sponsors, which was something that did not happen for Delta.

**Impact of the announcement on stocks’ volatility (risk)**

**Table 2**

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>F-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>2.24</td>
<td>0.0003</td>
</tr>
<tr>
<td>GTO</td>
<td>1.04</td>
<td>0.81</td>
</tr>
<tr>
<td>Delta</td>
<td>3.53</td>
<td>0.00</td>
</tr>
</tbody>
</table>

F-test on the difference between stock’s volatility (comparison between the pre-event window and during the event window)
Table 3

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>F-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>1.01</td>
<td>0.99</td>
</tr>
<tr>
<td>GTO</td>
<td>1.14</td>
<td>0.64</td>
</tr>
<tr>
<td>Delta</td>
<td>1.18</td>
<td>0.44</td>
</tr>
</tbody>
</table>

F-test on the difference between stock’s volatility (comparison between the event window and the post-event window)

Table 4

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>F-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>2.27</td>
<td>0.00</td>
</tr>
<tr>
<td>GTO</td>
<td>1.19</td>
<td>0.21</td>
</tr>
<tr>
<td>Delta</td>
<td>2.97</td>
<td>0.00</td>
</tr>
</tbody>
</table>

F-test on the difference between stock’s volatility (comparison between the pre-event window and the post-event window)

Impact of the announcement on stocks’ transaction volume

Table 5

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>T-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>3.11</td>
<td>0.0021</td>
</tr>
<tr>
<td>GTO</td>
<td>0.73</td>
<td>0.46</td>
</tr>
<tr>
<td>Delta</td>
<td>0.85</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Table 6

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>T-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>0.16</td>
<td>0.87</td>
</tr>
<tr>
<td>GTO</td>
<td>0.09</td>
<td>0.92</td>
</tr>
<tr>
<td>Delta</td>
<td>1.57</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Table 7

<table>
<thead>
<tr>
<th>Sponsors</th>
<th>T-statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Bank</td>
<td>4.39</td>
<td>0.00</td>
</tr>
<tr>
<td>GTO</td>
<td>1.63</td>
<td>0.09</td>
</tr>
<tr>
<td>Delta</td>
<td>4.10</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 5, 6, and 7 indicate that there is an impact on the transaction volume by the announcements of the three sponsors. The only exception was GTO. Regarding Alpha Bank during the event window, the transaction volumes were increased compared with the pre-event window and the transaction volumes were increased if we compare the pre-event window and the post-event window. The event window for Alpha Bank shows a highly significant increase in the transaction volumes, as compared with the pre-event window. Also, there is a significant increase in the transaction volumes of Delta after the event, compared with the transaction volumes before the event. Based on the above findings, we can both accept \( q_1 \) and \( q_2 \). Therefore, \( p \) is true.

Discussion

Implications for investor relations managers

According to the literature, there are some influences on how investors make decisions. These influences are related to: beliefs, preferences, heuristic behavior, and overconfidence.
This means that investors tend to be over-confident, which in return causes an over-weight of their private information and an underweight of the public information. Investors’ imperfect memory are prone to follow new information signals in volatile environments. Investors tend to believe more in recent information rather than the old information.

The theory suggests that purchase decisions for financial assets should be made on the basis of investor beliefs regarding the future return and risk of those assets.

Based on the theoretical and empirical evidence, we believe that investors, in a stable environment, optimally respond to memory loss with excess inertia, defined as a higher probability of following old decisions than would occur under full recall. Thus, investor relations managers must seriously assess the volatility of the environment as the strongest force which influences investors’ behavior.

Due to the problem of intangibility in service organizations, we strongly believe that investor relations managers (especially of service organizations) must realize the added value of building sport sponsorship programs targeting the investing public. Such activities can empower issues such as: confidence, trust, reliability, and quality.

If we accept that there is added value in building sport sponsorship programs for service organizations, another important consideration for investor relations planning is the on-going analysis of investors’ behavior. The on-going analysis of the structure of the investors’ decision-making process will allow investor relations managers to establish specific and measurable communication goals for the corporate sponsorship programs.

**Limitations of the study**

The use of event-study methodology is both a strength and a weakness of this study. The event-study methodology enhances generalizability because volatility (risk) and transaction volume (sales) measures studied are based on measures of the general buying behavior analysis for a wide variety of products, services, and brands. However, more solid results can be achieved if more than one stock (at the same event date) could be analyzed. Yet in this study, because of the different dates of announcements, the analysis was focused only on one stock per event date.

**Conclusion**

Empirical research in marketing on sponsorship effect has largely focused on sponsoring corporate objectives such as enhancement of corporate image and increase of brand awareness. However few (Fatt, Poon, Wei, Yuen, & Suan, 2000) have specifically focused on shifting expectations of the investors.

Our findings suggest that service organizations should target the public of investors. Organizations can measure the success of a sponsorship program, which targets investors, using an event-study methodology (based on the “market model”).

This study provides a useful extension of past research streams on the measurement of sponsorship program effectiveness, based on sponsorship announcement data. Because of the characteristics of services, service organizations should recognize the added value of the public of investors to the accomplishment of strategic goals.
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