An Examination of Pfizer's Crisis Communication Strategies in the Celebrex Case

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Managing a corporation's image is important in crisis situations. Critical analysis is used to analyze the communication strategies of Pfizer Incorporated when discussing their drug Celebrex. Both Benoit (1995) and Marcus and Goodman (1991) communication frameworks are used to determine if Pfizer communicated in a way that enhanced shareholder value. Our analysis finds that Pfizer utilized both accommodating and defensive strategies during the Celebrex crisis with mixed stock price reaction. This study replicates prior research which examined Merck Pharmaceutical's communication strategies when the drug Vioxx was removed from the market.

INTRODUCTION

A corporation's reaction to a crisis is instrumental in repairing any damage to its image. A corporation's image will affect stakeholder behavior including possible changes in customer buying patterns, lending practices by creditors, and decisions to buy or sell stock. It is essential that corporate management do an effective job of managing the company's image so as to minimize any negative impact on stakeholders and the company. This is true for all types of organizations, including those in the pharmaceutical industry.

One such crisis involves the COX-2 inhibitor prescription medicines which have been available since 1998. Studies have shown that these medicines have been linked to a high risk of cardiovascular incidents and gastrointestinal bleeding (Antman et al., 2007). Two of the three medicines, Vioxx, manufactured by Merck, and Bextra, manufactured by Pfizer, have been recalled. The remaining medicine Celebrex, manufactured by Pfizer, continues to be prescribed for arthritis sufferers (Henderson, 2007).

Vioxx was pulled from the market on September 30, 2004 due to evidence that the drug resulted in increased cardio-vascular problems for patients using this drug. At the time, Celebrex was the main market competitor and faced similar scrutiny, yet Celebrex was never withdrawn from the market and continues to be prescribed. The purpose of this paper is to examine the image repair communication strategies that Pfizer utilized in press releases concerning the safety of Celebrex. We use Benoit's (1995) Image Restoration Typology to analyze Pfizer's responses in the media following allegations that

Celebrex posed a health threat. We then compare the analysis using Benoit's framework to the framework used by Marcus and Goodman (1991) who found that different types of communication strategies had varying levels of success in providing value to shareholders, depending on the type of organizational crisis.

Marcus and Goodman (1991) discovered that the stock market reacts differently to corporate communications that are accommodating compared to those that are defensive during times of accident, scandal, and product safety crisis. Marcus and Goodman concluded that their ambiguous results in the product safety crisis may be the result of the latent nature of the effects of corporate communications, therefore suggesting a replication with a different group of observations.

Stone, Erickson, and Weber (2012) used Benoit's framework with Marcus and Goodman's results to examine Merck's corporate responses to the Vioxx scandal, finding mixed results as to whether the strategies used (accommodating versus defensive) were effective in providing shareholder value. An examination of Celebrex, which is a similar drug, facing similar accusations, but one which withstood recall pressures will shed additional light on the effectiveness of various communication strategies in the face of crisis.

CELEBREX HISTORY

Celebrex is one of the best-selling prescription drugs available today. It is the last of the prescription COX-2 inhibitor pain drugs on the market (Thomas, 2012). Manufactured by Pfizer, Celebrex was, until recently, on extended patent protection until December 2015; however, this extension was recently revoked and Celebrex's protection ended in May 2014 (Parloff, 2014).

Celebrex was approved by the FDA in December 1998. Celecoxib was developed by researchers at Searle R & D, a division of Monsanto in the early 1990s. In early 2000, Monsanto became a wholly owned subsidiary of Pharmacia Corporation, which was a product of a former merger between Pharmacia and Upjohn in late 1999. Pfizer acquired Pharmacia on April 16, 2003 and retired the Searle name. Pfizer is a publically traded company, but Monsanto and Pharmacia were not publically traded during the time they owned and marketed Celebrex (Monsanto, 2013).

Celebrex is marketed as a treatment for the pain associated with osteoarthritis and rheumatoid arthritis. Its uses have expanded to familial adenomatous polyposis (PR Newswire, 2002). Researchers have studied its usefulness in areas such as ankylosing spondylitis (PR Newswire, 2000), orthodontic root reabsorption (Jerome et al., 2005), liver metastasis (Wenger et al. 2002), Alzheimer's disease (Hoozemans & O'Banion, 2005), and colon polyps (Nelson, 2006).

People suffering from arthritis pain have several options available to relieve their pain. While more aggressive options for treating inflammation and its associated pain include steroid injections, other non-steroidal anti-inflammatory drugs (NSAIDs) are available. Many are sold over the counter, including aspirin, ibuprofen, and naproxen. These do alleviate pain, but also carry the risk of gastrointestinal injury. The prescription class of drugs called COX-2 inhibitors, including Celebrex, Vioxx, and Bextra, were marketed as NSAIDs which treated inflammation and pain, but were expected to have a lower incidence of gastrointestinal risks.

Pfizer has conducted many studies on Celebrex over the years. The CLASS study (Celebrex Long-term Arthritis Safety Study) was designed to examine the long term benefits and risks of NSAID use in arthritis patients. While it was concluded that Celebrex did not carry a higher cardiovascular risk than the other NSAIDs, nor did it carry an elevated risk of gastrointestinal events (PR Newswire, 2002), it was discovered that Celebrex combined with a low dose aspirin caused three times the incidence of complicated ulcers compared to those taking aspirin alone (PR Newswire, 2002).

The SUCCESS 1 study compared Celebrex to non-selective NSAIDs in treating osteoarthritis pain. The large sample size of 13,000 was not designed to measure cardiovascular risks. In the SUCCESS study, Celebrex was found to have a lower risk of GI complications but only demonstrated pain management similar to that of traditional NSAIDs, diclofenac and naproxen (PR Newswire, 2001).

The APC Trial was run to test the effects of Celebrex in reducing colorectal polyp growth. This study began in 1999, but Celebrex was removed from this study after an oversight board determined that Celebrex carried an increased risk of cardiovascular complications (Kaufman 2004). This oversight board monitoring began after Vioxx, another COX-2 inhibitor NSAID, was pulled from the market for cardiovascular risks.

The ADAPT trial began in 2001 and was sponsored by the National Institute of Aging. It tested the effectiveness of Celebrex and Naproxen and a placebo at delaying the onset of Alzheimer's disease. Because of the withdrawal of Vioxx from the market, the removal of Celebrex from the concurrent APC trial, and the findings that naproxen was associated with an increased risk of cardiovascular events in this study (Recer, 2004), the ADAPT trial was cut short after 23 months.

The results indicting heightened risk were outlined in a timeline provided by Hissey Kientz LLP, Attorneys at Law (2013). Their summary of the Celebrex crisis is summarized next. In 1999, the year following the introduction of Celebrex, Pfizer conducted a study which found that Alzheimer's patients who took Celebrex suffered heart attacks 3.6 times more often than those in a placebo group. The study was not published or submitted to the FDA (Kaufman, 2005). In April of 1999, the Wall Street Journal reported that Celebrex was linked to 10 deaths and 11 gastrointestinal hemorrhages. In December 2004, a study found that Celebrex users were 3.4 times as likely to have a severe coronary event with an 800 mg dosage and 2.5 times more likely with a 400 mg dosage. The trial was halted when the risk factor were discovered (Manier & Japsen, 2004).

Pfizer acknowledged in February 2005 that its study six years prior resulted in Celebrex users suffering heart attacks 3.6 times more often than placebo patients, but claimed it sent the information to the FDA at the time of the study (Kaufman, 2005). The FDA directed Pfizer to discontinue Direct to Consumer advertising in December 2004 (Hensley, Winslow, & Mathews, 2004). In August 2005, Celebrex was directed by the FDA to have a "black box warning" on its packaging, clearly indicating the risks. Sales of Celebrex dropped 40% during the year 2005. In February 2007, the American Heart Association recommended that Celebrex should be used in the lowest possible doses and for the shortest duration of time as possible. The AHA also recommended that high risk cardiac patients be fully informed about the excess cardiovascular risks. The FDA change in labeling requirements only partially followed the AHA recommendations (Antman et al., 2007).

The results of the research studies combined with the actions, and reactions, of Pfizer Pharmaceuticals have raised concerns over the safety of the drug and the integrity of the company management. In times of crisis or scandal, the communications by management can help to repair the tarnished image that has resulted from the crisis. Our current study will examine Pfizer's corporate communications concerning the safety of Celebrex and compare these communication strategies to those of Merck when Vioxx was pulled from the market. Benoit's framework as well as Marcus and Goodman's findings will be used. Results will be compared to those in Stone, Erickson, & Weber (2012).

IMAGE RESTORATION THEORY

Benoit

Benoit's (1995) image restoration typology has been used to analyze many different types of individual and organizational communications by those in the midst of a crisis. The five categories of strategies provide fourteen (14) different types of communications, as shown in Table 1

TABLE 1
BENOIT'S (1995) IMAGE RESTORATION STRATEGIES

Categories	Strategy	Description/example
Denial	1. Simple denial 2. Shifting the blame	Refuting outright that the organization had any part in the event Asserting that someone else is responsible
Evasion of responsibility	3. Scapegoating 4. Defeasibility 5. Accident 6. Good intentions	Blaming the event on the provocation of another Not knowing what to do; lacking knowledge to act properly Claiming the event was "accidental" Claiming the company had good intentions
Reducing the offensive act	7. Image bolstering 8. Minimization 9. Differentiation 10. Transcendence 11. Reducing the credibility 12. Compensation	Using puffery to build image Stating the crisis is not bad Indicating that this crisis is different from more offensive crises Asserting good acts far outweigh the damage of this one crisis Maintaining the accuser lacks credibility Paying the victim; making restitution to set things to where they were before the event
Taking corrective action	13. Corrective action	Taking measures to prevent event from reoccurring
Mortification	14. Mortification	Admitting guilt and apologizing

The communication classification categories are somewhat hierarchical in that denial is the best strategy, if a company is truly blameless. Evasion of responsibility, blaming the crisis on the provocation of another, claiming defeasibility or the accidental nature or good intentions of the company becomes a good choice if the company is not able to convince the public that it had no responsibility for the crisis. If evading the crisis is not feasible, organizations can instead attempt to reduce the offensiveness of the crisis. Very few companies take immediate corrective action and even fewer use mortification by apologizing.

Marcus and Goodman

Marcus and Goodman (1991) categorized corporate crises into three types. First, accidents have victims that are identifiable and involve an unfortunate event that occurs without warning. The authors explain that the company in the crisis "can plausibly deny responsibility for an accident because it can claim that the events occurred almost entirely by chance" (Marcus & Goodman, 1991, p. 284). A second type of crisis includes scandals, which are "disgraceful or discreditable occurrences that compromise the perpetrators' reputations" (Marcus & Goodman, 1991, p. 284). The third type of crisis, a product safety and health incident, is described as not being a single crisis, but rather a series of events. The Celebrex story would best be categorized as fitting into the third category.

Marcus and Goodman's framework divided corporate communication responses into two categories, accommodating and defensive. Accommodating signals are those in which management accepts responsibility, admits to the existence of the problem, apologizes, and takes action to remedy the

situation. Defensive policies include those in which management denies the existence of a problem, alleviates doubts about the firm's future viability, denies intent, and takes actions to resume normal operations quickly (Marcus and Goodman, 1991).

Marcus and Goodman (1991) found that for crises classified as accidents, defensive communications had a positive effect on shareholder value, as measured by the closing stock price on the day the crisis was disclosed in the press, using a model that tests for excess returns. Alternatively, accommodative communications had a positive effect for scandals. They showed an inconclusive effect for product safety and health crises. A comparison of Benoit (1995) and Marcus and Goodman is provided in Table 2:

TABLE 2

Marcus and Goodman (1991) Corporate Policy signals	**Benoit's Crisis Communication Framework**
Accommodating	Corrective Action Mortification
Defensive	Denial Evasion of Responsibility Reducing the Offensiveness

Stone, Erickson, and Weber (2012) analyzed Merck's media communications and the stock market reactions on the days of those communications during the period that Vioxx was pulled from the market. Merck most often used the strategy of bolstering their image followed by minimization, but also used defeasibility and good intentions strategies. Although the Vioxx crisis was a product recall, Stone, Erickson, and Weber provided evidence that because Merck withheld information on the dangers of Vioxx, the crisis could be considered a scandal. Marcus and Goodman (1991) found evidence that accommodating strategies have a positive effect on shareholder value for both scandals and product recalls and defensive strategies had negative effects. Stone, Erickson, and Weber expected negative stock prices when Merck removed Vioxx from the market, but found mixed results. The following research questions are addressed:

RQ1: What communication strategies, using Benoit (1995) and Marcus and Goodman (1991) did Pfizer use in the Celebrex crisis?
RQ2: Are there major differences between communication strategies used by Merck (Vioxx) and Pfizer (Celebrex)?
RQ3: What was the effect on stock market prices of Pfizer during the Celebrex crisis?

DATA AND METHODOLOGY

We examine Pfizer's responses to media questions and concerns beginning with the day after Vioxx was withdrawn from the market – October 1, 2004 – and continue our analysis until November 30, 2006. Of special interest are corporate responses surrounding the publishing of research results which exposed the elevated health risks associated with Celebrex use.

Critical analysis methodology is used to analyze the communication strategies employed by Pfizer spokespeople. Critical analysis of strategic communication has been used by many scholars, including Benoit (2006); Benoit and Henson (2009); Coombs (1995); Huang and Su (2009); Erickson, Weber, Segovia, and Dudney (2010); Erickson, Weber, and Stone (2011); Seeger, Sellnow, and Ulmer, (1998); and Stone, Erickson, and Weber (2012). A variety of texts have been evaluated using critical analysis, including public relations announcements, speeches, advertising, and newspaper articles.

Wall Street Journal, and *New York Times* excerpts which exemplify Pfizer's responses to the crisis, were analyzed using Benoit (1995). Proquest was used to find all articles regarding Celebrex health concerns from October 1, 2004 through November 30, 2006. The beginning date coincides with the day

after Vioxx was removed from the market. The end date of November 30, 2006 was chosen because at this point, any reference to comparing Celebrex with Vioxx had virtually ended. Quotes from company employees and spokespeople that related to the safety of Celebrex were used for analysis. Articles that pertained to other types of crises at Pfizer, for example problems with other drugs or criticism from financial analysts, were not included as part of this study. Two researchers independently categorized the excerpts and all categorizations were mutually agreed upon.

RESULTS

Pfizer used a wide variety of communication strategies to address questions that arose concerning this crisis. A total of 18 articles in the *New York* Times and 23 articles in the *Wall Street Journal* contained quotes from Pfizer representatives concerning the safety concerns of Celebrex. Many articles contained more than one quote – a total of 91 distinct communication strategies were used in these articles. Table 3 provides a summary of the types of responses categorized according to Benoit to answer RQ1:

TABLE 3
CATEGORIES OF COMMUNICATION RESPONSES - CELEBREX

Typology	**Number of Times Used**	**Total for Category**
Denial:		
Denial	21	
Shifting the Blame	6	
Total for Denial		**27**
Evasion of Responsibility		
Scapegoating	2	
Defeasibility	5	
Accident		
Good Intentions	10	
Total for Evasion of Responsibility		**17**
Reducing the Offensiveness		
Bolstering Image	10	
Minimization	6	
Differentiation	12	
Transcendence	4	
Reducing the Credibility	4	
Compensation		
Total for Reducing the Offensiveness		**36**
Taking Corrective Action	11	11
Mortification		
TOTAL		91

Pfizer spokespeople did use the strategy of corrective action 11 times, mainly by indicating that the company would pull advertising from the media or add additional warnings to Celebrex. In addition to this strategy, which is the preferred strategy in terms of making things right with those who may risk future health problems, Pfizer also used less desirable communication strategies.

The most common response that Pfizer used was that of simple denial, asserting that Celebrex was indeed safe from harmful side effects. An example of this type of response was provided by Dr. Gail Cawkwell, part of the medical team at Pfizer, in response to anticipated sales of Celebrex after Vioxx was removed from the market, stating, "All of our long-term studies to date show a safe cardiovascular profile" (Martinez, Mathews, Lublin, & Winslow, 2004, p.4). Another example is Pfizer's released statement that it was "confident in the long-term cardiovascular safety of Celebrex" (Steinberg & Vranica, 2004, p.1).

Another common strategy that Pfizer used was that of differentiation, mainly because the company frequently made an attempt to compare Celebrex favorably with Vioxx. For example, Dr. Feczko, president of Pfizer drug development, stated "even though they are both Cox-2 inhibitors, they have differential safety profiles" when confronted about Vioxx safety issues (Hensley, 2004a). Another example of this strategy is when Dr. Cawkwell stated that although Celebrex patients in a trial study did have significantly more cardio vascular problems that those who had taken a placebo, she stated, "the patients had very different cardiovascular histories", emphasizing that those receiving Celebrex were sicker than those receiving the placebo (Berenson, 2005).

Examples of good intentions included a comment made by Dr. Cawkwell, "the medicine is an important treatment for arthritis pain" (Berenson, 2005). Another Pfizer spokeswoman stated, "Rather, it's the health and well-being of patients along with the guidance that we receive from the FDA that inform our decisions" when trying to refute that Pfizer was only using product liability concerns in making decisions about the safety of Celebrex (Martinez & Hensley, 2004).

Defeasibility was also used several times, including the statement made by Mr. McKinnell, CEO of Pfizer. He stated, "The most important thing is that we don't allow the confusion and uncertainty to push us to a premature decision" (Hensley & Winslow, 2004). This indicates that Pfizer was trying to indicate that all of the studies provided confusing data – that they did not yet have all the answers. Minimization strategies included a comment by Mr. McKinnell who urged people to "Calm down a little bit" (Hensley, 2004b).

Table 4 categorizes the number of Pfizer communications into Marcus and Goodman's (1991) framework:

TABLE 4

Marcus and Goodman (1991) Corporate Policy signals		**Benoit's Crisis Communication Framework**	
Accommodating	11	Corrective Action	11
		Mortification	0
Defensive	80	Denial	27
		Evasion of Responsibility	17
		Reducing the Offensiveness	36

Pfizer used very few accommodating strategies – defensive strategies were used in almost 88% of all communications. As will be discussed later in the paper, Marcus and Goodman (1991) found no significant difference in shareholder value between accommodative and defensive strategies when the crisis was of the product recall type.

RQ2 asks whether there are differences between how Pfizer reacted to scrutiny about Celebrex and how Merck reacted to the Vioxx crisis. A comparison between Merck's responses following the Vioxx crisis and Pfizer's responses following the Celebrex crisis follows in Table 5. The Vioxx crisis covered a shorter time period in the media because Vioxx was pulled from the market, whereas Celebrex issues covered a longer time period as talks with the FDA continued. Therefore, the responses were converted to percentages.

TABLE 5
VIOXX VERSUS CELEBREX

Strategy	# responses Celebrex	% of total responses	# responses Vioxx	% of total responses
Simple denial	21	23%	1	3.7%
Shifting the blame	6	6.6%		
Scapegoating	2	2.2%		
Defeasibility	5	5.5%	3	11.1%
Accident	0	0		
Good Intentions	10	11%	2	7.4%
Image Bolstering	10	11%	12	44.5%
Minimization	6	6.6%	6	22.2%
Differentiation	12	13.2%		
Transcendence	4	4.4%		
Reduce credibility of accuser	4	4.4%	3	11.1%
Compensation	0	0		
Corrective Action	11	12.1%		
Mortification	0	0		
Total	91	100%	27	100%

Table 4 indicates two distinct differences between how Merck and Pfizer communicated regarding their respective crises. First, Pfizer extensively used denial strategies (simple denial and shifting the blame) in 29.6% of the total communication, whereas Merck only used this strategy 3.7% of the time. Secondly, Pfizer only used those strategies to reduce the offensiveness of the crisis 39.6%, whereas Merck used this type of strategy 77.8% of the time. One other notable difference includes the fact that only Pfizer used corrective action strategy. The corrective actions resulted in Pfizer changing or eliminating advertising. These corrections came after Vioxx was pulled off the market. Perhaps Pfizer's more accommodative stance was a reaction to seeing Merck pull Vioxx off the market following its use of defensive strategies.

RQ3 looks at the stock price of Pfizer during the Celebrex crisis, examining the change in price immediately after any corporate communication. In their 1991 study, Marcus and Goodman found that for crises classified as accidents, defensive communications had a positive effect on shareholder value, as measured by the closing stock price on the day the crisis was disclosed in the press, using a model that tests for excess returns. Alternatively, accommodative communications had a positive effect for scandals. They showed an inconclusive effect for product safety and health crises. Results of stock price changes immediately after any corporate communications are shown in Table 6.

TABLE 6
STOCK PRICE CHANGES - PFIZER

Date	Stock price day before	Stock price day of	Change	Percent change	Accomodative?	Defensive?
10/01/04	30.6	30.97	0.37	1.21%		X
10/4/04	30.97	31.3	0.33	1.07%		X
10/16/04	28.5	29	0.5	1.75%		X
10/19/04	29	29	0	0.00%		X
11/10/04	27.99	27.47	-0.52	-1.86%		X
11/19/04	27.77	27.23	-0.54	-1.94%		X
12/01/04	27.77	28.23	0.46	1.66%		X
12/07/04	27.21	27.2	-0.01	-0.04%		X
12/18/04	25.75	24.29	-1.46	-5.67%		X
12/19/04	25.75	24.29	-1.46	-5.67%		X
12/20/04	25.75	24.29	-1.46	-5.67%	X	X
12/21/04	24.29	24.97	0.68	2.80%	X	X
12/24/04	26.07	26.5	0.43	1.65%	X	X
1/13/05	26.03	25.33	-0.7	-2.69%	X	
1/21/05	24.98	24.48	-0.5	-2.00%	X	
1/25/05	24.26	24.59	0.33	1.36%		X
2/01/05	24.16	23.86	-0.3	-1.24%		X
2/02/05	23.86	24.07	0.21	0.88%		X
2/05/05	24.23	24.91	0.68	2.81%		X
2/07/05	24.23	24.91	0.68	2.81%		X
2/12/05	25.15	25.48	0.33	1.31%		X
2/19/05	26.8	26.59	-0.21	-0.78%	X	X
2/20/05	26.8	26.59	-0.21	-0.78%		X
3/08/05	27.18	26.76	-0.42	-1.55%		X
4/08/05	26.9	26.6	-0.3	-1.12%	X	X
5/10/05	27.97	27.66	-0.31	-1.11%		X
8/02/05	26.64	26.94	0.3	1.13%	X	X
12/14/05	22.31	22.85	0.54	2.42%		X
2/28/06	26.6	26.19	-0.41	-1.54%		X
5/03/06	25.18	25.17	-0.01	-0.04%		X
8/31/06	27.73	27.56	-0.17	-0.61%		X
11/30/06	27.07	27.49	0.42	1.55%		X

Historical stock prices from daily finance.
http://www.dailyfinance.com/quote/NYSE/pfizer/PFE/historical-prices?source=itxwebtxt0000011

Some of the dates listed in table 6 occurred on the weekend, resulting in two consecutive days having the same prices. Some dates listed had multiple communications, with multiple defensive or accommodative strategies used, therefore the column summation in table 6 do not tie to table 7. Table 7

tallies the number of times positive or negative stock price changes occurred with each type of communication strategy.

TABLE 7

	Accommodating Communications	Defensive Communications
Positive stock price change	4	30
Negative stock price change	7	47
No change in stock price		3
Totals	11	80

Accommodating strategies resulted in a positive stock price change 36% of the time, and resulted in negative stock price changes 64% of the time. Defensive strategies resulted in positive price changes 37.5% of the time, and in negative price changes 59% of the time. Stock price changes after accommodating strategies were similar to price changes after defensive communications. Of the positive price changes, 11.7% occurred after accommodating communications, while the remaining 88.2% occurred after defensive communications. Of the negative price changes, 13% occurred after accommodating communications, while 87% occurred after defensive communications. The stock price of Pfizer seemed to react to an accommodating communication in a similar direction and at a similar rate as to defensive strategies. The data for this current study supports Marcus and Goodman's (1991) results for product safety and health crisis.

CONCLUSION

The current study examined stock price reaction to corporate communications following crisis. The authors use critical analysis to map Pfizer's communications into frameworks by Benoit (1995) and Marcus and Goodman (1991). Pfizer used "denial", "evasion of responsibility", "reducing the offensiveness of the act", and "corrective action" strategies, as per Benoit's framework. Unlike Merck, who used only defensive strategies, Pfizer used both defensive and accommodative strategies, as per Marcus and Goodman. We found that accommodating strategies resulted in positive stock price change 36% of the time, while defensive strategies resulted in positive stock price change 37.5% of the time. The stock market reacted similarly to accommodating and defensive strategies, supporting Marcus and Goodman's findings.

Two studies looking at the effectiveness of crisis communications of pharmaceutical companies during times of drug safety or recall have resulted in similar findings. Both lend support for Marcus and Goodman's (1991) framework. The communications from Merck and Pfizer resulted in mixed stock price reactions, as expected by Marcus and Goodman for a product safety and recall crisis. Results which fulfill our expectations of inconclusivity are perhaps less robust than results from a study with expectations of stock price movements one direction over the other direction. This leads to the opportunity to examine stock price reactions to communications surrounding scandals or accidents. Marcus and Goodman found positive stock reactions when accidents were responded to with defensive strategies or when scandals were responded to with accommodative strategies. Future studies could look at accidents or scandals and the corporate communications that surround them.

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