Situational crisis communication and interactivity: Usage and effectiveness of Facebook for crisis management by Fortune 500 companies

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ABSTRACT

Through the lens of situational crisis communication theory (SCCT) and interactivity, this study examined the Facebook usage of Fortune 500 companies and the effectiveness with which these companies employed the platform for crisis management. Findings indicated that 'justification' and 'full apology' were the most commonly used crisis response strategies. Results also show instances where companies inappropriately match their responses to crisis situations. An analysis of 7080 messages further revealed a significant relationship between an organization's involvement in two-way communication and the overall positivity of audience tone in reaction to the organization in question and its handling of crises. Suggestions are provided for organizations intending to employ social media for crisis communication.

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1. Introduction

An organization's survival in a crisis depends greatly on its speed of response (Benoit, 1997). As such, Web 2.0 technologies and social media serve as vital platforms for organizations to not only respond in the fastest and most direct manner, but also to disseminate information to audiences globally (González-Herrero & Smith, 2008; Macleod, 2000; Phillips, 2001; Taylor & Perry, 2005). It is crucial for companies to have this ability, because stakeholders and journalists require real-time crisis information and could potentially refer to sources that may spread false or inaccurate information if actual information from the organization is unavailable (Fjeld & Molesworth, 2006; Middleberg, 2001). As Middleberg and Ross (2001) found, 60% of surveyed US journalists would consider reporting an Internet rumor if it is confirmed by an independent source. It is therefore not surprising that companies and organizations are jumping on the bandwagon to quickly incorporate social media into their crisis communication plans (Barnes & Mattson, 2011).

However, mere adoption and usage of these tools are unlikely to yield desired results, unless organizations are dedicated to using the tools effectively for crisis management. Unfortunately,

despite the strategic importance of social media, only a few studies have examined it as a tool for crisis communication (e.g., Briones, Kuch, Liu, & Jin, 2011; Schultz, Utz, & Goritz, 2011; Smith, 2010; Sweetser & Metzgar, 2007). In particular, little is known about the manner and extent to which major companies have used social media effectively for crisis communication. To address this gap in research, the present study finds it timely to: (1) investigate how many Fortune 500 companies that have experienced crisis used social media to communicate with their audiences during crisis time, (2) review crisis-related social media pages to identify the crisis response strategies employed by each company, (3) evaluate the level of interactivity of the communication between the companies and user audiences, and (4) review audience responses to organizational crisis response messages.

The findings from this study are significant for various reasons. First, they highlight the extent to which leading organizations use social media as a platform for crisis communication, and provide insights to improve the effectiveness of crisis management efforts. Second, the fact that Fortune 500 companies are leaders in the utilization of newer technologies (Li, McLeod, & Rogers, 2001) conveys a broader research impact. The results, for instance, may be extrapolated to inform future strategies in social media for crisis management efforts conducted by other companies. Finally, understanding effective and proper usage of these communication channels during crises will not only provide insights for practitioners, managers, stakeholders, and scholars who are concerned with

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crisis management, but may also provide insights for effective organizational image and reputation management.

2. Crisis management and social media

Crisis is "the perception of an unpredictable event that threatens important expectancies of stakeholders and can seriously impact an organization's performance and generate negative outcomes" (Coombs, 2007, pp. 2–3). To successfully manage a crisis, an organization should communicate strategically and effectively with its stakeholders by relaying information in an efficient and timely manner. This is where communication platforms such as social media become important strategically. On top of radically increasing the speed of communication between organizations and audiences (Kaplan & Haenlein, 2010), social media outlets facilitate real-time dialogue between these groups (Jankowski & Hanssen, 1996; Shuen, 2008). The latter, a normative concept of two-way communication, proves vital in creating mutual understanding between parties during times of crises (Grunig, 1984).

2.1. Popular social media for crisis management

This study defines social media as an amalgamation of social networking sites "which allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2007, p. 211). These sites are coupled with the "architecture of participation" in Web 2.0, facilitating interactive communication and content exchange between users, who at the same time are able to switch roles between information consumers and producers (O'Reilly, 2007, p. 17). An integral feature of social media is its ability to connect audiences from across the globe. More importantly, studies revealed that to some extent users perceive information from these platforms to be more authentic and credible than traditional media forms (Seltzer & Mitrook, 2007). Among the multitude of social networking sites available, the most popular include Facebook, Twitter, YouTube, and Linkedin (Barnes & Mattson, 2011). In particular, this study examines organizations' use of Facebook as a crisis management channel.

2.1.1. Facebook as a crisis communication platform

Facebook stands as the current leader in social media with more than 500 million active users contributing up to 41% of the total daily traffic on social networking platforms (Facebook Statistics, 2011). Due to the resiliency of the technologies that enable Facebook, such as real-time messaging and message linking to networks of users numbering in the hundreds, thousands, and possibly millions, it is an integral communication platform for organizations, particularly in crisis situations.

When utilized effectively, Facebook can allow organizations to avoid potential crises situations. For example, Nikon's statement that implied a photographer is only as good as his or her equipment resulted in more than 3000 hostile comments within a 12-h period. However, an immediate apology by a company's representative on Facebook managed to quell an escalating crisis situation (Bernstein, 2011). Similarly, Southwest Airline's quick statement released on Facebook reporting no serious injuries following an incident where its aircraft skid off the runway at Denver airport in September 2010 garnered hundreds of positive reactions with people "liking" the Facebook announcement, and had also led customers to "backing up the airline and laying the blame on the Airport and the weather" (Rudawsky, 2011).

On the other hand, several case studies have shown that poor communication on Facebook can actually exacerbate crisis situations. An example of poor communication strategy came in the form of the Nestlé Corporation, which chose to censor comments and verbally attack others in response to a Facebook 'attack' initiated by the Greenpeace activist group (McCarthy, 2010). Other prominent cases of poor Facebook communication strategies include the ways in which British Petroleum (BP) handled the Deep Horizon oil spill crisis in 2010 and how Toyota dealt with its 2009 recall (e.g., Adonai, 2010). Not only did these cases result in escalated dissatisfaction by consumers on Facebook, they were also picked up and aggravated in media reports. The examples highlighted above reveal that Facebook can act as a double-edged sword for companies in times of crises. Thus, it is important for companies to gain a greater understanding of how to effectively employ Facebook for crisis communication efforts.

Only a few studies to date have explored social media from a crisis communication perspective. In one study, Sweetser and Metzgar (2007) examined the impact of blogging on relationship management during a crisis and found that blogs influenced the readers' perceptions of the level of crisis experienced by an organization. Schultz et al. (2011) tested the effects of various crisis communication strategies via different media on reputation and concluded that the medium matters more than the message. In other words, the use of different mediums, such as newspaper, blogs, or Twitter, influences individuals' perceptions of organizational reputation, secondary crisis communication, and reactions more so than the actual content of the messages being conveyed.

Although the aforementioned studies have considered the use of social media from a crisis communication perspective, none have specifically investigated or analyzed the actual usage of social media by major organizations (Fortune 500 companies) for crisis management. This study seeks to fill this gap in literature by answering the following research question:

RQ1: To what extent have Fortune 500 companies employed Facebook as a crisis communication tool?

3. Crisis response strategies and the situational crisis communication theory

An organization's crisis response strategy is represented by what the organization says and does when a crisis has occurred (Coombs, 2004). To implement effective responses, an organization typically works through the following three stages: (1) instructing information, (2) adjusting information, and (3) reputation repair. First, an organization relays information that provides stakeholders with instructions for how to physically deal with the crisis as well as information regarding how to protect themselves from the crisis. Next, the organization disseminates adjusting information aimed at helping stakeholders cope psychologically with the crisis. This goal is accomplished through the organization's expression of concern or sympathy for all those affected by the crisis. Finally, the organization is able to start crafting responses intended to manage its reputation among stakeholders (Coombs, 2007).

To effectively develop these responses, an organization should assess potential situations beforehand and attempt to predict levels of reputation threat. This action represents a primary function of crisis responsibility. To do this effectively, the first two types of information mentioned earlier should be communicated to stakeholders in the most timely, consistent, open, and honest manner possible (Huang, 2008). Considering the primary characteristics of social media highlighted earlier, the platform is thus an ideal place for organizations to communicate with and convey important information to its stakeholders.

To develop an appropriate and effective crisis response message, scholars have suggested that crisis managers: (1) form a taxonomy of crisis types, (2) form a taxonomy of crisis responses, and (3) develop a mechanism to match the selection of crisis response to the needs of an individual situation (Coombs, 2004). To achieve this, the situational crisis communication theory (SCCT) provides a useful framework that makes the connection between crisis types and organizational responses (Coombs & Holladay, 2002).

Rooted in attribution theory that explains human's constant need to seek causes and explanations for events that are particularly negative or unexpected (e.g., crisis situations) (Weiner, 1985) and premised upon assumptions that – (1) crises threaten an organization's image, and that (2) the communicative actions taken by the organization to mend its image is determined by the characteristics of different crises situations – the SCCT outlines essential factors that help crisis managers determine the most effective crisis communication strategies (CCSs) to preserve organizational assets (Coombs, 1998; Coombs, 2007). The CCSs are strategic *symbolic approaches* in organizational communication based on the rhetorical concepts of *apologia* (i.e., how individuals communicate to defend their personal character when subjected to public attacks) (Ware & Linkugel, 1973) and *account-giving* perspectives (i.e., strategies that determine appropriate responses to restore organization's impression, image, and public legitimacy) (Allen & Caillouet, 1994; Benoit, 1995).

According to SCCT, the degree of crisis responsibility an organization possesses dictates the level of accommodation necessary, which may be low, moderate, or high. As the degree of crisis responsibility increases, so too does the level of required accommodation (Coombs, 2007; Coombs & Holladay, 2007). For example, if an organization determines that it possesses a low level of responsibility, it may implement low accommodation strategies that focus minimally on the victim. These strategies may include denial, attacking the accuser, and scapegoating. Moderate accommodation strategies involve making excuses and providing justification. By contrast, high accommodation strategies, such as compensation and full apology, focus heavily on victims of the crisis. The primary goal of crisis managers is thus to correctly select the most appropriate strategies and prepare the best set of responses for different crisis situations (Cho & Gower, 2006).

The applicability of SCCT for crisis communication has since been empirically supported in a variety of crisis scenarios such as product recalls, organizational misdeeds, and accidents (Claeys, Cauberghe, & Vyncke, 2010; Jeong, 2009) as well as different organizational settings including non-profit organizations (e.g., Red Cross) (e.g., Sisco, Collins, & Zoch, 2010). The present study extends the utility of SCCT by examining the prominent crisis types faced by Fortune 500 companies, the crisis response strategies that these organizations employ most frequently via Facebook, and the degree to which the crisis types and strategies are related. In this bid, the following questions are posed:

RQ2: Which are the most common crisis types experienced and crisis response strategies employed by Fortune 500 companies engaged in crisis communication via Facebook?
RQ2-1: To what extent are the observed crisis types and response strategies related?

4. Interactivity in online crisis communication

A current shortcoming of the SCCT, particularly for crisis management in the interactive socially-networked online environment, is in accounting for the role of users during crisis situations that are beyond the control of organizations. In these cases, user voices and comments during crises can serve to "facilitate" ongoing crises (i.e., accelerates the news and impact of crises in a viral manner) and/or "trigger" crises (i.e., compounding the seriousness of ongoing crises with new information or associating them to other problems) (González-Herrero & Smith, 2008, p. 145). To address this shortcoming, Kelleher's (2007, 2009) postulation of the types of interactivity relevant for online public relations practices – functional and contingency interactivity – provide a useful lens through which interactivity-enabled user involvement during crisis communication on social media can be examined.

Functional interactivity focuses on the features and capability of the medium itself to facilitate information exchange between different users as well as between users and the interface (Sundar, Kalyanaraman, & Brown, 2003). Based on this affordance, scholars have examined the potential of fostering "two-way interactions" and "dialogic loops" through the use of tools such as chat boards, email links, feedback forms, and audiovisual resources for organizations to manage conflicts, maintain relationships, and handle crisis communications (Capriotti & Morieno, 2007; Kent & Taylor, 1998; Perry, Taylor, & Doerfel, 2003; Taylor & Perry, 2005). Even though these approaches were found to promote a "personal touch" that increases the effectiveness of public relations efforts (Kent & Taylor, 1998, p. 332) and stimulates the exchange of opinions (Kent, Taylor, & White, 2003), they focus more heavily on promoting an appearance of interactivity and as such do not adequately describe whether user messages are addressed or related to one another (Sundar et al., 2003). For example, Taylor, Kent, and White (2001) found that organizations scoring higher on the 'dialogic-loop' index were less likely to respond to individual messages or engage in conversations. Fjeld and Molesworth (2006) found that practitioners refused to engage in two-way online conversations due to the impracticality of this communication mode for meeting the organization's objectives or simply due to the impossibility of responding to such large quantities of messages. In the same vein, Moore (2004) posited that fear of unmanaged messages and of encouraging diverse viewpoints in uncontrolled settings had a stifling effect on organizations attempting to respond to online comments.

The other aspect of interactivity, which this study intends to examine, is contingent interactivity. This "process" involves interactions featuring one-to-many as well as many-to-many relations and requires that participants both respond to one another's messages (Stromer-Galley, 2004) and post messages that "are contingent on the content of previous messages" (Kelleher, 2007, pp. 10–11; Rafaeli, 1988). In other words, the role of communicator and message creator "needs to be interchangeable" among participants for contingent interactivity to occur (Sundar et al., 2003, pp. 34–35). The more "intertwined and cumulative" the conversations are, the more fully interactive the process is said to be (Walther, Gay, & Hancock, 2005, p. 641). Yang, Kang, and Johnson (2010) conducted a web-based experiment from this perspective and showed that organizational efforts to welcome and engage audiences in conversations online enhance users' perceptions of closeness and engagement during crisis communication. These efforts also resulted in positive outcomes among audience members, such as favorable attitudes toward companies and supportive word-of-mouth (WOM) intentions. Kelleher (2009) attributed this "psychological closeness" experienced by individuals involved in interactive online conversations to the perception of a "conversational human voice" that arose from such interactions (p. 172). Findings from his study pointed toward a socially-distributed model of public relations, one in which the key outcomes of an organization's public relation efforts are fostered by a range of participants interacting with one another while representing support for or criticisms against the organization and its efforts (Kelleher, 2009).

Closer to the focus of this study, Smith (2010) applied the socially-distributed model of public relations to qualitatively analyze 1400 Twitter messages posted during the time of a crisis. The study found that individuals who participated in conversations with

others were primarily motivated by their desire to connect to a community of others sharing similar opinions, to promote their personal involvement with regards to the crisis, and to personalize issues (p. 331).

The findings highlighted above support the notion that interactive online communication allows individuals with little recognized stake in the organization to either fulfill or thwart an organization's public relations efforts by engaging with others in conversations regarding the crisis. The impact of interactivity on an organization's crisis communication efforts via social media could therefore not be ignored. To provide a more comprehensive examination of the usage and effectiveness of Facebook for organizational crisis management, this study will further examine the level of interactivity (i.e. contingent interactivity) displayed by the organization and social media users in the context of crisis communication by querying:

> RQ3: What is the level of contingent interactivity displayed by Fortune 500 companies engaged in crisis communication efforts via Facebook?
> RQ4: What is the level of contingent interactivity displayed by individuals consuming and interacting with crisis communication information via Facebook?
> RQ5: What is the overall tone (positive or negative) of audience responses to the organization's crisis communication messages delivered via Facebook?

5. Method

To address the research questions, a content analysis of all Fortune 500 companies' Facebook pages was conducted. All message postings on the Facebook message 'walls' during the time period spanning January 1st 2011 to September 1st 2011 were reviewed. To delineate Facebook usage for the purpose of crisis communication among the companies assessed, only text messages were analyzed. Content such as pictures, videos, and hyperlinks were excluded from analysis. In this way, the structure and strategies of crisis management features identified in this study can serve as benchmarks for organizational development of crisis communication strategies via social media sites. Rather than sampling, this study included all companies recognized in the 2011 Fortune 500 list in order to attain more conclusive findings (CNN Money, 2011).

5.1. Measure

5.1.1. Existence of Facebook pages

Prior to examining the usage of the medium in response to crises, it was necessary to determine the existence of an official social media-based page for each company. To identify official company Facebook pages, researchers entered the name of each company in the search section of the Facebook home page. Only main pages directly established by the companies were counted for the purposes of this study. For example, Facebook pages for companies established by customers or third party users as well as secondary pages were excluded for two important reasons. First, as this study is intended to examine how companies employ social media for crisis management, pages established by customers or third party users are not relevant to this study. Second, secondary pages such as sub division or branch pages were excluded, because a company is likely to send the same or similar message to its publics on these pages, so reviewing secondary pages would likely include repetitive messages. Finally, each company's main Facebook page that had been used in a crisis management capacity was reviewed.

5.1.2. Company's industry type

The ten industry types were derived from *Standard and Poors'* global industry sector categorization and included consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecommunication services, and utilities.

5.1.3. Existence of crisis

Crisis is defined as "the perception of an unpredictable event that threatens important expectancies of stakeholders and can seriously impact an organization's performance and generate negative outcomes" (Coombs, 2007, pp. 2–3). This study considered all types of crises, including but not limited to "natural disaster," "organizational misdeed," "organizational scandal," "product recall," "workplace violence," "boycott," and "strike." Prior to identifying crisis response strategies employed via Facebook, this study first determined the existence of a company crisis and the crisis types exhibited. This coding was done by manually reviewing every post on the official Facebook wall pages for each of the Fortune 500 companies during the established timeframe. The researchers then examined all cases to identify the crisis response strategies employed by each company.

5.1.4. Crisis types

The different crises types were coded according to Mitroff's (1988) crisis clusters, which indicate families of crises that represent the level of crisis responsibility that can be attributed to each organization affected (Coombs, 2004). Ranging from low to high responsibility, the crises types are 'victims of crises', 'accidental crises', and 'intentional crises'. Table 1 provides descriptions of the various crisis responsibility categories.

5.1.5. Crisis response strategies

To identify which crisis response strategies had been employed, the researchers manually reviewed every Facebook page that had served in a crisis management capacity. When a page displayed an official company's statement or message regarding a crisis, the researchers noted the specific crisis response strategy used. This study considered the following six crisis response strategies: 'denial,' 'attack the accuser,' 'scapegoating,' 'excuse,' 'justification,' and 'full apology.' Table 2 summarizes each of these strategies.

5.1.6. Interactivity

This study measured the level of contingent activity displayed by Fortune 500 companies and Facebook users involved in crisis communication. Contingent activity is operationalized as any "expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges (or messages) referred to earlier transmissions (messages)" (Rafaeli, 1988, p. 111; Sundar et al., 2003). The unit of analysis for this measurement is any single message posted by the organization or individual, and the researchers coded for whether or not the message examined made reference to any previous messages.

5.1.7. Audience response tone

To examine overall audience reactions to the organizations' crisis response messages delivered via social media, specifically Facebook, this study analyzed all audience comments in reaction to the organizational crisis messages. Researchers analyzed a total of 7080 audience messages on Facebook walls. After reviewing these audience messages, the researchers noted the overall tone of the audience responses ranging from negative to positive. Positive messages represent messages that expressed support for the organization and/or its actions. Negative messages were those in which audiences expressed anger, unhappiness, blame, skepticism, or

Table 1
Crisis types.

Types	Description
Victims of crises	Crises that are driven by external forces which are beyond organizational control or intent (e.g. natural disasters, rumors, product tampering)
Accidental crises	Organization seen as not meaning for the crisis to happen (lack of volition) and/or could do little to prevent it (e.g. confrontations, technological failures)
Intentional crises	Crises that can be highly attributed to organization's action or inaction (e.g. organizational misdeeds, deceptions)

Table 2
Crisis response strategies (Coombs, 2007).

Level of accommodation	Explanation of strategy
Low	
Denial	Management claims there is no crisis
Attack the accuser	Management confronts the person or group that is claiming something is wrong
Scapegoating	Management tries to shift the blame to some person or group outside of the organization (e.g. The organization blames a supplier for the crisis)
Moderate	
Excuse	Management tries to minimize the organization's responsibility for the crisis by claiming they did not intend for the crisis to happen and/or could not control the events leading up to the crisis
Justification	Managers attempt to minimize perceptions of damage resulting from the crisis and suggest that the crisis is not as bad as it may seem
High	
Full apology	Management publicly admits its responsibility and asks victims and others for forgiveness

made arguments against the organization and/or the crisis communication message provided. Messages that did not fall into either the positive or negative categories, such as audiences commenting that they were not affected by the crisis, were coded as neutral. Each individual message was coded according to the different tones, and finally researchers determined the overall tone for a particular crisis based on the responses of the majority.

5.2. Inter-coder reliability

Three trained graduate students reviewed and coded all the posts in order to analyze the contents relevant to this study. Approximately five percent of the total sample was randomly selected to evaluate inter-coder reliability. Using Scott's pi (Scott, 1955), the coder reliability calculated for each coding category was above the acceptable level of .80 (Riffe, Lacy, & Fico, 1998) with the following reliability measurements: the presence of Facebook .90, crisis presence .89, crisis types .89, crisis response type .81, audience response .83 and interactivity .85.

6. Results

6.1. Research question 1

This question sought to address the extent to which Fortune 500 companies have employed social media, specifically Facebook, for crisis management, and also to determine the sectors in which these companies operate. Of the 500 companies examined, a majority ($n = 309$, 61.8%) possessed an official company Facebook page. Among the 309 companies with Facebook pages, only 28 (9.4%) communicated with stakeholders regarding a crisis during the time period examined. Of those companies, approximately half ($n = 13$, 46.4%) faced multiple crises situations and conveyed their crisis communication messages via Facebook. All together, a total of 48 crises related company messages were identified and reviewed. According to the different sector types, the number of companies with official Facebook pages, frequency of Facebook usage for crisis communication, and their proportion based on the total number of crisis cases identified are respectively shown as follow: consumer discretionary ($n = 66$, $n = 11$, 22.9%), consumer staples ($n = 54$, $n = 9$, 18.8%), energy ($n = 20$, $n = 7$, 14.6%), financials ($n = 38$, $n = 4$, 8.3%), health care ($n = 22$, $n = 2$, 4.2%), industrials ($n = 39$, $n = 2$, 4.2%), information technology ($n = 31$, $n = 3$, 6.2%), materials ($n = 19$, $n = 0$), telecommunication services ($n = 7$, $n = 6$, 12.5%), and utilities ($n = 13$, $n = 4$, 8.3%).

6.2. Research questions 2 and 2-1

Research questions 2 and 2-1 were aimed at examining which crisis types and crisis response strategies were used most commonly by Fortune 500 companies engaged in crisis communication via Facebook as well as the extent to which the crisis types and strategies observed were related.

As shown in Table 3, of the 48 crisis cases, 'accidental crisis' was the most prevalent crisis type observed. A large portion ($n = 18$, 72%) of accidental crisis cases involved natural disasters such as tornadoes and floods that had widely impacted business operations, particularly in messages conveyed by companies in the energy and industrials sector (e.g. power companies). For example, Progress Energy Carolina employed its Facebook page for crisis communication when close to 300,000 of its customers experienced power outages in the weeks during and after Hurricane Irene struck the area in August 2011. Providing 'justification' was found to be the most popular response type conveyed by these companies ($n = 10$, 40%).

The results also demonstrate that the majority of the crisis-related messages posted by companies ($n = 32$, 66.7%) do not match the optimal response strategies to crisis types as proposed by the SCCT. Although some companies ($n = 16$, 33.3%) were seen to have applied appropriate response strategies such as 'denial' and 'justification' during 'victim' and 'accidental' crisis situations, a number of others had responded inappropriately by offering 'justification' and 'full apology' messages when they were actually involved in low responsibility 'victim' situations ($n = 17$, 81.0%). In the worst cases observed, researchers found companies that provided 'excuses' in 'intentional' crisis situations ($n = 1$) or that were involved in 'scapegoating' during 'accidental crises' ($n = 5$). An example of the latter was an airline that announced "multiple delays/cancellations due to MIA's (Miami International Airport) fueling issues." This comment yielded negative audience retorts such as "It sounds

Table 3
Cross-tabulation of crisis types and crisis response strategies.

	Crisis response strategies						
	Denial	Attack the accuser	Scapegoat	Excuse	Justification	Full apology	Total
Victim crisis type	4	0	0	3	10	4	21
Accidental crisis type	0	1	5	1	10	8	25
Intentional crisis type	0	0	0	1	0	1	2
Total	4	1	5	5	20	13	48

fishy that those tanks lit up...I have worked there for years" and "I bet [name of airline] is responsible, but they blame it on someone else as usual."

6.3. Research questions 3 and 4

Research questions 3 and 4 examined the level of contingent interactivity (i.e. the content of posted messages related to earlier message posted by other participants) demonstrated by the organizations and their audiences. Results showed that the majority of messages displayed contingent interactivity among participants during crisis communication (n = 4739, 66.9%). Of these messages, a mere 3.2% (n = 150) came from organizations, while 96.8% of the messages (n = 4589) displayed contingent interactivity on the part of the public.

Of the 28 total companies that had communicated about a crisis, only 32% (n = 9) posted messages in response to messages posted by individuals. Overall, these results indicate that the majority of messages posted on an organization's Facebook wall during crisis communication consist of individual responses and efforts to build upon the messages of others. Unfortunately, the companies themselves did little to participate in two-way interaction with their audiences.

6.4. Research question 5

The final research question examined the overall tone of audience responses to organizations' official crisis communication messages. In response to the companies' crisis messages on Facebook, most audiences viewed the organizations and their crisis messages either negatively or neutrally (n = 37, 77.1) while only 22.9% of users responded positively (n = 17). The researchers identified a noteworthy finding when checking the relationship between companies that had displayed contingent interactivity and the overall tone of audience responses. Chi square analysis revealed that the tone of audience responses was more positive for companies that had replied to users' messages [$\chi^2(1)$ = 4.13, $p < .05$]

7. Discussion and conclusion

Even though scholarship has emphasized the strategic importance of social media as a crisis communication tool, organizational crisis response strategies employed via social media have yet been carefully examined. This study examined leading organizations' usage of Facebook for crisis communication as well as the effectiveness of their crisis management messages, and identified 48 cases of crisis communication carried out via Facebook by a small percentage of Fortune 500 companies (n = 28, 5.6%). This finding is surprising considering the importance and popularity of social media coupled with the fact that Fortune 500 companies are regarded as leaders of innovative communication technologies (Li et al., 2001; McCorkindale, 2010). This result could simply imply that only a small portion of the companies examined experienced crisis situations during the timeframe investigated, but it also suggests that most Fortune 500 companies are not taking advantage of this strategic social media platform for crisis communication.

Nonetheless, the cases observed provide a meaningful analysis of the effectiveness of crisis communication carried out by Fortune 500 companies on Facebook. Furthermore, the fact that a total of 7080 individual posts were retrieved from only 48 crisis situations suggests that the interactive potential of social media platforms should garner greater attention and be harnessed to a greater extent for online crisis management efforts.

Among the companies that employed Facebook for crisis communication, the most commonly used crisis response strategies were 'justification' and 'full apology,' followed by 'excuse', 'scapegoating,' and 'denial'. This finding reflects the suggestion in the crisis management scholarship that organizations faced with crises should use less defensive and more accommodative crisis response strategies (Coombs & Holladay, 1996; Coombs & Holladay, 2002). Moreover, accepting responsibility by issuing an apology tends to produce more positive reactions from audiences as well as minimizes damage to an organization's reputation (Bradford & Garrett, 1995). It is therefore not surprising that the crisis response strategies found most commonly used by Fortune 500 companies included providing explanations and justifications as well as apologizing, which all represent more accommodative forms of response strategy (Coombs & Holladay, 1996).

Upon closer examination and efforts in matching the crisis response strategies to the crisis types, this study's researchers found that roughly more than half of companies that used Facebook for crisis communication had applied inappropriate responses to the crises they faced (n = 17, 60.7%). For example, 'full apology' type responses were applied in low- and mid-level responsibility crisis situations – victim and accidental crises. As posited by the SCCT, these types of crises represent low reputational threat to an organization. As such, applying response strategies that provide the impression of greater organizational responsibility may not be the most effective manner of balancing crisis management with reputational management (Coombs, 2007; Coombs & Holladay, 2001). In addition, researchers also observed companies employing inappropriate crisis communication in the form of 'excuses' (10.4%) and 'scapegoating' (10.4%). Not only do these responses tend to convey a lack of sympathy to those affected by the crisis, but in the long run, this strategy could also jeopardize the organization's image and reputation (Coombs & Holladay, 2001).

This study had also examined the overall tone of audience responses to the organizations' messages regarding crises on Facebook. A majority of audiences responded either negatively or neutrally to organizational messages on Facebook. This result could be linked to the earlier finding that organizations experiencing crises might not have responded with appropriate messages. To further complicate matters, interactivity in social media means that messages can be forwarded and 'shared' to countless people with the simple click of a mouse. A boomerang effect that may exponentially affect an organization's image and reputation could therefore be easily created, thus making social media for crisis communication a double-edged sword. Social media would be extremely beneficial if used effectively. However, when used ineffectively (i.e., sending out an inappropriate message during crises), it could also inflict greater damage on the company than traditional media forms.

Along the lines of the argument above, this study also provide empirical evidence as to why organizations should not overlook the interactive potential of online communication technologies. As revealed by the findings, Fortune 500 companies overall demonstrated poor efforts in engaging the public in two-way crisis communication via Facebook (e.g., only 9 out of 28 companies responded to messages posted by users). This is unfortunate because companies that replied to public users' messages were found to achieve a significantly more positive audience tone in responses to the crises addressed. These differences in audience responses could be explained in several ways. As determined in previous studies, companies engaged in only one-way online communication are perceived to be impersonal and therefore fail to demonstrate commitment and care in times of crisis (Regester & Larkin, 2003). On the other hand, companies that actively engaged audiences can provide a *personal touch* in their crisis communication efforts (Kent & Taylor, 1998). These organizational-public dialogues have the ability to "turn around negative opinions expressed about the company" (González-Herrero & Smith, 2008, p. 150) as well as improve the publics' acceptance of the company's account of the crisis, their attitudes towards the company, and their intentions to spread more supportive word-of-mouth in response to the crisis (Yang et al., 2010).

The significance of the contingent interactive process of crisis communication in social media (i.e. replying and creating messages in relation to prior messages) should also be examined beyond the organizational level to include the messages and conversations between different users. As found in this study, the level of contingent interaction between different individuals constituted the majority of messages posted regarding the crises. This echoed those presented by Smith (2010) on organizational use of Twitter for crisis communication. The study found that retweets (i.e., re-publishing something that another Twitter user has written, and spreading the word among Twitter followers) were more dominant than stand-alone messages, and that through retweeting, users not only built upon others' commentary and opinions with regards to the crisis, but were also more concerned with representing how the crisis would affect a community than with communicating their personal insights on the issue (p. 332). Therefore, as similarly emphasized by Kelleher (2009), the impact of messages posted by audiences with seemingly no stake in the organization should not be disregarded in social media communication. Future research and crisis communication efforts in social networking platforms should seek to further address and understand the role of these non-stakeholder audiences.

In conclusion, although the utilization of Facebook by Fortune 500 companies could, and still needed to be improved, several lessons can be extrapolated from this study for organizations looking to employ social media for crisis management. First and foremost, organizations should correctly identify and assess the type of crisis they face and their level of responsibility in that crisis. Subsequently, and more importantly, they should develop and apply the most appropriate response strategies for that particular crisis. Lastly, organizations should always bear in mind the human behavior and communicatory aspects of social networking technologies (i.e., emergent and contingent discussions). As the findings indicate, organizations that reply to public messages may achieve a more positive audience assessment of their crisis communication efforts and their effectiveness in handling crises (Bortree & Seltzer, 2009).

8. Limitations and future research directions

Like any research, this study suffers from several limitations, which can be used to guide and generate future research. First, this study analyzed only one social media site, Facebook, and had not measured the level of organizational prior-involvement or activeness on the platform. It could be possible that the companies who had utilized the platform for crisis communication were already more active on the platforms (e.g., frequency of updates, number of "followers" or "Likers, etc.) than those which were not. Future studies could extend investigation to other popular forms of social media, and examine how organizational involvement and activeness on these platforms can be associated with the effectiveness of their crisis communication efforts. Second, the study had content analyzed user conversations and level of contingent interactivity on a social media platform through multiple trained coders. Future studies should consider utilizing more in-depth content analysis methods such as learning analytics and semantic network analysis to obtain better representation of the inter-relationships between different conversational actors, the unobserved interactions between them, and the characteristic of textual conversations (e.g., emotions, slang) among users in interactive online environments (see Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014; He, Cees, Kosinski, Stillwell, & Veldkamp, 2014). Third, this study did not evaluate whether the crisis response strategies employed via social media could help to minimize the negative effects of a crisis from an audience perspective. It would be beneficial to evaluate the effects of crisis responses on publics' supportive attitudes and behaviors, their perceptions of their relationships with the organization, their opinions of organizational reputation, and their perceptions of an organization's state of crisis. Future research should therefore carefully consider the effectiveness of organizations' crisis response strategies via social media in the various ways mentioned.

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