

**TAPPING THE UNTAPPED POTENTIAL OF BIG DATA TO ASSESS THE
TYPE OF ORGANIZATION-STAKEHOLDER RELATIONSHIP ON
SOCIAL MEDIA**

by

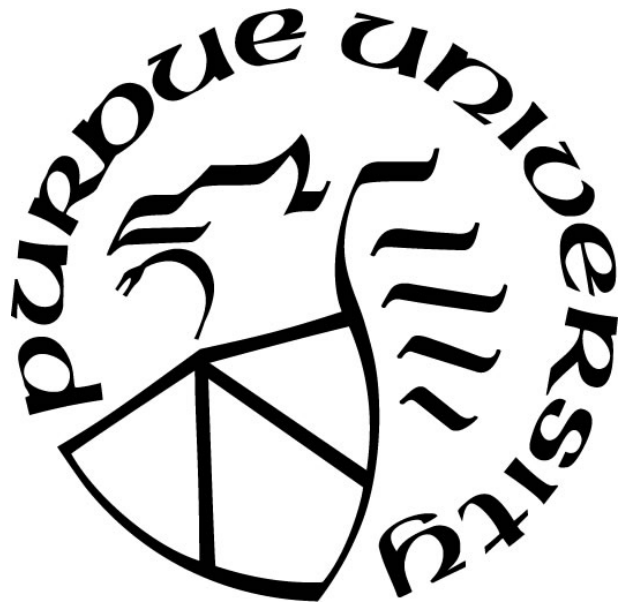
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Dedicated to Shawna Knighton, the amazing companion, friend, and wife without whom I never would have finished. Thank you, Shawna. This dissertation is for you.

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ABSTRACT

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Title: Tapping the Untapped Potential of Big Data to Assess the Type of Organization-Stakeholder Relationship on Social Media

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Social media is impacting the practice of public relations in many different ways, but the focus of this dissertation is on the power of big data from social media to identify and assess the relationship that stakeholders have with the organization. Social media analytics have tended to measure reactions to messages, rather than the strength of the relationship, even though public relations is responsible for building strong relationships with the organization's stakeholders. Yet, social media provides insight into the conversations that stakeholders have with other stakeholders about the organization and thus can reveal insight into the quality of the relationship they have with the organization.

This dissertation takes a networked approach to understand the strength of the relationship that the organization has with its stakeholders, meaning it acknowledges that the relationships two entities have with each other are influenced by the relationships those entities have with others in common. In this case, the relationship that a stakeholder has with the organization is influenced by the relationship the stakeholder has with other stakeholders. Thus, one way to study the relationship that a stakeholder has with the organization is to look at the conversation and the postings on social media among the various stakeholders. The ultimate aim of the dissertation is to show how the relationship can be assessed, so the organization can create strategies that develop mutually beneficial relationships over time.

The context for the study is based on two major events where companies deliberately gather together their stakeholders to interact in person and on social media about issues and products related to the organization's future. The first event is Adobe Creative Max, which Adobe hosts each year for creative professionals. The second context for the study is Dreamforce, which is hosted by Salesforce.com and includes so many attendees that the company has to bring in cruise ships to dock in the San Francisco Bay during the event since all the hotels in the area sell out far in advance. These two events provide a specific situation where stakeholders interact with other stakeholders outside of a crisis, which represents the majority of day-to-day public relations practice. Twitter data was collected during for each week of each conference, and all company tweets were filtered out of the data sample. A text-mining approach was then used to examine the conversations among the stakeholders at the events.

Findings indicate that the strongest relationship was developed by Salesforce.com with its stakeholders at the Dreamforce 2018 event in large part because of the CEO's keynote and the organizational commitment to social justice and sustainability. Granted, Salesforce had already worked to develop a culture among employees and customers based on the concept, "family," or "Ohana." However, the text of the conversations reveal that the focus at this conference was on societal issues presented by the CEO. In contrast, the findings from the Adobe conference suggest the organization has a transactional relationship with its stakeholders, in part because the CEO keynote focused heavily on products and technology. The implications of these findings indicate that big data from social media can be used to assess relationships, especially when social media data represents conversations and interactions among stakeholders. The findings also show the influence of CEO communications on the relationship and the vital role that public relations practitioners play in setting that CEO communications agenda.

CHAPTER 1: INTRODUCTION

Although the potential to gain insight from big data is immense, social media analytics has not yet evolved to the point where it provides public relations professionals with the critical information they need to help guide the strategy of the organization. Social media analytics offers insight into the reactions people have to messages, not indicators about the quality of the relationship that the organization has with its stakeholders, even though, “social media may be of primary value in exploring communication in a relationship” (Smith, 2012, p. 842). The basic social media metrics, such as likes, comments, and shares, represent individual reactions to content posted on social media. Followers, fans, and subscribers represent the size of an audience that the organization attracted to consume its content. As the size of the audience grows larger, the indication is that the audience is interested in receiving more content from the organization. The push with social media practice is to create content that results in positive reactions, so the audience will return and want more. Mark Zuckerberg, CEO of Facebook, told investors he wants Facebook users to come to the platform to watch “episodic content,” the kind of content that one returns again and again to consume (Wagner, 2017).

Sentiment analysis and the identification of top influencers are the newer and more sophisticated social media measures, but they too identify the emotional response to a message and the key individuals needed to disseminate a message. Thus, they are still focused on how audiences receive, respond, and react to messages. Part of the reason that social media focuses on reactions to messages is due to the influence that marketing has upon the practice of public relations. Marketing scholars are continuing to study how businesses can use social media to target consumers better with messages and create attachments between them and their brands (VanMeter

et al., 2018). The problem is that measures about audiences and their responses to messages do not give an indication of the strength of the organization's stakeholder relationship.

Public relations is the management function that is responsible for developing and maintaining mutually beneficial relationships with the stakeholders on whom the organization's success depends (Broom et al., 2012, p. 5). When the executive team invites public relations into the strategic decision-making process of the organization, the expectation is that public relations will have knowledge about the strength of the organization's relationship with its stakeholders and how actions and messages from the organization might impact those relationships. Thus, if social media analytics do not give public relations professionals the insight into the quality of the organization-stakeholder relationship, then social media analytics are missing a crucial type of insight that could help the organization make strategic decisions.

The current approach to social media analytics with its focus on audiences and messages poses three potential risks to public relations: First, public relations may find itself operating from a reactive mindset since most of the metrics indicate reactions. The reactive mindset does not prepare for a crisis, nor does it think about how to prevent larger issues from becoming a crisis. Coombs (2014) explained, "clever crisis managers are proactive . . . by seeking crisis warning signals and taking measures designed to reduce or eliminate the possibility of the warning sign evolving into a crisis" (p. 31). Second, the value of public relations within the organization may be equated to that of advertising since some of the newer metrics, such as sentiment analysis and the identification of social media influencers, focus on message dissemination. This view of public relations constrains it to a promotional role in the marketing mix, even though public relations could collaborate with marketing, finance, HR, and other areas of the organization on other objectives. Third, the ethics of the public relations practice may come into question if its

main role is perceived to be messaging czars, rather than strategic advisors who can help the organization adjust and adapt.

Relationships

To help public relations serve as strategic advisors, social media analytics should include information that public relations professionals can use to evaluate the quality and strength of the organization-stakeholder relationship. Relationships are defined “as a system of mutual interdependence around common interest toward which resources (stakes), attitudes, and behaviors are contextualized (Smith, 2012, p. 840). A positive relationship with stakeholders has the potential for many positive outcomes, including positive attitudes toward the organization and repetitive behaviors such as purchases (Hallahan, 2006), the creation of organizational wealth (Post et al., 2002, p. 1), and the anticipation of future threats (Grunig & Hung, 2002).

A positive organization-stakeholder relationship has been categorized into two types – exchange relationship and communal relationship (Hon & Grunig, 1999). In an exchange relationship, one party is willing to give to the other party because it expects something in return. The classic example is that of a purchase or transaction, where one party gives money, and the other provides a good or service. In contrast, a communal relationship consists of both parties providing benefits to the other because they are motivated by the concern for the welfare of the other party, even if the other party does not provide something in return. Hon and Grunig (1999) argued that exchange relationships represent the essence of marketing and that it is a central concept within marketing theory. They are necessary for customers, investors, and partners (p. 21). In contrast, communal relationships provide the opportunity for people to reach broader goals beyond a transaction, and they are an important part of helping the organization become socially

responsible. Communal relationships generate higher levels of trust and reduce the likelihood of negative behaviors, such as lawsuits, strikes, bad publicity, and government regulation (p. 21).

Although these two basic types of positive relationships are easy to conceptualize and understand, they do not provide enough nuance to account for how relationships strengthen or weaken over time. They are a bit simplistic to realistically describe the different types of positive relationships organizations may develop with its stakeholders and therefore, have been revisited and modified into a broader continuum (Hung, 2005). The continuum includes negative, neutral, and positive relationship types, but this study focuses on the segment of the continuum that describes positive relationships. The positive relationships on the continuum are labeled the “win-win” zone, and they includes three relationship types. They are the exchange relationship, the covenantal relationship, and the mutual communal relationship. Hung (2005) also described the covenantal relationship type as one in which the motivations by each party are toward pleasing both oneself and the other party, all while exchanging opinions about the common point interest to achieve a common good. Specifically, covenantal relationships are the “exchange of opinions between two parties and, what is more, both are committed to a common good” (p. 416).

Assessing Stakeholder-Organization Relationships

One of the gaps in public relations scholarship is the study of the organization-stakeholder relationship from the network paradigm. Smith (2012) argued that public relations scholarship needs to move beyond studying the opinions one party has of the other. Heath (2006) cautioned against studying public relations within the narrow paradigm that “features one stakeholder public at a time, rather than a much larger and more robust dialogue among many stakeholders and stakeseekers” (p. 95). Social network science fulfills this mandate because it investigates research questions within the social network paradigm, which means it considers the influence that three or

more actors have upon each other (Wasserman & Faust, 1994). The network paradigm carries different assumptions about how relationships are formed, how influence spreads, and how communication flows. It asks with whom do stakeholders interact and seeks to account for that type of influence. Thus, this dissertation addresses a gap in public relations scholarship by exploring whether stakeholder-stakeholder communication on social media about the organization can expand understanding of the organization-stakeholder relationship.

Social network scholars have studied for many years the effects that a friend of a friend can have on a person's attitudes and opinions. For example, the theory on the diffusion of innovations (Rogers & Shoemaker, 1971) is built on the premise that information can flow from a friend to a friend to a friend. Network scholars have shown that the flow of information, attitudes, and opinions do not only flow outward, but they flow in both directions. Christakis and Fowler (2007) studied how obesity flows through social networks during a 32-year span of time. The data shows that the attitudes, opinions, and ideas about health pooled and clustered into groups. The greatest influence on the spread of obesity was not the geographic ties, meaning the friends who lived across the street or in the same neighborhood, but the social ties. These social ties are friends with whom the person most often has social interaction. Notably, these studies were conducted prior to social media. Thus, they do not provide an indication of the influence that stakeholder-stakeholder interaction on social media can have on attitudes and opinions about the organization.

Although some scholars in public relations have studied network concepts such as social capital (Dodd, 2016; Dodd et al., 2015; Sommerfeldt & Taylor, 2011) and added valuable insight to the theoretical understanding of social network concepts in public relations, these studies have not addressed some of the fundamental questions about how networks impact the definition of a public, the formation of an opinion, nor the nature of an organization-stakeholder relationship.

Traditional social network analysis involves the study of people (Wasserman & Faust, 1994); but more recently, communication scholars have begun to explore networks of words, such as in the study of how individuals cope with tragedy by posting publicly on social media using a hashtag (Smith, Smith, & Knighton, 2018). Hashtags allow individuals to join a social network through words, providing a way for multiple strangers to form a tie and participate in a discussion about the organization.

Shifting the focus to the network paradigm in public relations puts the emphasis on relationships and interaction. The affordances of big data from social media may make it possible to study actual interactions that stakeholders have with the organization and what those interactions reveal in terms of the relationship the organization has with its stakeholders. Thus, the aim of this dissertation is to understand how communication networks reveal insight into the interactions between stakeholders and how those interactions reveal the nature of the stakeholder-organization relationship.

Method and Context

To study organization-centered stakeholder interaction, this study uses the context of company-hosted technology user conferences. These are conferences where companies spend massive amounts of money inviting customers, investors, partners, media, and other influential people to hear the company's vision and to learn from each other about the company's technology. As an example, Salesforce spent \$2.8 billion in 2014 to host Dreamforce, which represented approximately half of the company's revenue from the entire fiscal year (Lev-Ram, 2015). These company-hosted conferences provide a way to set a vision for the future, preview and demo new products, and to create a community of developers outside the company who can extend the capabilities of the products with partnering organizations. The conferences are strategic because

they serve to meet multiple business objectives from different departments, including Finance, HR, Product Development, Customer Support, Marketing, and Sales. These conferences provide a specific point in time in which stakeholders engage deliberately with other stakeholders (i.e., customers, partners, investors, and employees) on social media about the organization by using a predetermined conference hashtag.

This dissertation examines the stakeholder-stakeholder interaction on Twitter at two major conferences. Since the stakeholders chose to use a predetermined conference hashtag, the data is collected using that hashtag and examined for themes arising from the interaction. The first conference analyzed is from Adobe, Inc, and the second is from Salesforce.com.

Adobe hosts a creativity conference each year called Adobe Max, which had over 15,000 attendees and took place over three days from October 15 through October 17, 2018, in Los Angeles, California. The conference used the hashtag #AdobeMax and featured Ron Howard, the famous director, writer, and actor; Questlove, the 5-time Grammy Award Winner and member of the hip-hop group The Roots; and Nicola Scott, a comic book artist who has worked on Superman, Batman, and Wonder Woman. Adobe Max provides a rich context for studying stakeholder-stakeholder interactions because the conference has a history of high attendance and because the conference attracts different types of stakeholders who interact with each other.

The second conference under study is the annual event by Salesforce called “Dreamforce.” It is an annual conference with 170,000 registered attendees from 103 countries (Weeby & Kohner, 2018). The conference used the hashtag #df18 and took place over four days from September 25 through September 28, 2018, in San Francisco, California. It included a performance by Metallica and keynote speeches by Al Gore, Will.i.am., Jeb Bush, and other famous thought leaders.

Dreamforce provides a rich context for this study with its history of high attendance representing various stakeholder types who deliberately interact on social media.

This study uses text mining and semantic network analysis, which are part of a larger body of computational research methods that combine quantitative and qualitative perspectives. Semantic network analysis differs from traditional content analysis by using algorithms that mirror the way in which the brain organizes concepts (Lambert, 2017), and it does it at a scale that would be impossible using human coders. A major benefit to text mining is how it affords researchers the ability to analyze the natural, raw conversations by the research participants, which in this case are the stakeholders, without any provoking by the researcher. In contrast to surveys or interviews in which the participants would report their experiences after the fact, this method allows the researcher to see the phenomenon unfold as it naturally occurred. It is akin to doing an ethnography where the researcher observes a group of individuals, attempting not to alter their current course of communication interaction. The difference between traditional ethnography and this computational research approach is the ability to scale, to look at a much larger data set.

Definitions and Delimitations

This research considers public relations, stakeholders, relationships, networks, and social media as key concepts in the study. According to the dominant textbook in the field, Public Relations is “the management function that establishes and maintains mutually beneficial relationships between an organization and its publics on whom its success or failure depends” (Broom et al., 2012, p. 5). Embedded in this definition are three important elements. First, public relations is a management function, implying that public relations should participate in organizational decision-making processes. Second, public relations success hinges on its ability to develop mutually beneficial relationships. Third, public relations prioritizes relationships with

those publics on whom the organization's success or failure depends, meaning it does not attempt to develop relationships with every group or constituency.

This study uses the definition of stakeholders that was originally proposed by Freeman (1984) and has since been revisited by Freeman and his colleagues (2018): "Stakeholders are groups and individuals that have a valid interest in the activities and outcomes of a firm and on whom the firm relies to achieve its objectives" (Freeman, Harrison, & Zyglidopoulos, 2018). This definition implies that stakeholder groups are connected to the organization, rather than to a message. The distinction is important in how public relations scholars distinguish stakeholders from publics (Wakefield & Knighton, 2018). In the context of this study, stakeholders are referred to broadly as all types of people who were invited to these two conferences (investors, customers, partners, and employees).

For relationships, this study uses the definition that Smith (2012) proposed: "A system of mutual interdependence around common interest toward which resources (stakes), attitudes, and behaviors are contextualized" (Smith, 2012, p. 840). Core to this definition of relationships is the idea that relationships are situated within a system of interacting parts that influence one another.

The term network, in this study, is defined as "the relationships among entities that make up the system, which we call actors or nodes" (Borgatti, 2013, p. 1). This definition carries two important assumptions relevant to this study. First, networks are entities that influence systems through interaction. Second, the focus on networks is on relationships and the pattern of those relationships. To this point, Wasserman and Faust (1994) distinguished the difference between a traditional data analysis perspective and a social network perspective:

"Social network analysis [is] based on an assumption of the importance of relationships among interacting units. The social network perspective encompasses theories, models, and applications that are expressed in terms of relational concepts or processes" (Wasserman & Faust, 1994, p. 8).

Relations defined by linkages among interacting entities are a fundamental concept of network theories. Traditional social science tends to focus on attribute data, such as attitudes, opinions, behaviors, and the traits of entities as the variables. The network perspective places an emphasis on relational data where actors and their actions are interdependent, rather than independent (p. 4). In this study, the network perspective is applied to the networks of words where the interaction among the words spoken by stakeholders provides indicators into the quality of the relationship.

Limitations

Studying stakeholder communication on social media poses some limitations. First, not all stakeholder communication occurs on social media, so this study does not include those communicative experiences that take place offline, face to face. For example, external stakeholders may discuss among themselves their opinions of the company's stock price, and they may want to keep those conversations offline because of legal requirements around public disclosure and timing in order to impact stockholders equally. However, the study does examine the deliberate communication by stakeholders to other stakeholders online because it contains only the content stakeholders intentionally post using the conference hashtag.

Second, this study does not explain stakeholder-stakeholder interaction in other contexts, such as a crisis. Instead, the study focuses on the context of stakeholder-stakeholder communication within the specific context of a company-hosted conference. Third, the results of the study may not be generalizable outside of these two conference settings because the insights may be specific to them. Fourth, this study does not examine how stakeholder-stakeholder communication changes over time throughout the course of the conference. Instead, it aggregates the entire corpus of tweets from the conference and does not segregate the themes of the

communications for each day. Fifth, this study does not dive into sentiment analysis by categorizing the levels of positive compared to negative tweets. Although the tweets are mapped to stakeholder relationship type, and although the relationship type can be characterized as a negative or positive relationship, the words are not measured by positive or negative valence. Sixth, this study does not separate stakeholder types and compare their communication online regarding the organization. For example, it does not compare how employees talk about the organization to how customers talk about the organization, nor does it compare how investors speak to how technology partners speak about the organization. The decision to examine all stakeholder interaction without separating it by type is intentional because the aim of the study is to capture the networked discussion among all types of stakeholders on social media.

Furthermore, the study offers the advantages of exploring instances in which a high level of engagement occurs between stakeholders within a concentrated period of time. Part of the intent is to show how the method of semantic network analysis can be used by both professionals and scholars. It is not to categorize the types of stakeholder-stakeholder communication in such a way that organizations can predict which type leads to organizational specific outcomes such as increased market share or higher revenues, which may be part of a traditional quantitative study. Instead, the advantage of this study is the descriptive nature of identifying themes and how those themes map to the relationship type. More studies would need to be conducted on stakeholder-stakeholder communication to build predictive models that could look at how communication changes over time.

Organization of the Dissertation

The next chapter dives deeper into the relevant literature and presents the research questions for the dissertation. Chapter 3 explains the method of text mining, the assumptions behind the method, and the reason it is being used for this study. It also describes how the data is collected and analyzed. Chapter 4 reveals the results from the Adobe data set, and Chapter 5 reveals the results from the Dreamforce data set. Chapter 6 is the discussion section of the dissertation, where the implications for theory and practice are further delineated. The ultimate aim of the dissertation is to open scholars' and practitioners' minds to the possibilities of going beyond traditional social media analytics that focus on reactions to messages to instead using big data to evaluate and assess the organization-stakeholder relationship. The hope is that using big data to understand the quality of the relationship, public relations can play a strategic role in the decision-making process of the organization.

CHAPTER 2: LITERATURE REVIEW

This chapter explores the literature on relationships, the literature on social media that is relevant to analytics, and how the social network paradigm influences the study. The literature informs the study and sets up the research questions. The intent is not to summarize all that is known about these bodies of literature, but it is instead to recognize the key contributions, contentions, and gaps in the scholarship that relate to this study. A major assumption is that the primary constituency that companies must work with long-term to survive are stakeholders. For this reason, a brief treatise on the literature about stakeholders is crucial to this chapter.

Stakeholders

The business management literature defines stakeholders as the individuals and groups that the organization relies on to achieve its outcomes (Freeman et al., 2018). Public relations scholars have encouraged the adaptation of the field from considering publics to stakeholder groups (Rawlins, 2006). Although the terms publics and stakeholders may seem similar, they are different. Dewey (1927) defined publics as those individuals who organize on their own as a group in a response to problems they perceive in society. This foundational definition of a public led to the creation of the situational theory of publics (Grunig & Hunt, 1984; Kim & Grunig, 2011). Wakefield and Knighton (2018) clarified the distinctions between audiences, publics, and stakeholders in the following ways. Audiences connect to a message and are invited by the organization to come together to consume a message some form. Publics connect to issues and organize themselves in response to problems. Stakeholders, however, differ from both audiences and publics in that they connect to the organization and exist to help the organization survive (Wakefield & Knighton, 2018). Examples of stakeholders include investors, employees,

customers, and partners. Since this study's main purpose is to explore how social media analytics may potentially help public relations professionals contribute to the building of a long-term strategy for the organization, this study will focus on the organization-stakeholder relationship instead of the organization-public relationship.

Relationships

Relationship research has become a major focus in public relations for the past 30 years since Ferguson (1984) argued that relationships would provide the best potential for theorizing in public relations, and therefore, should be the dominant concept in the field. Grunig (2015) asserted that relationships were the central concept of the Excellence Theory. Public Relations scholars have a theory on relationship management (Ledingham, 2003), and the theory describes relationship strategies, characteristics, and components. The six components of the relationship management theory in public relations are effective management types and processes; common interests and shared goals; time; mutual understanding and benefit; organizations; and publics. However, the relationship management theory tends to focus on strategies for relationships rather than on types of relationships.

An early model for organization-public relationships broke down the concept of a relationship into stages involving antecedents, strategies, and consequences (Broom et al., 1997). Research into strategies applied principles of two-way symmetrical communication as an effective vehicle for the development and maintenance of a productive relationship (Grunig & Huang, 2000). Kent and Taylor (1998) argued that better quality relationships develop when dialogue occurs, which is something deeper and more involved than two-way symmetrical communication. Dialogue involves a commitment by both parties to five core principles, which include mutuality, propinquity, empathy, risk, and commitment. Propinquity means that both parties involved in the

dialogue can be influenced. Kent and Taylor (2002) explained that for propinquity to occur, “publics are consulted in a matter that influences them, and for publics, it means that they are willing and able to articulate their demands to organizations” (p. 26). Thus, dialogue theory articulates how organizations can engage publics in a way that promotes real listening. Ultimately, however, dialogue is more about ethical communication than about achieving a strategic outcome.

Hon and Grunig (1999) developed a scale to measure the perceptions of publics on four outcomes of a successful interpersonal relationship that they argue can apply to organization-public relationships. The first outcome is control mutuality, which is the idea that in a successful relationship, the power is equally balanced. Stakeholders would feel they have power to exercise a degree of control over the organization, and the organization would feel it has power to exercise a degree of control over the stakeholders. The second outcome of a successful relationship is trust, which Hon and Grunig (1999) broke down into three dimensions of integrity, dependability, competence. The third outcome is satisfaction, which indicates the extent to which the benefits of the relationship outweigh the cost of the relationship. The fourth outcome of a successful relationship is commitment, which represents the extent to which the parties feel the relationship is valuable enough to maintain. However, Hon and Gruning (1999) added a fifth pair of relationship indicators that “defines the kinds of relationships that public relations programs attempt to achieve, in comparison with the nature of relationship outcomes produced by other fields such as marketing” (p. 20). This point about the type of relationship that public relations develops as opposed to the type of relationship that marketing develops is foundational to the premise and purpose of this study. If public relations is to contribute to the decision-making process of the organization, it must bring a distinctive and separate value to the discussion than

the value marketing brings. As a result, this study focuses on the fifth pair of indicators that represent the type of relationship public relations seeks to build and maintain.

The two types of a successful organization-public relationship are the exchange relationship and the communal relationship (Hon & Grunig, 1999). “In an exchange relationship, a party is willing to give benefits to the other because it expects to receive benefits of comparable value to the other” (p. 20). The exchange relationship is the type that marketing builds with its customers because marketing exists to drive transactions. In practice, marketing tends to be measured by the revenue it brings into the organization either through direct sales or leads generated for the sales team. This focus on leads and sales emphasizes the need for relationships that result in an exchange. In contrast, the second type of a successful organization-public relationship is the communal type. Hon and Grunig (1999) defined this type one where “both parties provide benefits to the other because they are concerned for the welfare of the other—even when they get nothing in return” (p. 21). Broader goals and objectives can be achieved through communal relationships, and greater support can be sustained over the long term from relationships where both parties are oriented toward the other.

Hung (2005) expanded the work by Hon and Grunig (1999) by exploring whether other types of relationships describe the connection stakeholders have with the organization. Hung identified that Bennett (2001) discussed covenantal relationships in interpersonal relationships and brought the covenantal relationship type into public relations. The covenantal type is similar to the relationship an educator form with a student. Both parties commit to a common good and to listen and respond, even if there may exist a power imbalance. A covenantal relationship may include the presence of a contract, such as with employees, partners, suppliers, and agencies with whom contracts are signed.

Hung (2005) noted that in addition to positive relationships, a negative and or neutral relationship type might exist between the organization and its stakeholders, so Hung (2005) developed a modified organization-stakeholder type continuum (p. 416). The continuum begins on the left with types of relationships where the concern is for one's own self-interest and moves to the right where the types of relationships are for the other's interest. The left side of the continuum lists negative relationship types. The right side of the continuum lists the "win-win" zone with exchange relationships, covenantal relationships, and mutual communal relationships. Hung (2005) argued that the three relationship types within the "win-win" zone for the organization and its stakeholders are exchange relationship, covenantal relationships, and mutual communal relationships. Recent relationship research has begun to move away from relationship types into identifying the relationship antecedents (Seltzer & Lee, 2018) even though the big data that is available to practitioners could offer valuable insights on the relationship type. This study seeks to extend theoretical understandings of relationship type into social media by examining online stakeholder-stakeholder communication.

Social Media

Scholars in public relations have researched and written extensively about the opportunity that social media provides organizations to build and maintain relationships with their stakeholders. Grunig (2009) suggested that the two-way symmetrical model of public relations provides a framework for social media use by organizations, even though the two-way symmetrical model had been criticized for being too simplistic and idealistic (Heath, 2006). The central idea to Grunig's argument is that social media allow organizations to listen, not just to speak, to stakeholders. Despite his attempts to insert the two-way model into the ongoing scholarly discussion on social media, the research moved to emphasize social media engagement. DiStaso

and McCorkindale (2014) explained, “Engagement has never been as important as it is today, as companies are communicating with and providing content to stakeholders to build and maintain relationships. Through dialogue and connecting with stakeholders, companies can build relationships (p. 2). Perhaps this is why social media engagement was “heralded as the new paradigm for public relations in the 21st century” (Johnston, 2014, p. 382).

However, Smith and Gallicano (2015) argue that social media activities, such as views, likes, and comments, may merely be social media interactivity but not necessarily engagement. The reason is that “engagement is a state of mind and emotion, a level of involvement that comprises social media activities, but is, simultaneously, distinct from them” (p. 82). Their argument implies that traditional social media metrics used in social media analytics may only indicate interactivity, not necessarily engagement. This distinction is important because the assumption is that engagement leads to relationship development (Kang, 2014), so perhaps much of the social media activity that professionals track, measure, and equate with engagement is not actually leading to the relationship outcome they expected.

Kent and Taylor (1998) argued in the early days of the internet that the new media offered an opportunity for organizations to engage in dialogue, which they positioned as an ethical approach to communication and more effective at building sustainable relationships. Later, Taylor and Kent (2014) argued that engagement is part of dialogue and that engagement helps organizations build positive relationships. This assertion implies an important sequence in social media practice: Social media activity under certain circumstances may lead to social media engagement (Smith & Gallicano, 2015). Social media engagement under certain circumstances may lead to dialogue (Taylor & Kent, 2014). Social media dialogue can result in a positive relationship. However, Watkins (2017) examined the influence of dialogic principles on Twitter

engagement and found that individuals reported being more likely to engage with content from the organization that they found useful than content that is specifically dialogic (p. 169). The original intent with the dialogic theory of public relations was to improve the ethics of the communication, not necessarily the effectiveness (Kent & Taylor, 1998; Taylor & Kent, 2014). However, the findings from Watkins (2017) that engagement on Twitter may be influenced more by other factors than dialogue per se, led to Watkins to conclude that “future studies of relationship building on social media should move beyond identifying dialogic strategies in content and two-way communication, and instead look for a more balanced approach that is specific to the social media platform (p. 170). Thus, this study focuses on how organizations are using Twitter, as opposed to many different social media platforms, in their communication efforts with stakeholders.

Organizational use of Twitter

Nearly all Fortune 500 companies use Twitter to communicate with their stakeholders. In 2016, 86 percent of Fortune 500 companies were actively using Twitter; and by 2018, 91 percent of Fortune 500 companies were actively using Twitter (Barnes et al., 2018). Among the industries represented in the Fortune 500 list, 100 percent of the companies in the gas and electric industry use Twitter, as well as 100 percent of the commercial banks and specialty retailers. The industry on the Fortune 500 list that used Twitter the least was the Motor Vehicles and Parts, but it still had 77 percent of its companies that used Twitter (Barnes et al., 2018).

Tao and Wilson (2015) conducted an empirical study of the Fortune 1,000 companies and their communication strategies on Twitter and Facebook. They evaluated three types of content-focused communication strategies that are designed specifically to cultivate relationships stakeholders have with the organization. The typology was based on work by Brown and Dacin (1997) and by Kim and Rader (2010) on Fortune 500 corporate communication. The three types

of content-focused communication strategies are (1) corporate ability focused strategy, (2) corporate social responsibility strategy, and (3) a hybrid strategy between the two. A corporate ability focused strategy emphasizes the company's products, services, and expertise. A corporate social responsibility strategy emphasizes the company's "commitment or goodwill as a reliable member of society" (Kim & Radar, 2010, p. 65). A hybrid strategy promotes products and services while conveying the company's corporate social responsibility efforts. Kim and Radar (2010) found through their empirical study of the Fortune 500 companies and their communication efforts on their corporate websites that these large organizations use the corporate ability strategy generally over the corporate social responsibility strategy. However, when they looked specifically at the top Fortune 100 companies out of the Fortune 500, they discovered the opposite was true. The Fortune 100 companies used a corporate social responsibility strategy as their primary communication strategy.

When Tao and Wilson (2015) adopted the typology by Kim and Rader (2010) to assess the content-focused strategies on social media, their analysis demonstrated that the dominant strategy used on Twitter by Fortune 500 companies was the corporate ability focused strategy and the secondary approach was the corporate social responsibility strategy. Their analysis also showed that none of the large companies used a true hybrid strategy. These results suggest that companies generally use Twitter to promote their products, services, and expertise, rather than their efforts at being a good citizen in the community or promoting sustainable practices.

However, large companies use Twitter to do more than post messages. They also use it for social listening. Twitter, more than any other social media platform, is designed for users to share information publicly. In contrast to Facebook or LinkedIn where an individual needs to accept the request to be friends or to be connected, Twitter allows users to follow one another, to mine the

tweets of others, and to add users to lists without needing to be friends or linked in some way. Few studies have explored the potential for social listening on Twitter to guide public relations strategy, but Twitter is powerful because it has the capacity to capture conversations that “connect diverse networks, actors and locations in an action space” (Segerberg & Bennett, 2011, p. 202).

Integrating Stakeholders, Relationships, Social Media, and Networks

Smith (2012) argued that the key to understanding the relationship the organization has with its stakeholders is to examine the interactions around a shared issue, and he further asserted that focusing on the organization-stakeholder, rather than the organization-public relationship gives identify to public relations that is separate and distinct from marketing and advertising. The original books on stakeholder theory held as a central idea that stakeholders are part of an interdependent, interconnected system (Freeman et al., 2018). The system can be viewed from the network perspective since networks are defined as the entities that make up a system (Borgatti, 2013). Furthermore, stakeholder theory holds that “the most useful unit of analysis for business is the stakeholder relationship and its interconnections with others, whereas the most common unit of analysis, is the economic transaction, which is ultimately summed to measure business success” (p. 13). Similarly, network analysis places its focus on relationships and the insights that are derived from a study of those relationships (Wasserman & Faust, 1994).

Public Relations scholars are beginning to apply the network perspective and network theories to public relations. The theory on the strength of weak ties (Granovetter, 1973), predicts that opportunities predominantly arise from weak tie connections, and Doerfel & Taylor (2004) extended this theory to understand public relations work in community relations. Yang and Taylor (2015) further applied the strength of weak tie theory to network building strategies of an

organization within the larger “network ecology” (p.92) by developing a model that aims to help organizations achieve strategic outcomes through the appropriate mix of strong and weak ties.

Kent, Sommerfeldt, and Saffer (2016) debate the ethical challenges of using certain network building strategies. Their argument is that organizations could violate an ethical principle in the Public Relations Society of America Code of Ethics if it used positioned itself as a bridge in a network between third parties and then used that position to block or hinder the free flow of information between the groups. Taylor and Doerfel (2005) introduced network analysis as a means of theorizing about inter-organizational relationships by studying a civil society movement through Croatia.

However, these network studies in public relations do not address social media networks among stakeholders, and they tend to focus on network building strategies rather than on how network data serves as an indicator to the quality of the relationship stakeholders have with the organization. Smith (2012) argued that the gap in relationship research had been the study of relationships themselves, as opposed to the perceptions of the relationships. This study examines relationships (rather than relationship perceptions) by using a network approach to study stakeholder communication. Specifically, this study examines stakeholder-stakeholder interaction about an organization on social media. Thus, the following research questions were generated:

RQ1: What are the themes that arise when stakeholders communicate with each other on social media about the organization?

RQ2: What insight does stakeholder-stakeholder communication on social media provide into the types of relationships the organization has with its stakeholders?

The literature review in this chapter has situated this study in relationship theory, which has exposed a gap in social media research about the relationship types that stakeholders form with the organization. Few studies have been done in public relations from the network paradigm, and this study looks at the stakeholder relationship from the network paradigm by examining the relationships based on stakeholder-stakeholder communication on social media.

CHAPTER 3: METHODS

This study aims to answer two main research questions presented in the literature review by using a context where stakeholders interact with other stakeholders on social media around a common point of interest. The context has been selected because the conferences are dedicated toward building and maintaining long-term and proactive mutually-beneficial relationships, rather than short-term reactive relationships (i.e., a crisis). Text mining and semantic network analysis is the method used in this study to discern the themes in the text-based stakeholder-stakeholder interactions on Twitter. The technique enables researchers to identify the patterns that exist in the text and the meaning derived from those patterns (Doerfel, 1998).

In contrast to traditional methods of public relations research that originate from a quantitative or qualitative paradigm, this study uses a computational approach that blends quantitative analysis with qualitative interpretation. The specific computational method used in this study is text mining, which differs from content analysis. Content Analysis uses techniques to examine the frequency of words within a single text or multiple sets of texts. In contrast, text mining uses algorithms, which are a set of written instructions in the computer software, that search through unstructured textual data to identify words, concepts, and patterns within the data (Lambert, 2017). Specific techniques in text mining include entity detection, topic modeling, text clustering, text classification, and semantic networks (Aggarwal & Zhai, 2012). These text mining techniques are based on certain assumptions. One assumption is that words which occur more frequently in the text are more important than words that occur less often, and another assumption is that words which occur close to each other have a relationship to each other (Lambert, 2017, pp. 95 – 96).

This study uses semantic network analysis because the technique simulates the neurological processes the brain uses to form connections and meaning between concepts (Quillian, 1968). Traditional social network analysis uses graphing techniques to plot people as nodes on a graph, and it then examines the relationships between those people by drawing lines between the nodes (Borgatti et al., 2013). The researcher can increase the weight of the edges between the nodes to resemble the strength of the relationship between the people. Similarly, semantic networks plot words from the text as nodes and the frequency with which the words co-occur as the thickness of the lines between the nodes (Lambert, 2017). In this way, a semantic network analysis analyzes word associations, and the word associations represent the meaning (Doerfel, 1998, p. 23). Semantic network analysis uses a quantitative approach to calculate the frequency of words that co-occur close within the text, but it uses a qualitative approach to interpret the words pairings and word clustering in a network. In this way, semantic networks provide quantitative metrics that support a qualitative exploration (Drieger, 2013).

Text mining and semantic network analysis have been used by communication scholars to study political communication, corporate crisis, and society's initial response to terrorist attacks. Eddington (2018) used text mining and semantic network analysis to analyze the tweets by supporters for Donald Trump under the hashtag #MAGA during the November 2016 presidential campaign. The findings showed that many of the same themes that can be found in communication from White Supremacist Organizations are found in the interactions on social media between Donald Trump supporters. Another study used text mining and semantic networks to explore the BP Deep Water Oil Spill crisis and the communication from BP. The researchers gathered data from 126 press releases and the text from the news media, including 1,376 news articles in the US and 2,355 articles in the UK (Schultz et al., 2012). Another study used text mining and semantic

networks to study all the titles in the *Public Relations Review* from 1975 to 2001 and the *Journal of Public Relations Research* from 1989 to 2011 (Kim et al., 2014). The researchers first analyzed the most frequently used words and then analyzed the words that co-occurred most frequently. They found that role research dominated the 1970's and 1980's in the *Public Relations Review* and the 1990's in the *Journal of Public Relations Research*. They also found that topics tied to education and ethics were most prominent in the 1990s in the *Public Relations Review*. Recently, Smith et al., (2018) used text mining and semantic network analysis to discover how individuals in the public use Twitter to communicate sympathy, hope, anger, and other emotions after a terrorist attack.

The semantic network analysis approach is a good fit for this study because the research questions aim to uncover themes from the texts of the stakeholder-stakeholder interactions when attending a conference hosted by a technology company. Semantic network analysis can examine a large amount of data and to cluster the words into groups that may reflect not only the central theme but the sub-themes at the conference, which may relate to the type of relationship the stakeholders have with the organization.

The Context

The context for this dissertation is a set of two major conferences from two different organizations. Public Relations has long been tasked by the organization to assist in the creation and execution of special events. As one scholar pointed out in the introduction to an entire textbook on special event planning, “Events are a mainstay of public relations” (Gregory, 2015, p. xiv). One may wonder why companies use public relations to create a major event for its stakeholders. Part of the reason is that the events are strategic in nature, meaning they aim to create an experience that can meet multiple business objectives with multiple stakeholder types all at the same time.

For example, the Apple Worldwide Developer Conference (WWDC) in California provides more than just an opportunity for customers to hear the latest news from about Apple's products, which they could receive through a press release or even a video posted on YouTube. For Apple, the WWDC conference creates an experience where stakeholders can physically partake of Apple's company culture. As scholars have pointed out, WWDC is akin to a religious experience featuring community, belief, sacred feelings, and rituals of which the Apple brand is the most sacred symbol of the community (Pogačnik & Črnič, 2014).

The companies that tend to host these types of events the most are technology companies, which may be because creating a culture of innovation is associated with new advancements and conference provide that opportunity to showcase advancements. Some of the major conferences each year are hosted by Apple, Google, Microsoft, Facebook, Adobe, Box.com, Oracle, and Salesforce. These larger tech companies have the budget to create a massive conference with a set of experiences that include entertainment. For example, Salesforce spent \$2.8 billion in 2014 to create Dreamforce, which represented approximately half of the company's annual revenue for that entire fiscal year (Lev-Ram, 2015).

The scope of these events can vary from company to company, but they often include similar features such as keynote speakers inside and outside the organization. For example, Michelle Obama was one of the keynote speakers at Dreamforce in 2017, and Annie Griffiths, who was one of the first women photographers to work at National Geographic and to photograph nearly 150 countries, was a keynote speaker at Adobe Creative Max in 2017. Even Apple, which mostly features its own executives, included LEGO's director of innovation Martin Sanders at its 2018 WWDC. Another common feature at these conferences is the way the tickets to the event are distributed. Rather than simply opening up registration to whoever is willing to pay the associated

fees, the company hosting the event invites specific investors, customers, partners, government leaders, and media before opening it up to others. Facebook's F8 conference for developers, for example, is known for selling out quickly, as is the Apple WWDC. The implication is that the conference context represents an intentional gathering of stakeholder types by the organization for a dedicated period of time (usually ranging from 3 to 5 days in length) with speakers from inside and outside the organization. These conferences typically center around a predetermined Twitter hashtag that users deliberately append to each of their posts, thus generating an ongoing stream of conversations among stakeholders about the conference and the organization.

This dissertation focuses on two conferences and uses them as cases to explore the research questions on the quality of the organization-stakeholder relationship. The two conferences are Dreamforce 2018, which is hosted by Salesforce, and Creative Max, which is hosted by Adobe. The purposes of each conference, an outline of their agenda, and other details will be presented in the next two chapters. This chapter's purpose is meant to describe the methodology and then to describe the procedures used to collect, analyze, and interpret the data.

Data Collection

This study involves two data sets from two different technology user conferences in 2018. The first conference is Adobe Creative Max, which took place October 15 through October 17, 2018, in Los Angeles and had approximately 14,000 attendees. The attendees at the conference tweeted using the hashtag #AdobeMax. The second conference is the Salesforce annual conference, "Dreamforce," which took place September 24 through September 29, 2018, in San Francisco and had approximately 170,000 attendees from 103 countries around the world. The Dreamforce attendees tweeted at the conference using the hashtag #df18.

Tweets were initially collected from the conference using the free Twitter Archiver tool that plugs into Google Drive and fetches new batches of tweets every 15 minutes based on the specified hashtag. However, due to the tool's use of Twitter's standard API to pull data, the number of tweets the tool could pull was significantly limited. API's are technological points of access that software companies provide to third-party tools and apps to access, retrieve, and interact with the data on their platforms. Twitter created three types of API's for its partners and users (Products Overview, 2019). The first is the Standard API, which is free and does not provide data at high volumes. The second is the Premium API, which provides more data but only for accounts specified in the contract and not for general searches on the platform nor historical data. The third is the Enterprise API, which allows for a full search of the Twitter platform and captures a more significant portion of historical tweets than the Standard API or the Premium API.

Since the purpose of this study is to explore social media analytics by looking at the texts of the tweets between stakeholders, a social media listening tool with access to the Twitter Enterprise API was identified. The tool with Enterprise API access used in this study is Nuvi by Brickfish (About Nuvi – Brickfish, 2019). The tweets from the Adobe Creative Max conference were collected using the hashtag #AdobeMax and bounded by the timeframe of Monday, September 24, 2018, at 12:01 am through Friday, September 29, 2018, at 11:59 pm. The inquiry yielded 21,067 tweets, which were downloaded from the Nuvi platform as a CSV file. The Dreamforce tweets were collected in a similar way using the hashtag #df18 and bounded by the timeframe of Friday, October 12 at 12:01 am through Friday, October 19, 2018, at 11:59 pm. The #df18 inquiry yielded 61,211 tweets, which were downloaded as a CSV file. The two files containing the tweets included information about the source of the tweets, raw text of the tweets, and the timestamps, as well as other metadata.

Data Analysis

The first step in text mining is to clean the text data to ensure it represents the context being studied (Lambert, 2017). Because the purpose of this study is to explore stakeholder-stakeholder communication on social media and not the communication from the organization to the stakeholders, the tweets from the official organization Twitter handles were removed. This process began by going to the main Adobe Twitter handle (@adobe) and identifying the official Twitter Lists the organization had created. As of December 2018, Adobe had created nine Twitter Lists, but only five specific lists identified official Adobe Twitter handles. The effort to filter all tweets in the dataset from those handles resulted in the elimination of 827 tweets from the dataset, thus reducing the Adobe dataset from 21,067 tweets to 20,240 tweets. Similarly, the tweets from Salesforce's main Twitter handle were identified and deleted. The effort yielded an elimination of 917 tweets from the dataset, thus reducing the Dreamforce data set from 61,211 to 60,294.

The next step involved cleaning the data by first removing all URL's from the tweets. TextCleanr (Jones, 2018) was used to ensure that the words in the text would represent concepts and not http wordings or other random strings of characters. With the links eliminated from the datasets, special non-ASCII characters were removed using a website that can eliminate that type of metadata from the text (Remove Diacritics, 2018). The problem with non-ASCII characters is that they show up as strange symbols within the data and can thereby change the spelling of a word, thus making it difficult for the text mining software to detect the presence of a concept.

With the links and non-ASCII characters removed from the tweets, the text data for each conference was loaded and stored in one plain text files, using NotePad on Microsoft Windows, and then uploaded into Automap (Carley, K., 2016) for further text cleaning before running the semantic network procedures. Automap is software developed at Carnegie Mellon University and

is available for free for research purposes. Some of the features of Automap include eliminating noise words, creating a custom delete list and a thesaurus, generating a concept list, and generating a list of words that co-occur most frequently. The following necessary procedures were run in Automap for both the Adobe and the Dreamforce dataset:

1. Removed extra spaces from the text. Since the words represent concepts in text mining, the removal of extra spaces allows the algorithm to more accurately detect the proximity of concepts without the confusion of the extra spacing.
2. Converted British to American spellings. This procedure ensures that the same word, spelled differently in two different countries, are counted once.
3. Fixed typos. This procedure fixes common typos in the text, so the words (concepts) are counted as the same. For example, the word *the* and the spelling *hte* is corrected to represent the same word – *the*.
4. Expanded contractions. This procedure takes common contractions and expands them to ensure the text represents each word and phrasing equally. For example, the contraction, *I'm* is expanded to *I am*, which then ensures that *I'm* and *I am* are equally represented within the text corpus.
5. Pronoun resolution: This procedure looks for instances where pronouns such as "Mark is here. He is ready" to "Mark is here. Mark is ready." The intent is to make sure that all instances of the concept "Mark" are accurately counted.
6. Removed prepositions. This procedure removes prepositions from the text to reduce the noise and clutter in identifying the most frequently occurring concepts.
7. Applied the Extensive Delete List that is available within Automap. The Automap User's Guide (Carley et al., 2006) indicates the Extensive Delete list in Automap consists of

words occurring most frequently in English such as *a, an, and, as, at, but, for, he, her, his, it, its, me, mine, my, nor, of*, and many more. Since the Extensive Delete List contains many pronouns in it, it is vital for researchers to run their pronoun resolution procedure before running the delete list.

8. Removed noise words. This procedure removed noise verbs from the text, such as “are, am, be, is, was,” and other such verbs that clutter the analysis
9. Lowercased all words. This ensures that capitalized words are not counted separately from the non-capitalized equivalent

The process, at this point, of cleaning the Adobe and Salesforce data diverged. Based on the findings in the concept lists, separate custom delete lists for each dataset (Adobe and Salesforce) were created that included words or sets of letters that appeared in high frequency but needed to be removed from the text corpus. For example, the custom delete list for the Salesforce data included Twitter handle names, which needed to be removed to protect the user privacy. Additionally, a custom thesaurus was created and run in Automap, which took words such as “Adobe Max” and combined them into one concept – *adobe_max*. After each procedure, a concept list was generated to check to see if the list of words, or concepts, were actual words rather than gobbledygook. At times, Automap would not clear out the word from the custom delete list, so the text was copied into a new plain text file and a find and replace function was used to remove it.

After the text was cleaned and preprocessed, a Semantic List Co-Occurrence function in Automap was used to generate the list of words that co-occur together. The function looks for words that co-occurred within a two-sentence window. Each pair of co-occurring words were examined by the researcher, and at times, more text cleaning and preprocessing occurred. For example, words such as *Adobe Max* and *AdobeMax* needed to be listed as one concept to be

accurately counted. To list two words as one concept, a custom thesaurus in Automap was edited, and the text was cleaned again. This process of checking the co-occurring list words and editing the thesaurus took place multiple times to ensure the list accurately counted the concepts.

Once the semantic lists were generated to satisfaction and contained the concepts from that co-occurred within the text, then the semantic lists were populated into NodeXL (Smith et al., 2012). NodeXL is a wrapper for Microsoft Excel developed by the Social Media Foundation to calculate social network metrics and to visualize the social network graph. Because semantic networks follow the same graphing properties as social networks, NodeXL can be used to calculate semantic network metrics and to visualize semantic networks. The semantic lists from the Adobe dataset and the Salesforce data set were separately loaded into NodeXL and used to generate a semantic network. In the network, the thickness of the lines between the concepts is based upon the relative frequency with which the words co-occurred in the text data. A cluster analysis was run using the Clauset-Newman-Moore algorithm developed by the Stanford Network Analysis Project and made available in NodeXL. The algorithm groups words that co-occur most frequently together, thus creating a representation of a sub-theme within the text.

This chapter has explained the context briefly for the study, which is Adobe Creative Max and Salesforce.com's Dreamforce conference. The chapter then described the methodology behind text mining and semantic network analysis, offering a justification for the reason this method is used in this dissertation. The chapter then described the specific procedures used to organize the text, clean the text, preprocess the text, and generate both concept lists and semantic lists of co-occurring words. The last section of the chapter then describes how the lists were entered into NodeXL (Smith et al., 2012) for further analysis and visualization. The results of this analysis will be discussed in the next two chapters.

CHAPTER 4: RESULTS – ADOBE CREATIVE MAX AND THE STAKEHOLDER-STAKEHOLDER SEMANTIC NETWORK

The purpose of this chapter is to describe the results of the findings from the analysis in Chapter 3 within the context of the Adobe Creative Max conference. The findings indicate the major theme arising from the stakeholder-stakeholder interactions of Twitter represent an exchange-relationship type. No evidence was found that indicates the presence of a covenantal or communal relationship type. These findings are specific to this context, and the results of the stakeholder-stakeholder interaction are influenced by the fact that stakeholders are gathered together physically in one place by their own choice to participate in a conference they know is sponsored by the organization. The results of stakeholder-stakeholder interaction could be quite different in a different context, such as in the event of stakeholder-stakeholder interaction on social media about a crisis. This study deliberately focuses on a conference because it represents the type of work that public relations professionals face on a more regular basis, that is in building mutually beneficial relationships with stakeholders (Broom et al., 2012, p. 5).

Creative Max Conference Context

Creative Max was first hosted in 2003 by Macromedia, which was a business that developed Dreamweaver. When Adobe acquired Macromedia in December of 2005 for \$3.4 billion, Adobe continued to host the creative conference and invested in making it bigger with more notable keynote speakers and performers. By 2018, Adobe Creative Max had become the largest conference for creative professionals anywhere in the world with approximately 14,000 attendees. These professionals included art directors, designers, photographers, videographers, graphic artists, and other marketing and communication talent.

Day 1 of the Adobe Creative Max 2018 conference took place on Monday, October 15, 2018, and featured product announcements by the Adobe CEO and other spokespersons. The CEO emphasized that “creativity is all about the community” (Myrold, 2018) and then spoke about the product announcements. The announcements featured updates to Adobe Creative Cloud applications, including Photoshop CC, Lightroom CC, InDesign CC, Premiere Pro CC, and Adobe XD. The company also introduced new iPad apps for Photoshop mobile and Project Gemini, which is a drawing app made for the iPad. Special surprise guest Philip Schiller, who is Apple’s Senior VP of Marketing Worldwide, appeared on stage during the Adobe-Apple announcement to show support for the product partnerships. Adobe also unveiled a new video editing app called Adobe Premiere and created it specifically for YouTube and Instagram.

On Day 2, October 16, 2018, Adobe lined up speakers with the intention of creating inspiration for creative professionals (Myrold, 2018). The first keynote was Nicola Scott, who worked as an artist on the comic books Batman and Superman. She spoke about her journey as an artist and how through perseverance she was selected to help create the content for Wonder Woman’s 75th anniversary. The second keynote was Albert Watson, a famous photographer who has mixed fashion, art, and commercial photography. He warned creative types to not just rely on technology, such as Photoshop, to fix problems after the photoshoot but instead to take the necessary time beforehand to prepare adequately for the photoshoot. The third keynote featured a panel discussion hosted by a man that is affectionally labeled by Adobe Stakeholders as the “Adobe Jesus” (Quito, 2017). His real name is Jason Levine, and his official title is “Principal Worldwide Evangelist” for Adobe Creative Cloud. As a sound engineer, Jason Levine earned his label as “Adobe Jesus” with his charisma, looks, mannerisms, and because he attracts tens of thousands of viewers to his online tutorials (Quito, 2017). Levine used his charisma on Day 2 to

interview 5-time Grammy winner and author, Questlove, and the actress-producer-writer, Lilly Singh. Following the panel discussion, Adobe featured for Ron Howard for its final keynote speaker of the day. Howard is an actor, producer, and Academy-Award winner filmmaker. He spoke of how creativity itself has value, but the great actors such as Tom Hanks, John Wayne, and Bette Davis became who they were because they outworked everyone (Myrold, 2018).

Day 3, October 17, 2018, featured general sessions but no keynotes by famous individuals. Adobe hosted a total of 300 sessions across the three days of the conference. These general sessions included both Adobe employees and creative professionals who use Adobe products but are not employed by Adobe. For example, one session featured a discussion between Adobe's chief product officer and the art directors of the movie, "Spider-Man: Into the Spider-Verse." The 14,000 attendees at Adobe Max spent the three days of the conference learning about creativity, products, technology, film, comics, perseverance, resilience, work ethic, and limitless possibilities.

Based on this context and the literature presented above, the following two research questions are explored in this study:

RQ1: What are the themes that arise when stakeholders communicate with each other on social media about the organization?

The first approach taken to identify the themes that arise in stakeholder-stakeholder communication involved generating a list of the most frequently occurring words in the text.

Table 1 shows only the top 10 most frequently occurring words, and it resembles a traditional content analysis approach, which may indicate which themes are most important based on word frequency. The results are words that represent three major themes -- the company (*adobe*), the technology (the products such as *photoshop*, *adobexd*, *app*), and the keynote speakers

(*ron_howard*). However, this traditional content analysis approach does not give insight into the type of conversations stakeholders had about the topics, nor does it indicate the relationship-type.

Table 1: Adobe Max 2018 Concept List

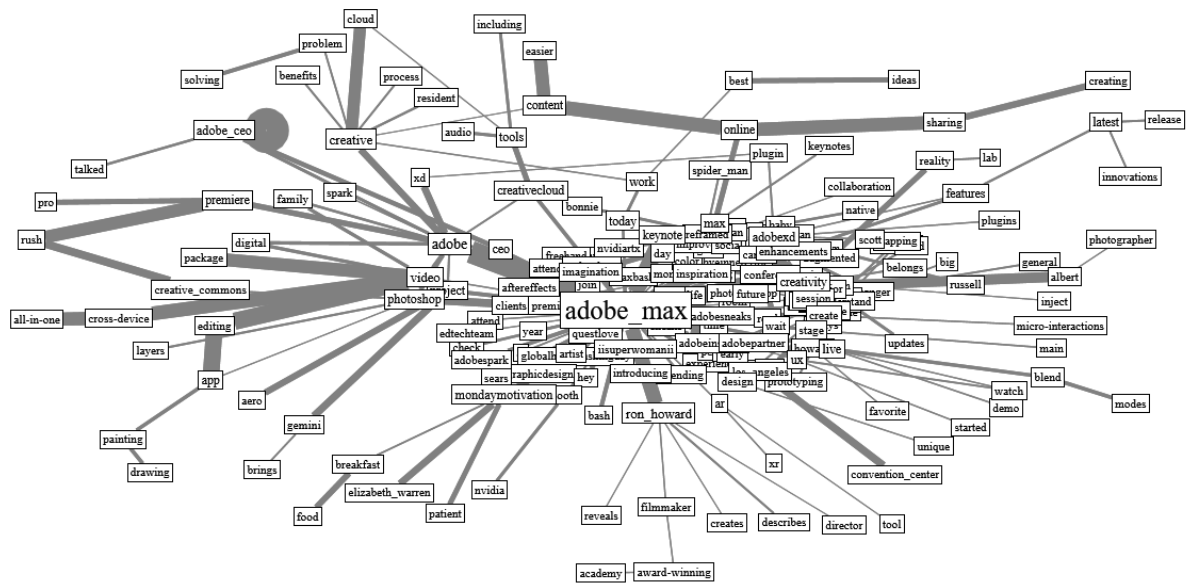
	<i>Concept</i>	<i>Frequency</i>		<i>Concept</i>	<i>Frequency</i>
1	adobe_max	23397	11	live	1089
2	adobe	4060	12	ron_howard	1031
3	creative	2049	13	today	936
4	video	1584	14	create	917
5	creativity	1389	15	keynote	865
6	adobepartner	1388	16	learn	837
7	photoshop	1380	17	work	837
8	adobexd	1374	18	time	815
9	day	1355	19	check	797
10	design	1164	20	app	748

The second approach used to identify the themes included generating a list of words that co-occurred. Table 2 shows the results of only the top 20 co-occurring word pairs, but it implies a different result than Table 1. In Table 1, the Adobe Creative Max themes appeared to focus on the company, the technology, and the keynote speakers. However, the results in Table 2 indicate the partnerships, the company, the leadership, and the potential of technology.

Table 2: Adobe Max Top 20 Co-occurring Word Pairs

<i>Column A</i>	<i>Column B</i>	<i>Frequency</i>	<i>Column A</i>	<i>Column B</i>	<i>Frequency</i>
			cross-		
1 adobe_max	adobepartner	824	11 device	all-in-one	308
2 adobe	adobe_max	780	12 content	easier	306
3 adobe_ceo	adobe_ceo	532	13 video	package	298
4 editing	video	389	14 premiere	rush	291
5 editing	app	377	15 adobexd	adobe_max	290
6 adobe_max	keynote	348	16 cloud	creative	280
7 ron_howard	adobe_max	331	17 adobe_max	creativity	257
8 content	online	321	18 adobe_max	mondaymotivation	243
9 video	cross-device	320	19 watson	albert	243
10 online	sharing	309	20 adobe_max	day	232

To further investigate the presence of themes, all words that co-occurred 50 times more in the tweets were included in the visualization of the Adobe Creative Max semantic network, as shown in Figure 1. Figure 1 shows nodes size as an indication of degree, meaning the larger the size of the node, the more the word that the node represents is connected to other words in the text. The thickness of the width is based upon the relative frequency with which the words co-occur. The graph layout is based on degree, which means that the nodes with many connections are centered in the middle of the graph, such as *adobe_max*. Nodes with fewer connections are pushed to the outer edge of the network graph.



Created with NodeXL Pro (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smrfoundation.org>)

Figure 1: Adobe Max 2018 Semantic Network

The results from Figure 1 indicate the presence of sub-themes in the network of words. For example, *creative* is connected to *cloud*, *process*, *benefits*, and *problem*, and *problem* is connected to *solving*. This understanding is not possible from exploring a concept list only, nor is it possible by looking just at the words that co-occur together, but it is only possible using a network approach. To specifically isolate the themes in the semantic network, a cluster analysis was run using the Clauset-Newman-Moore algorithm. The results of the cluster analysis are shown in Figure 2.

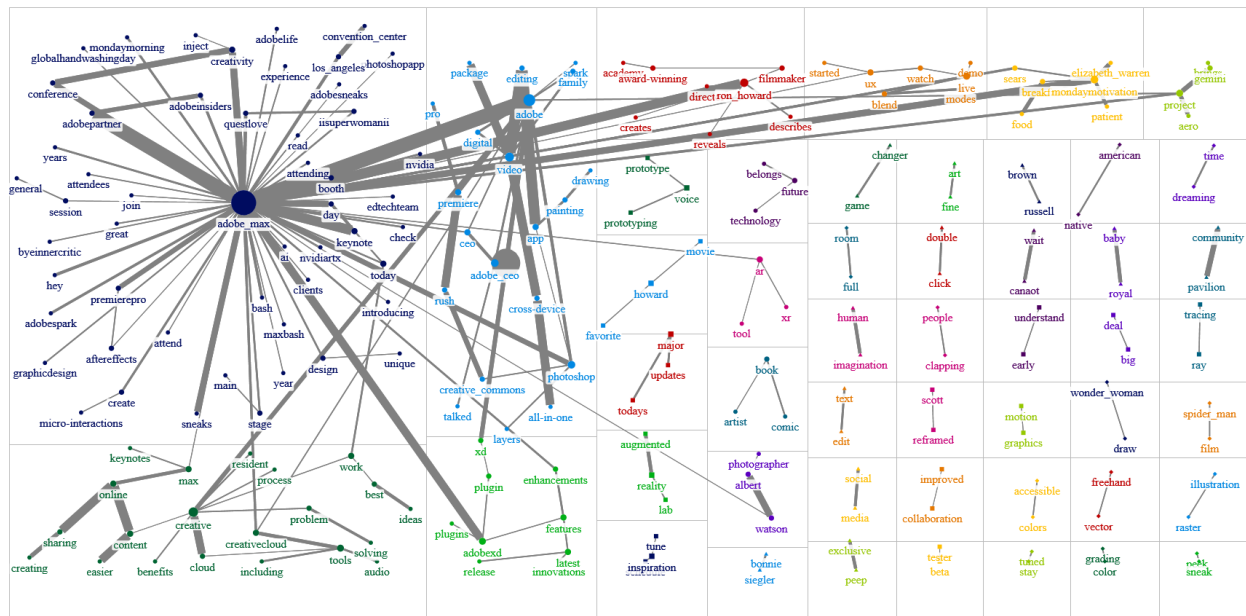


Figure 2: Adobe Max 2018 Semantic Network Clusters

Figure 2 shows the emergence of five main clusters of words. The dark blue in the top left corner represents Cluster 1, which is the most significant cluster with 52 words. Moving left to right, Cluster 2 is the light blue cluster with 21 words, the most prominent one being *adobe_ceo*. Cluster 3 is on the bottom left corner in dark green and as Cluster 2 contains 21 words. Cluster 4 is to the right of Cluster 3 in the light green and contains nine words. Cluster 5 contains eight words and is visualized in red at the top, middle of the graph. These top five clusters contain the main themes at the conference, and Table 3 lists all the words in each cluster, and Table 4 lists examples of tweets from each cluster.

Table 3: Adobe Max Words by Cluster

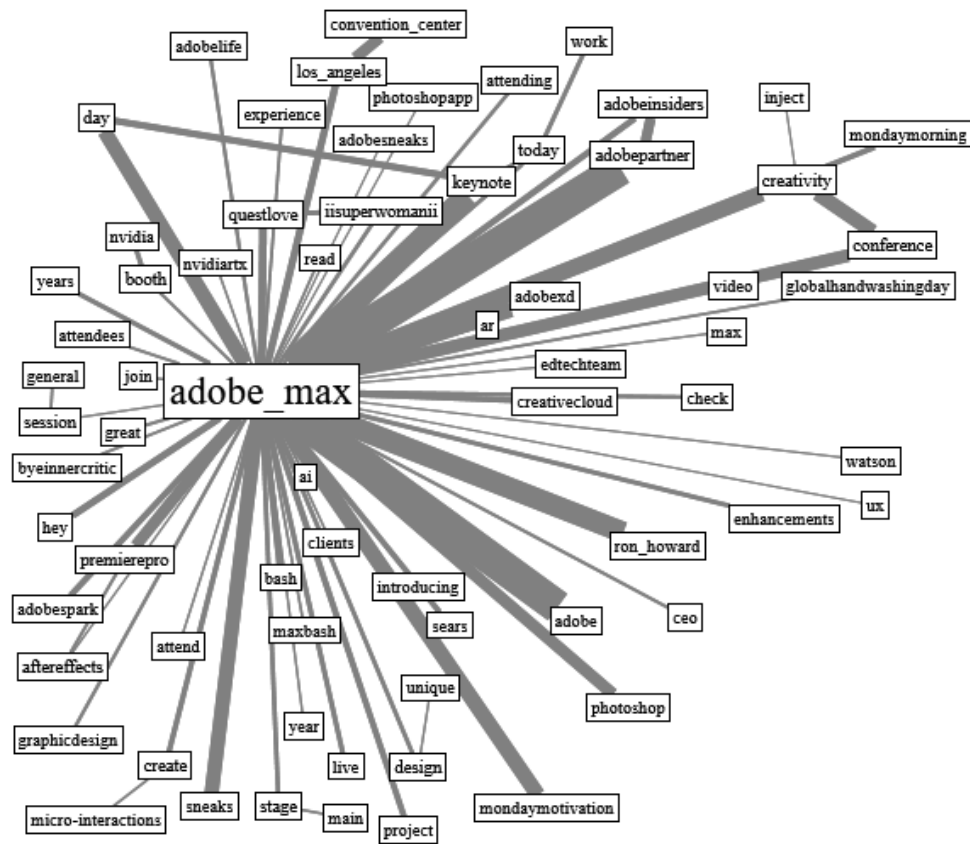
Cluster	Words within the cluster
1	photoshopapp, adobe_max, adobesneaks, inject, creativity, edtechteam, unique, design, join, attend, clients, year, nvidiartx, micro-interactions, create, stage, main, ai. read, maxbash, adobespark, bash, hey, adobeinsiders, adobepartner, globalhandwashingday, byeinnercritic, session, general, attendees, experience, aftereffects, premierepro, great, graphicdesign, adobelife, attending, check, today, keynote, years, nvidia, booth, iisuperwomanii, questlove, mondaymorning, los-angeles, convention_center, conference, sneaks, day
2	adobe_ceo, spark, adobe, photoshop, layers, talked, family, video, digital, painting, app, drawing, ceo, pro, premiere, creative-commons, rush, package, cross-device, all-in-one, editing
3	process, creative, max, keynotes, benefits, resident, work, best, tools, including, audio, solving, problem, ideas, online, cloud, creativecloud, sharing, creating, content, easier
4	plugins, adobexd, latest, innovations, xd, plugin, release, features, enhancements
5	ron_howard, director, reveals, creates, filmmaker, award-winning, academy, describes

Table 4: Adobe Max Tweet Examples per Cluster

Cluster	Example Tweet
1	Dang, you can now double click on text to edit it in @Photoshop! And click away to auto-commit! And do multiple undos in a row! The future is here you guys. #ItsAboutTime #AdobeMAX #AdobePartner #AdobeInsider
2	Adobe has launched Premiere Rush CC, its " all-in-one " video editing tool for online content creators, on iOS devices. But Android users will have to wait until 2019 to try it out... #AdobeMAX
3	As a beta tester, I am so excited for this to be live. The first all-in-one, cross-device video editing app that makes creating & sharing online content easier than ever. Ru on Premiere Rush CC yet?
4	Always fun to hear an audience delightedly reacting to features in @AdobeXD — lots of excited design educators in the room at @AdobeEdu getting a full demo #AdobeMAX
5	Such a privilege to be in an audience with Actor and Academy Award Winning Director, Ron Howard . Listening to stories behind the movies, his life, creativity and the process. Brilliant! #adobemax

Cluster 1 represents the most dominant theme at the conference among stakeholders on Twitter. As shown in Table 3, Cluster 1 contains words that relate to the keynote speeches, including *Ron Howard*, *Questlove*, and *Adobe CEO*. It also contains words that relate to Adobe products such as *creative cloud*, *photoshop*, *adobexd*, *adobe spark*, *premierpro*, and *adobespark*;

as well as conference logistics words such as stage, *Los Angeles*, *Convention Center*, and *booth*. One might expect that much of the conversation on Twitter at the conference may have to do with the keynote speeches, the organization's technology, and the logistics of getting places at the conference. However, to interpret the meaning of a network graph, one must look at not just the presence of nodes in the graph but how those nodes are connected.



Created with NodeXL Pro (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smrfoundation.org>)

Figure 3: Adobe Max 2018 Semantic Network Cluster 1

Figure 3 shows that *adobe_max* has a strong tie to *adobepartner*, and *adobe_partner* has a strong connection to *adobeinsider*. However, these words are not connected to themselves and do not tend to link to the other words in the cluster or other clusters. As a result, these words are important but not representative of the rest of the conversation in this cluster or others. One cannot

conclude based on this small grouping of three words that Adobe has created an experience through Adobe Max that they are creating a deeper relationship with their stakeholders that signifies partner and insider status. In fact, by going back to the original data with the full text of the tweet, one can see that the word, “insider” appears with the hashtag #AdobeInsider, as demonstrated in Table 4 in the example tweet. The hashtag indicates the person who tweeted is part of Adobe’s influencer marketing program where the company selects a certain number of influential individuals on social media to take part of their Adobe Insider Group (Grant, 2019).

Cluster 2 in the Adobe Max tweets includes words such as *adobe_ceo*, *adobe*, *spark*, *photoshop*, *video*, *drawing*, *painting*, *creative_commons*, and *app*. These words represent the technology that Adobe develops and creative opportunities with the technology. The word *family* appears within the text cluster, but it concerns the organization and its products, which means the term applies to how the products are grouped as a "family" or creative suite. It does not imply the attendees feel as though they are part of the Adobe family themselves.

Cluster 3 includes words such as *creative*, *process*, *benefits*, *work*, *best*, *tools*, *solving*, *problems*, *cloud*, *ideas*, *sharing*, *creating*, and *easier*. These words represent the opportunities stakeholders say are possible with Adobe products and technology. They are aspirational and indicative of the kinds of benefits that a product developer and marketer would hope the users would see in the technology. Cluster 4 includes words such as *plugins*, *adobexd*, *latest innovations*, *release*, *features*, and *enhancements*, which indicate the efforts to extend the technology beyond its limits to solve additional problems the user faces. These words are not connected to positive or negative emotional words per se, but it can be encouraging for Adobe to see the word innovations connected to latest release and features. The last cluster, which is Cluster 5, contains a set of words

about Ron Howard as a director and filmmaker. It represents the excitement the attendees had for the keynote speaker and Academy-Award Winner.

These results indicate that the Adobe Creative Max experience was positive for stakeholders who attended and tweeted to each other about the conference. The themes included much excitement about the keynote speakers, the organization products, and the possibility for creative output using the products. Adobe marketing and communications professionals may be pleased because no negative groupings of words appeared and no significant complaints surfaced in the semantic analysis.

RQ2: Can stakeholder-stakeholder communication on social media provide insight into the types of relationships the organization has with its stakeholders?

The themes identified indicate the presence of an exchange relationship because they deal mostly with the benefits that one would expect from purchasing a ticket to a major creativity conference. They do not indicate a covenantal relationship or a communal relationship where the relationship would be about how to accomplish a greater good beyond realizing the benefits from the transaction. Although a small cluster of words was shown that connect *adobeinsider* with *adobepartner* and *creative_max*, these words were not connected to other words in the semantic network. If more of these types of words were present or if a connection between these types of words and the other words in the network existed, then a theme might have arisen to suggest the presence of a covenantal relationship type.

This finding that the themes indicate the presence of only an exchange relationship-type and not a covenantal or mutual communal relationship type ought not to be interpreted as a negative. Hung (2005) classified the exchange relationship as a "win-win" relationship for the organization, and Hon and Grunig (1999) asserted that exchange-relationships were the essence of

marketing. The point is that Adobe may move up the continuum and develop a stronger relationship if stakeholders feel they are in a relationship to produce something great together with Adobe, rather than just by using Adobe products.

CHAPTER 5: RESULTS – DREAMFORCE AND THE STAKEHOLDER-STAKEHOLDER SEMANTIC NETWORK

The purpose of this chapter is to describe the results of the findings from the analysis in Chapter 3 within the context of the Dreamforce conference. The results show that the most significant theme in the stakeholder-stakeholder interaction at Dreamforce 2018 represents mutually communal and covenantal relationship types. As indicated at the beginning of Chapter 4, these results are influenced by the context of stakeholder-stakeholder interaction at a conference. A company-hosted conference presents a situation in which stakeholders may be predisposed to express positive sentiment on social media about the organization because the stakeholders have chosen to attend the conference and may expect to hear from the organization about future directions and product updates. Results could be very different in a study of stakeholder-stakeholder interaction on social media around a crisis, where stakeholders could discuss how to address a pressing problem by the organization. This conference context was deliberately chosen because it represents the type of work public relations practitioners regularly encounter in building and sustaining mutually beneficial relationships with stakeholders (Broom et al., 2012, p. 5).

Salesforce Conference Context

Salesforce organized the first Dreamforce conference in 2003 in San Francisco, California, and the conference involved only 1,000 attendees (Baker, 2015). The goal at the time was to provide attendees with hands-on product training and to inspire them to do new things with the product they had never tried before. In five years by 2008, Dreamforce had grown to include more than 10,000 conference attendees. Four years later, by 2012, Dreamforce surpassed 90,000 attendees, and three more years later by 2015, Dreamforce exceeded 160,000 attendees. At this

point, hotel rooms were sold out everywhere, so Salesforce began docking cruise ships in the San Francisco Bay, so attendees would have a place to stay during the conference (Owens, 2015). The 2018 Dreamforce conference represented Dreamforce's "Sweet 16," since it was entering its 16th year of existence and registrations reached 170,000 from 103 countries (Weeby & Kohner, 2018). During the years of growth, Dreamforce evolved from a conference focused on product-training for customers to a bigger event to showcase the culture and to include celebrities and rock stars.

Day 1 of Dreamforce 2018 began Tuesday, September 25 with a keynote from the Salesforce Chairman and co-CEO Marc Benioff. He spoke of the attendees as trailblazers and said the conference was a celebration of their work as trailblazers in their industries. Benioff then asserted that "business is a platform for change" (Woods, 2018) and called upon the attendees to become agents for change in society. He commended Apple's CEO Tim Cook as a trailblazer for what he has done for the LGBTQ community and their efforts to receive equality and respect. As examples of areas where attendees can use their businesses to create change, he cited Salesforce's efforts to improve education, reduce its carbon footprint, and help those who are homeless. Benioff then announced that Salesforce.org, the company's philanthropic organization, would be giving \$18 million in grants to help the city of San Francisco address problems in public education, homelessness, and cleanliness (Elder, 2018). He indicated that the grants helped Salesforce reach beyond 50 percent of its goal to give \$100 million to local schools, and he then invited the Mayor of San Francisco to join him on stage to speak.

In addition to these messages about improving society, Benioff invited the company's Chief Technology Officer to introduce new products that Salesforce developed to help its customers leverage mobile technology and artificial intelligence. Brands such as Unilever and Ben & Jerry's Ice Cream were featured as examples of customers who had implemented the new

technology. Although these examples were meant to feature new products, the examples were framed within the context of businesses that were blazing new trails and breaking new ground (Woods, 2018).

Day 2, Wednesday, September 26, 2018, began with a stronger focus on technology with announcements about a deeper integration between Salesforce and the Google Marketing Platform, including Google Analytics, Google Tag Manager, and Google Optimize. Day 2 also included a keynote from Apple's Vice President of Product Marketing, where she and the Salesforce Chief Marketing Officer discussed the partnership between Salesforce and Apple on mobile app development. At the same time, Salesforce kicked off its Dreamforce Fortune Executive Summit where executives from major businesses and organizations across the world came together during the middle of Salesforce to discuss innovation and ways to build customer trust (Elder, 2018). Day 2 also featured performances from entertainment artists such as M.C. Hammer and famous rock band Metallica.

Day 3, Thursday, September 27, 2018, featured the Dreamforce Equality Summit, which is a day at the conference set aside for inspiring messages about diversity, inclusion, sustainability. Former Vice President Al Gore spoke at the conference and invited the attendees to join in a sustainability revolution. At the same time, the Dreamforce Fortune Executive Summit continued its second day of sessions and included messages from CEO's who promoted gender and race equality in the workplace. Later, Salesforce co-CEO and Chairman Marc Benioff returned to the conference on Day 3 to host an interview with the Mayor of San Francisco about the challenges the city is facing and what it is doing to address the challenges. He also interviewed the CEO of Uber, the popular rideshare company, to discuss what the company is doing to improve its

company culture (Elder, 2018). Day 3 ended with more dances, concerts, and parties to entertain the guests in attendance.

Day 4, Friday, September 28, 2018, was the final day of the conference, and it aimed to create a reflective tone by focusing on personal empowerment, mindfulness, meditation, and balance in one's career ambitions (Honjo, 2018). Keynote speakers on Day 4 included a survivor of the Parkland school shooting in Florida, who spoke about gun violence; and Arianna Huffington, who spoke about the need to allow time for one to refuel. She shared her experience of founding and growing the Huffington Post. She shared how she spent so much time building the Huffington Post as a media property that she eventually collapsed from exhaustion in 2007 and had to be taken to a hospital. Since that time, she developed Thrive Global, which aims to reduce stress and burnout by promoting balance and well-being. Day 4 also included other speakers who were doctors and musicians but who shared their experiences of finding balance and mindfulness in a society driven towards achievement (Honjo, 2018).

The 2018 Dreamforce featured 50 keynote speeches from famous leaders, including two governors, and three mayors. The conference hosted more than 2,700 sessions and workshops during the 2018 conference. The massive conference featured announcements about its technology and deeper partnerships with technology and included an array of charitable giving to social causes. The conference attendees used the main hashtag #df18 to connect their tweets to the main online conference chatter.

Based on the Dreamforce context and the literature presented in Chapter 3, the following two research questions were explored in this study:

RQ1: What are the themes that arise when stakeholders communicate with each other on social media about the organization?

The first approach taken to identify the themes in the stakeholder-stakeholder interaction at the Dreamforce 2018 involved a process that follows traditional content analysis by generating a list of the most frequently occurring concepts. Table 4 shows the results of only the Top 20:

Table 5: Dreamforce 2018 Concept List

	<i>Concept</i>	<i>Frequency</i>		<i>Concept</i>	<i>Frequency</i>
1	df18	56228	11	more	2770
2	salesforce	12512	12	here	2668
3	this	3690	13	see	2597
4	ai	3494	14	not	2556
5	how	3452	15	what	2332
6	all	3146	16	today	2261
7	day	3063	17	great	2204
8	keynote	3042	18	get	2030
9	benioff	2916	19	data	1971
10	booth	2881	20	customer	1933

Table 4 indicates the main themes are the conference (df18), the company (Salesforce), artificial intelligence technology (ai), the CEO (Benioff), and the customer. In contrast to the Adobe data that has nouns and verbs in the list of frequently occurring words (Table 1), the Dreamforce list contains more modifiers such as *more*, *great*, *this*, *here*, *get*. These words by themselves do not represent a theme, but they are useful in deriving insight when combined with other words. Table 5 is generated based on the co-occurrence of the Top 20 word pairs.

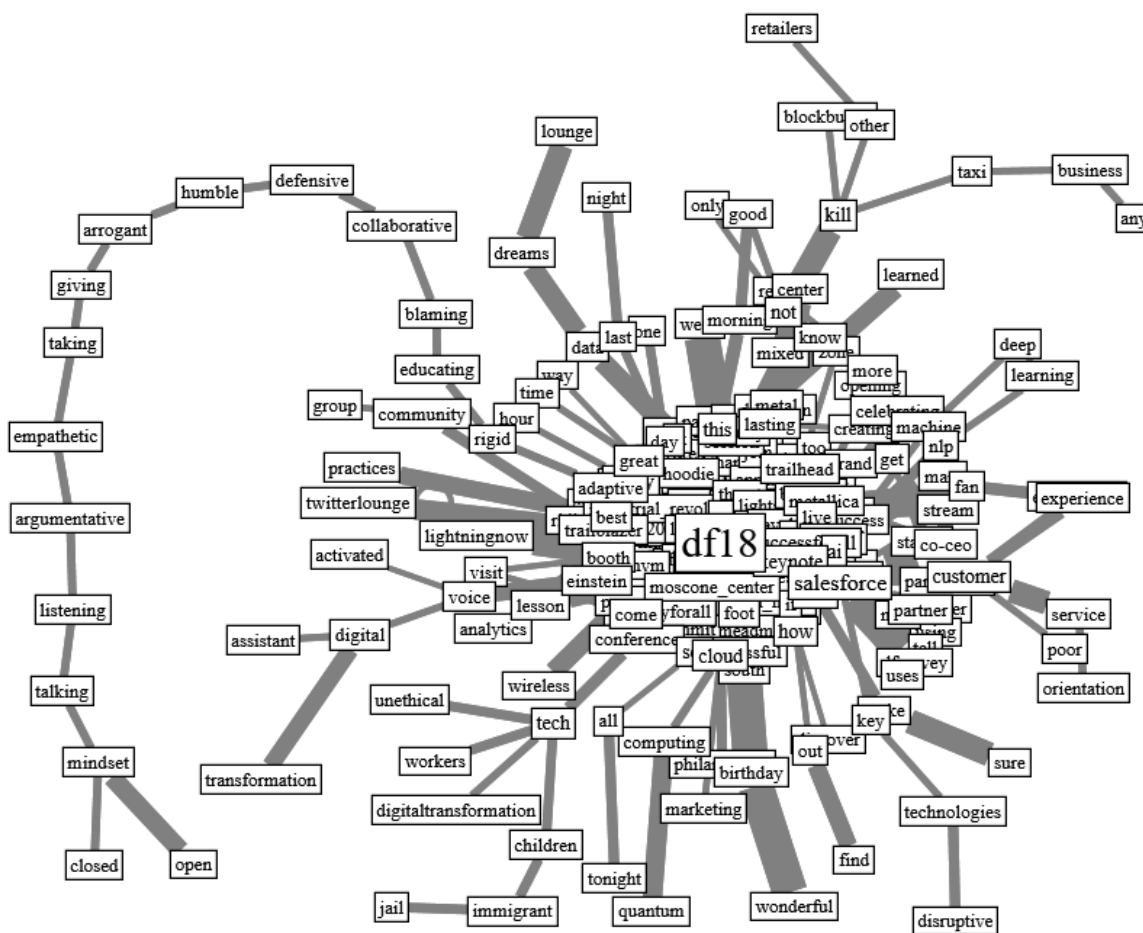
Table 6: Adobe Max Top 20 Co-Occurring Word Pairs

	<i>Column A</i>	<i>Column B</i>	<i>Frequency</i>		<i>Column A</i>	<i>Column B</i>	<i>Frequency</i>
1	df18	salesforce	4148	11	df18	equalityforall	534
2	df18	successful	850	12	attbizsummit	df18	515
3	successful	birthday	836	13	df18	attbizsummit	515
4	wonderful	birthday	836	14	df18	this	498
5	df18	keynote	800	15	this	df18	498
6	df18	successforall	711	16	df18	dreamforce18	489
7	benioff	df18	657	17	day	df18	486
8	lightningnow	successforall	657	18	lodge	success	483
9	dfsurvey	salesforce	584	19	co-ceo	salesforce	453
10	this	week	541	20	ar	vr	450

The themes from the top co-occurring words in Table 5 indicate more emotion than the themes in Table 4. In contrast to the themes of the conference, the company, artificial intelligence, and the CEO, the themes in Table 5 indicate success, a personal milestone for the CEO (his birthday), a positive emotion (wonderful), and success for all (equality). This type of interaction among stakeholders indicates that themes that supersede an exchange with the organization. If the stakeholders were mostly focused on the benefits they received from obtaining about the ticket they purchased to the conference, they might have tweeted more about the entertainment, the other prominent keynote speakers, or the logistics of the conference, as was the case with Adobe Creative Max. They might have let the CEO comment about his birthday and then ignored it, not bothering to tweet. Instead, they tweeted about the higher-level societal value of equality.

To explore the themes further, a semantic network was constructed using words that occurred 100 times or more. The Adobe semantic network included the words that co-occurred 50 times or more, which generated a semantic network of 300+ nodes. However, attempting to create

a semantic network of words that co-occurred 50+ times in the Dreamforce data resulted in a semantic network of 1,600+ nodes. Even after running a cluster analysis, the nodes were still not interpretable. Due to this, the semantic network of the Dreamforce stakeholder-stakeholder interaction on Twitter in Figure 4 includes only words that co-occurred 100 times or more.



Created with NodeXL Pro (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smrfoundation.org>)

Figure 4: Dreamforce 2018 Semantic Network

The Semantic Network in Figure 4 shows nodes that are larger as indicative of those that have a higher degree. Degree is a measure of how many connections a node has to other nodes in the network. The graph layout is based on degree, which means largest nodes are in the middle of

the graph and the smaller nodes, denoting the ones with few connections, have been pushed to the outer edges of the graph. In Figure 4, the largest node is *df18*, which is the conference itself. The thickness of the lines in Figure 4 indicates the relative frequency with which the two words co-occurred in the text.

One of the immediately notable structures in Figure 4 is the curved tail to the left of the graph. This tail indicates that the words *educating* co-occurs with *blaming*, which co-occurs with *collaborative*, which then leads to *defensive*, *humble*, *arrogant*, *giving*, *taking*, *empathetic*, *argumentative*, *listening*, *talking*, and *mindset*. These words can seem contradictory towards each other, such as *humble* and *arrogant* or *giving* and *taking*. Still, these words are connected in a chain where one concept on Twitter led to another until the last word in the chain – *mindset*. Here the words split between *open* and *closed*.

To interpret the meaning behind the chain of words that seemingly contradict one another, the tweets that used the words were identified and reviewed. It turns out they originate from a tweet posted by Vala Afshar, the chief digital evangelist at Salesforce and columnist at the Huffington Post and ZDNet. Even though the tweets were filtered to exclude official Salesforce Twitter handles, the data still contained tweets from employees because they are stakeholders. Stakeholders are defined as those that are attached to the organization to help it flourish and survive long term (Wakefield & Knighton, 2018). In this case, one stakeholder, Vala Afshar, carried a significant amount of attention in the online conversation on Twitter about Dreamforce. His point was that one could have a closed mindset and be talking, argumentative, arrogant, defensive, blaming, and rigid. Or one could have an open mindset and be listening, empathetic, giving, humble, inclusive, educating, and adaptive. This dichotomy between a closed and an open mindset appears to have resonated with many other stakeholders, which is one potential reason why it

showed up in the semantic network analysis. However, since the words are off on a long chain, their connection back to the organization, Salesforce, or the conference is quite distant. Though this insight does not help one understand the type of relationship these stakeholders have with Salesforce, it indicates the influence that one stakeholder type can have on other stakeholder types when interacting on social media.

To look deeper at the themes embedded in the semantic network, a cluster analysis was run using the Clauset-Newman-Moore algorithm. The results are displayed in Figure 5.

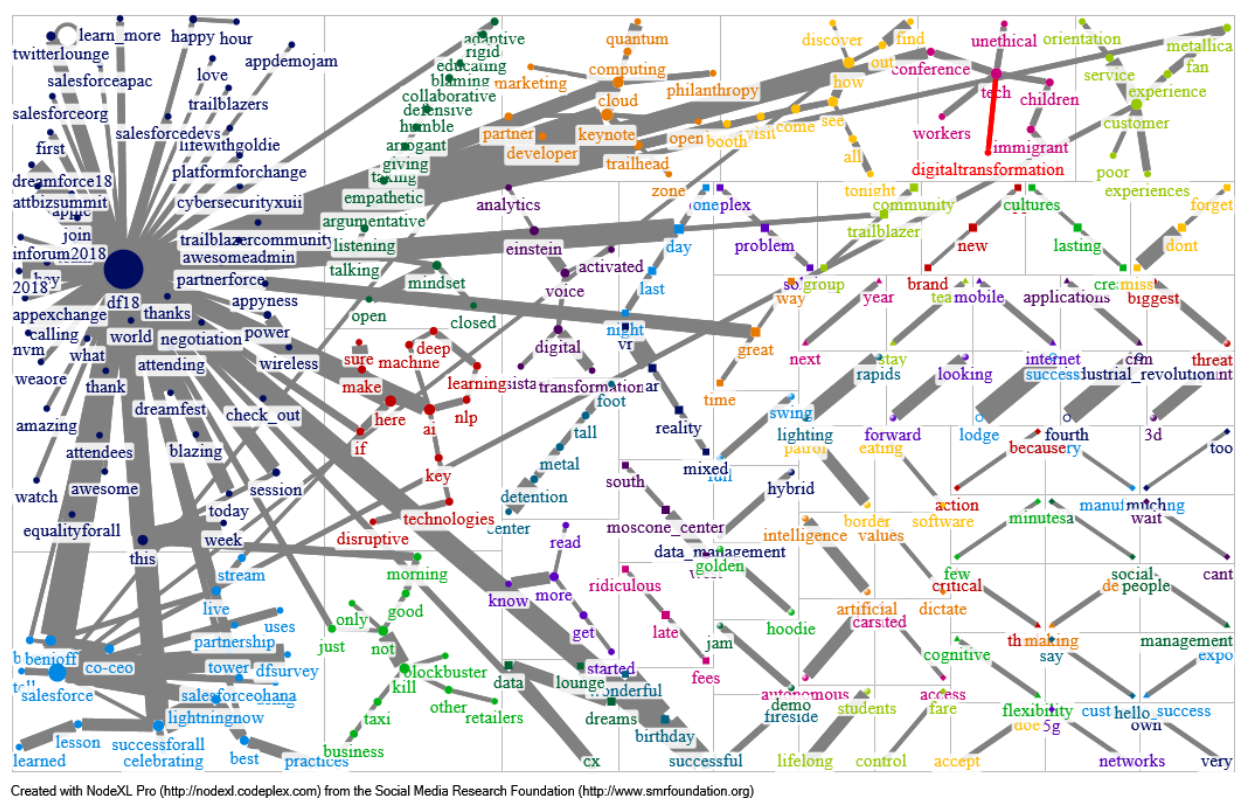


Figure 5: Dreamforce 2018 Semantic Network Clusters

Cluster 1 in Figure 5 is on the top left in dark blue contains and represents the most significant cluster with 51 words. Cluster 2 is displayed below Cluster 1 in light blue and contains 21 words. Cluster 3 is displayed in dark green and is displayed to the right of Cluster 1, containing

the words discussed previously as an open and closed mindset. Cluster 4 is displayed in a light green color on the bottom of the graph to the right of Cluster 2 and contains 12 words. Cluster 5 is displayed in red font to the right of Cluster 1 in the middle of the graph and contains 12 words. Cluster 6 is displayed in an orange font at the top of the graph in the middle and contains 11 words. The words from each cluster are listed in Table 7, and an example of a tweet from each cluster is listed in Table 8.

Table 7: Dreamforce Words by Cluster

Cluster	Words within the cluster
1	df18, world, thank, apple, blazing wireless, team, trailblazercommunity, power, awesome, hey, awesome admin, love, app exchange, twitterlounge, appdemojam, cybersecurity, today, hour, partnerforce, session, happy, platformforchange, dreamfest, salesforceapac, learn_more, trailblazers, join, dreamforce18, check_out, first, attbizsummit, inforum2018, this, 2018, salesforceorg, thanks, attendees, amazing, what, lifewithgoldie, watch, calling, we're, negotiation, salesforcedevs, attending, appyness, nvm, dreamforce18, 2018, week, attbizsummit, equalityforall,
2	salesforce, using, co-ceo, marc, benioff, salesforce ohana, partnership, stream, live, tower, tell, success for all, celebrating, uses, practices, best, lightning now, lesson, learned
3	talking, mindset, listening, taking, giving, empathetic, humble, defensive, collaborative, closed, rigid, educating, blaming, arrogant, argumentative, adaptive, open
4	only, not, taxi, kill, business, blockbuster, retailers, other, any, just, good, morning
5	technologies, key, ai, machine, deep, here, disruptive, nlp, learning, if, sure, make
6	zone, trailhead, partner, keynote, marketing, cloud, opening, philanthropy, developer, quantum, computing

Table 8: Dreamforce Example Tweets by Cluster

Cluster	Example Tweet
1	There's truly nothing better than kicking off #df18 with 400 of our incredible Trailblazer Community Group Leaders! These selfless individuals are the absolute best of the best & we can't thank them enough for everything they do for our community! #WeLoveYou #TrailblazerCommunity
2	Keynote: Dreamforce: A Celebration Of #Trailblazers The @Salesforce Ohana The #Trailblazer community includes everybody including tech businesses like Google, AWS, IBM Innovation, Equality @Benioff #DF18 @Salesforce @Dreamforce @SalesforceUK
3	Closed mindset – talking, argumentative, taking, arrogant, defensive, blaming, rigid. Open mindset – listening, empathetic, giving, humble, collaborative, educating, adaptive #DF18
4	.@Netflix did not kill blockbuster. Ridiculous late fees did. @Uber did not kill taxi business. Limited access and fare control did. @Amazon did not kill other retailers. Poor customer service did. Not being customer-centric is biggest threat to any business. — @betobrea #DF18
5	Artificial intelligence could add \$15.7 trillion to global GDP by 2030. Who are the 100 companies leading the way with #AI? [#MachineLearning #ArtificialIntelligence] #DF18
6	Following up yesterday's #DF18 keynote by talking #PhilanthropyCloud, community building and donor engagement with reporters and at the campground with @unitedway staff and attendees. Excited for the Philanthropy Cloud keynote later today! @SalesforceOrg

To investigate the themes in Cluster 1, a semantic network of only those words was created and displayed in Figure 6. The graph in Figure 6 uses the thickness of the lines to indicate the frequency with which words co-occur. The result is that words that have a strong connection to the conference (*df18*) in Cluster 1 include *equality for all*, *awesome*, *awesome admins*, *trailblazer community*, *platform for change*, *trailhead*, *successful*, *cloud*, and *salesforce.org*. Words with a weaker relative connection to the conference (*df18*) in Cluster 1 include the CEO (*Benioff*), *Einstein*, which was the company's big product announcement at the conference, *apple*, and *metallica*. Interestingly, these words with a relatively weaker connection are associated with the main announcements at the conference. Dreamforce announced updates to its partnership with Apple, as well as a new product that was supposed to make a major difference to its customers who needed to record data about their work while on the go. Instead, the words with a stronger connection are words that carry emotion, emphasize equality and success. They represent these larger societal values, and they are all directly and strongly connected back to Salesforce through Dreamforce.

Figure 6: Dreamforce 2018 Semantic Network Cluster 1

Cluster 2, which reflects the second-largest cluster of words or sub-theme to the Dreamforce conference, contains words such as *marc benioffs*, *co-ceo*, *live stream*, *success for all*, *celebrating*, *practices*, *lesson*, *learned*. These words represent a reiteration of the keynote by the CEO Mark Benioff. Stakeholders may have tweeted during the keynote and retweeted each other. One would expect that the stakeholders would pay attention to the CEO keynote. However, it is interesting to note that these stakeholders chose deliberately to tweet more frequently about this

keynote than all the other keynotes from celebrities, mayors, governors, or Al Gore. The insight here is that the second largest source of words from the tweets clustered around the keynote at the conference.

Cluster 3 reflects that words by the Salesforce Chief Digital Evangelist on the difference between an open and closed mindset, as previously discussed in this chapter. Cluster 4 includes words such as *kill*, *taxi*, *blockbuster*, *business*, *retailers*, and *good*. They reflect the discussion about businesses that struggle to adjust and adapt over time, such as the movie business Blockbuster because of Netflix or taxis because of ride-sharing services such as Uber and Lyft. Cluster 5 includes words such as *key*, *technologies*, *ai* (artificial intelligence), *deep*, *learning*, *disruptive*. These words represent the technology-based discussion at the conference around the future of machine learning that uses artificial intelligence. This type of technology discussion is one that would be expected at a major technology conference, especially one hosted by a technology company such as Salesforce. Cluster 6 includes words such as *philanthropy*, *partner*, *trailhead*, *cloud*, *computing*, and *marketing zone*. Most of these words indicate a tie back to these societal values manifested in Cluster 1 that transcend transactions and exchanges. However, the presence of the word *marketing* may imply a few stakeholders who are skeptical about Salesforce's motives to challenge its customers to be involved in social justice initiatives.

RQ2: Can stakeholder-stakeholder communication on social media provide insight into the types of relationships the organization has with its stakeholders?

These findings indicate that Salesforce has developed the type of relationship with its stakeholders that surpasses the exchange-relationship type. If the stakeholders held an exchange relationship with Salesforce, they would be tweeting more about the product, the conference entertainment, or the logistics. Instead, much of the discourse on social media by these stakeholders reflects

emotional words such as *awesome*, *love*, and *amazing* that are clustered with *trailblazing community*, *platform for change* and equality for all. These words suggest Salesforce has developed a mutually communal relationship with many of its stakeholders. However, not all of the words reflect this type of community orientation and adoration. These clusters map closer to the covenantal relationship type. The covenantal relationship type acknowledges power imbalance in a relationship but remains committed to achieving a common good.

The other clusters include themes of acceptance to a CEO keynote, adoption of messaging from a digital evangelist at the company, and ongoing discussions about the potential for machine learning and artificial intelligence. These themes demonstrate the acceptance of the power that the CEO of Salesforce carries but also reflects on the potential for common good through an *open mindset* that can leverage the best of cutting-edge technology.

Dreamforce has become one of the largest company-hosted technology conferences in the world. With that growth, the company has managed to build relationships with its stakeholders within the win-win zone (Hung, 2005) and moved the relationship further up the continuum to both mutually communal and covenantal relationship types.

The risk appears to be small at this point, but it may be that a few stakeholders are skeptical that all of the talk about society is pushed by marketing for appearances only and not for real change. It will be important for Salesforce to follow up on its philanthropic initiatives in the Bay Area to show their stakeholders they are serious. The good news is that as they fulfill on their commitments to improve society, Salesforce has a vast army of stakeholders who have a strong relationship with the organization and may continue to express their relationship on social media.

CHAPTER 6: DISCUSSION

The findings from the study have implications for three areas of public relations scholarship. The first is the organization-stakeholder relationship. The second is the link between executive communications and corporate social responsibility. The third is stakeholder-stakeholder communications. This chapter will discuss how the results from the study expand the understandings in these three areas and what they mean for the practice of public relations. The chapter will conclude with an acknowledge of limitations and recommendations on future research directions.

The Organization-Stakeholder Relationship

The analysis from this study indicates that a new relationship maintenance strategy should be added to the literature. Hon and Grunig (1999) originally listed access, positivity, openness, assurances, networking, and sharing of tasks as the main strategies that organizations use to cultivate relationships with stakeholders. Ki and Hon (2008) created a scale to measure the degree to which an organization uses each cultivation strategy. Although these strategies could be mapped to the Adobe and Salesforce conferences; they would not explain why Dreamforce has a mutually communal relationship with its stakeholders, and Adobe has an exchange relationship with its stakeholders.

For example, Adobe has its Insider program, and Salesforce has its Trailblazer program, which are programs that give influential stakeholders access to company information. Similarly, both companies demonstrate positivity, openness, assurances, networking, and sharing of tasks. In many ways, the conference format itself enables organizations to use all the cultivation strategies with their stakeholders. Since Adobe and Salesforce use all the cultivation strategies with their

stakeholders, the implication is that there is some other factor that may explain why Salesforce has a better relationship with its stakeholders than Adobe does.

The data in Table 7 shows that one of the words in the second cluster at Dreamforce is “Ohana.” Table 8 provides an example of a tweet from Dreamforce that uses “Ohana.” The word originates from Hawaii and means “family.” It has been part of the Salesforce culture since Marc Benioff co-founded the company in 1999:

“The Salesforce Ohana is a deep-seated support system we nurture inside our company. And, it doesn't stop at our employees — it extends to our partners, customers, and members of the communities that we call home. We collaborate, take care of one another, have fun together, and work to leave the world a better place” (Kohner, 2017).

The Salesforce Ohana culture bled into Dreamforce over the years. The 2018 Dreamforce data shows that Ohana occurred within proximity to words such as *Marc Benioff*, *Success for All*, *best practices*, *lessons learned*, and *partnership*. These words suggest a family culture that is more akin to a communal relationship than an exchange relationship. However, the insight here is not that organizations need to develop an “Ohana” culture within their organization to achieve a mutually communal relationship type. The insight is that the culture of the organization influences the cultivation of the relationship between the organization and the stakeholder.

Men (2016) examined the linkages between organizational culture and employee-organization relationships. Employees are one type of stakeholder, and Men’s (2016) research indicates that cultural dimensions of supportiveness were predictors of a relationship. However, other scholars have not yet expanded upon that research to examine organizational culture as a cultivation strategy. Thus, it is the argument of this author in this study that based upon the big data from these conferences that organizational culture can be a cultivation strategy to the organization-stakeholder relationship. Company culture seems to be especially relevant in the

context of a large conference, which may be why Apple's WWDC attendees compare the experience of attending the conference to that of a religious pilgrimage (Pogačnik et al., (2014).

Corporate Social Responsibility and CEO Communications

The second contribution of this study is the advancement of theoretical understanding of the link between CEO communications and corporate social responsibility (CSR). Public Relations scholars that examine CSR communication differentiate between a stakeholder information strategy and stakeholder engagement strategy (Lim & Greenwood, 2017). A stakeholder information strategy is characterized as promoting the company's efforts to be socially responsible. It is the most common and widespread type of CSR communications (Lim & Greenwood, 2017, p. 159). However, their findings indicate that a stakeholder engagement strategy is more effective. A stakeholder engagement strategy involves two-way communication and dialogue between the organization and its stakeholders (Taylor & Kent, 2014).

Although this research distinguishes between traditional, one-way CSR communication practices and the normative, two-way CSR practice, the research does not link executive communications to CSR communications. However, the analysis in this study shows the undeniable influence that CEO Communications has on stakeholder-stakeholder interaction. At both conferences, the stakeholders mentioned the CEO in their respective postings on social media. The Adobe data shows a co-occurrence between words that represent the CEO with words about technology (see Table 2, Cluster 2), and the Salesforce data shows a co-occurrence between words that represent the CEO with words about equality and social justice (see Table 4, Cluster 2). The quality of the stakeholder-stakeholder interactions at Dreamforce transcended technological innovations even though it was a technology conference.

The central cluster of concepts included emotional words such as *love*, *happy*, *awesome*, and *success for all*. These results link the influence of CEO Communications on the quality of stakeholder-stakeholder interaction on social media. They indicate that the choice the CEO makes in the message and tone of his or her communications, especially at a live event, can affect what stakeholders talk about online to other stakeholders.

Previous research has linked CEO communication styles on social media and their effects on the development of trust and satisfaction with the company (Tsai & Men, 2017). The research is based on the call from the Edelman Trust Barometer (2014) that emphasized the need for CEO's to become the "Chief Engagement Officer." So, when the Salesforce CEO Marc Benioff invited 170,000 stakeholders to become a trailblazer in advancing social issues, Salesforce was not merely being responsive to its stakeholders but was instead engaging its stakeholders.

Granted, Wang and Huang (2018) studied CEO Communications and corporate social responsibility to see if it matters whether the organization posts or the CEO posts on social media about its initiatives. They found that there is no significant difference. However, their study involved an experiment that measured perceptions of fictitious Facebook posts, not of CEO speeches live at an event on a stage. The live event contains a much stronger potential for a stakeholder emotional response, which can then lead to stakeholder-stakeholder engagement. As evidenced in this study, the results show that Salesforce achieved a mutual communal and a covenantal relationship with many of its stakeholders while Adobe achieved mainly an exchange relationship.

Stakeholder-Stakeholder Communication

The third area of contribution to the literature involves stakeholder-stakeholder communications. Until now, the majority of the main public relations theories, such as the two-way symmetrical model of public relations (Grunig & Hunt, 1984), the dialogic model of public relations (Kent & Taylor, 1998, Taylor & Kent, 2014), and the relationship management theory of public relations (Ledingham, 2003) are based on the interactions between the organization and its stakeholders. However, society today is constructed of social networks where stakeholders, such as investors, partners, employees, and customers, are linked together. This networked reality suggests that stakeholder-stakeholder communication takes place regardless of whether scholars research it.

The analysis from this study suggests that at the very least, stakeholder-stakeholder communication on social media can be studied using text-mining and semantic network analysis methods. The themes of stakeholder-stakeholder interaction can be discovered and identified, and they can then be mapped to an organization-stakeholder relationship type, which implies that stakeholder-stakeholder interaction can be researched in other contexts as well.

In addition, the analysis from this study indicates that stakeholder-stakeholder communication tends to coalesce around specific topics and while drowning out others. For example, one attendee at Dreamforce tweeted, "We're at #DF18 with a detention center to tell @salesforce to #CanceltheContract with CBP. CBP uses Salesforce to jail immigrant children, tech workers have to demand an end to unethical tech. #TechWontBuildIt."

The text of these kinds of tweets appears in one of the very small clusters in the top right corner of Figure 5. But the stakeholder-stakeholder interaction did not give much attention to those tweets and instead focused on Marc Benioff's keynote, Ohana, and other key parts of the

conference. This means that stakeholder-stakeholder communication tends to coalesce around specific themes that are shared among the stakeholders generally and not around isolated negative experiences.

Implications for Public Relations practice

This study provides two important contributions to public relations practice. First, big data can be analyzed and examined for themes, which can then help the practitioner to assess the relationship it has with its stakeholders and create a strategy to strengthen it. Social Media data contains messages from stakeholders that can be missed if they are not studied using a computational approach. Text mining and semantic network analysis provide one way to study the textual data on social media, but there may be other methods as well. Second, public relations practitioners can learn from the Salesforce example that the company culture and the CEO Communications in a live event can have a profound impact on the strength of the relationship the company has with its stakeholders.

Limitations and Future Directions

The results of this study are based on limitations and biases that should be acknowledged. First, the results are representative of online posts by stakeholders and do not represent the offline conversations by stakeholders at the conference. This means that much of the conversations that stakeholder had with other stakeholders at Adobe Creative Max and Dreamforce were not captured because they occurred face to face at events, dinners, meetings, and parties. One implication of not capturing these offline conversations is that this study does not uncover how those offline conversations can shift the type of relationship the organization has with its stakeholders. To study that type of interaction may be nearly impossible as those offline conversations can be confidential.

One could do an ethnography of the conference, but one could still miss out on specific conversations that may be privy to the executive team and the investors but not the researcher.

A second limitation to the study, which presents a potential bias, is that the study did not identify how much and to what extent the companies prepared internal stakeholders, such as employees, for the Adobe Creative Max and the Dreamforce conferences. One cannot imagine a situation where a company would create such a major conference and not go to great lengths to prepare employees to speak and to engage in a specific way with external stakeholders at the conference. The advanced preparation work with employees could have thus skewed the results to be more positive than it would have naturally been otherwise. However, this study intentionally excluded the tweets from all the official Twitter handles that Adobe and Salesforce owns. In addition, the study examined such a large volume of tweets that it is improbable that the majority of the words found in the text mining project were influenced by a few well-prepared stakeholders. It may be possible that a few themes were influenced, such as the theme from the Dreamforce conference about an open compared to a closed mindset that the digital evangelist at Salesforce publicized. However, the notion that most of the clusters or sub-themes were significantly influenced by internal compared to external stakeholders like that one is not realistic.

A third limitation of the study is the lack of quantifiable measures around the relationship. This study does not measure the strength of the relationship as a whole, but it maps the content of the conversation to the relationship type. This distinction implies that the study cannot make measurable claims about how strong or weak the relationship is after a company hosts an event for its stakeholders. Future studies may find value in exploring the indicators of trust in a relationship and map those indicators into a machine learning algorithm that can classify text as it comes into

the social media networks. In that way, the public relations profession could use real-time data to measure the fluctuations in the state of the relationship.

A fourth limitation of the study is that it does not have generalizable results beyond the context of the conference. The study did not examine a crisis or other context where stakeholder-stakeholders interact. Instead, the intent of the study was to demonstrate how this type of analysis can be used to understand the relationship stakeholders have with the organization since the majority of social media analytics measure responses to messages and do not seek to describe the relationship type.

A fifth limitation of the study is the fact that this study did not compare stakeholder-stakeholder communication among separate time periods during the event. No attempt was made to map out the themes each day at the conferences, but this decision was made deliberately because of how these conferences operate. The conferences do not offer tickets to the event for each day, and they give attendees many items that are free each day, so it becomes part of the culture to stay for the entire conference. Salesforce, for example, posted on their Dreamforce Ready webpage that attendees should not bring too much stuff, “Remember, you’ll be getting some sweet swag” (Dreamforce Ready, 2018). These facets of the conference suggest that the companies intend to gather stakeholders for a specific period of time (the length of the conference) and may then want to understand how the communication between the stakeholders indicates the type of relationship the stakeholders have with the organization.

A fifth limitation of the study is the lack of a sentiment analysis of the tweets, which may have provided more insight into the stakeholder-stakeholder interaction. However, this study intentionally selected a context in which stakeholders congregate around a positive interaction with the organization, one in which the stakeholders deliberately choose to attend an event designed to

promote the organization. The stakeholders are predisposed towards positive interaction, so a sentiment analysis of the tweets may have been less relevant to the intents and purpose of this particular context under study. Lastly, this study did not segregate and compare different stakeholder types and their communication with other stakeholder types. For example, the study did not analyze how investors communicated with partners on Twitter. This choice was made intentionally by the researcher because the stakeholders today live in a networked world where their communication on Twitter is not viewed by one stakeholder type but by multiple stakeholder types. As indicated previously in the literature review, Twitter is a medium which can “connect diverse networks, actors, and locations in an action space” (Segerberg & Bennett, 2011, p. 202). For this reason, Twitter presents an opportunity to study stakeholder-stakeholder interaction within the network paradigm.

Future studies of stakeholder-stakeholder interaction on Twitter can consider the consequences and implications that arise from different contexts, such as around a crisis. In those contexts, scholars can explore the use of sentiment analysis with cluster analysis. The opportunity is to explore the themes that arise through semantic network analysis and then to assign a quantifiable sentiment score to the themes. Before that study can be completed; however, more research needs to be done to ensure the sentiment measuring algorithms are accurate. In the Dreamforce data, the words surrounding the closed mindset would be classified as negative; but in reality, they were part of a positive message sent to encourage open-mindedness in a community that wants more equality. The current sentiment analysis algorithms may inadvertently classify that text as negative when it should be classified as positive. More advanced methodological work needs to be completed before sentiment analysis is applied in full force.

The other area of future work that could be developed is around issue anticipation using text mining of social media data. The relationship continuum modified by Hung (2005) contains negative and neutral relationship types that could be mapped to themes arising on social media. But the unresolved questions include when and how frequently to conduct this type of research with stakeholders and under what context such that one successfully identifies an issue before it becomes a crisis. If scholars can work out these areas, they could help professionals develop and maintain better quality relationships with stakeholders.

Conclusion

This study demonstrates one way that public relations professionals may use big data to fulfill responsibilities in stakeholder management. Specifically, text mining and semantic network analysis enable public relations professionals to use big data to listen to stakeholders and to assess the relationship. It also broadens theoretical understandings about the role that CEO Communication can have on social media engagement among stakeholders. The risk, however, is that the path of least resistance may be to continue using social media metrics that measure message dissemination. If that occurs, history will be bound to repeat itself, placing public relations in the role to get the word out.

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