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The Social Influence Qualities of Social Network Sites: A Qualitative and Experimental Investigation

J. Paul Conner

**THE SOCIAL INFLUENCE QUALITIES OF
SOCIAL NETWORK SITES:
A QUALITATIVE AND EXPERIMENTAL
INVESTIGATON**

THESIS

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AFIT/GEM/ENV/09-M02

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Abstract

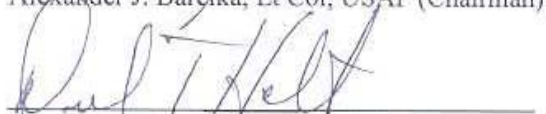While social network sites (SNS) are a popular form of new media, the literature has not investigated the social influence of these internet sites. Using a mixed method approach of qualitative interviews and a laboratory experiment, this study tests a process model predicting the effects of communication processes and technology on social influence. This model suggested that SNSs may be more effective at social influence than face-to-face communication.

A qualitative study was performed to determine whether the hypotheses were plausible whereby it was suggested that SNSs may influence other individuals and SNSs might be a more effective at influencing individuals when compared to other methods of communication. Qualitative results illustrate that social network sites have several strengths over traditional communications mediums and that they can be used to effectively influence others.

The results of the experiment found that face-to-face communication was more effective than social network sites at influencing individuals. The data implies that sharing more ideas, when combined with slower communication medium such as SNSs, can actually result in less social influence. However, Facebook participants overwhelmingly felt that they needed more time to complete tasks. Thus, it is not yet possible to reject the theory that SNSs have the potential to be more influential than face-to-face communication.

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J. Paul Conner

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THE SOCIAL INFLUENCE QUALITIES OF SOCIAL NETWORK SITES:

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I. Introduction

Background

Few would argue that over the past two decades the Internet has become a natural, ubiquitous part of everyday life (Bargh and McKenna, 2004). In fact, it can be argued that the continually growing usage and popularity of the Internet has made a substantial impact on our society (Cho and Khang, 2006). Today's children grow up with the Internet and as adults they will push the boundaries of technology usage to new levels (Spero and Stone, 2004). Existing boundaries of usage, impact, and applications can be expected to increase well into the future. The growth of the Internet is important because in addition to being influenced by current forms of media, "it helps shape the future of other existing media and gives birth to new media" (Cho and Khang, 2006, pg. 157).

"New media" technologies utilize the Internet and include social network websites (e.g. "MySpace" and "Facebook"), weblogs (blogs), video sharing websites (e.g. "YouTube"), electronic mail (e-mail), streaming media, personal websites, and cell phone-enabled text messaging. One particular type of new media, the social network site is typically a web based service that provides users several ways to interact and facilitates the development of online communities of individuals who share similar backgrounds, interests, or activities. One such social network site, MySpace, is a regular destination for

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55% of the more than 21 million teenagers online on any given weekday after school (Maughan, 2007). The growing popularity of this technology has prompted corporations to increasingly invest time and money to create, purchase, promote, and advertise with social network sites (Boyd and Ellison, 2007). Consequently, there is little disagreement that new media of this type "is likely to have a significant impact…but there remains substantial disagreement as to the nature and value of this impact" (Bargh and McKenna, 2004:575). In an effort to understand these sites and their impact, researchers tended to focus on individuals' impression management techniques, the structure of emerging networks, and individual privacy issues (Boyd and Ellison, 2007).

Although descriptive efforts have begun to identify the fundamental changes new media has created and its implications, research examining how new media influence organizational work processes and how individuals use them to influence others is in its infancy (Senecal and Nantel, 2002; Guadagno and Cialdini, 2005). Generally, studies comparing the influence of different communications media have compared face-to-face interactions with other media (Bordia, 1997; Dennis et al., 1998; Lievrouw and Livingstone, 2006). These influences have often been examined through a framework such as media richness theory. Media richness theory suggests that as a communication media includes more cues, (e.g., facial expressions displayed during a face-to-face interaction) the amount of information conveyed increases. The richness needed for any particular message depends on the communication task (DeLuca and Valacich, 2006). While the idea that the influence of new media can be explored through media richness theory is appealing, the empirical findings linked with this theory have been inconsistent

(Dennis and Kinney, 1998; Dennis et al., 1999; DeLuca and Valacich, 2006). According to Dennis and Valacich (1999), tests of media richness theory have not been supported when using new media such as computer mediated communication.

Accordingly, media synchronicity theory has emerged as a refinement and extension of media richness theory and appears to be a more appropriate framework to examine new media influences (Dennis et al., 1998; Maruping and Agarwal, 2004). Like media richness theory, media synchronicity theory considers how messages are conveyed among those involved; but, unlike media richness, it considers convergence as well (DeLuca and Valacich, 2006). Convergence is defined as the extent to which the meaning of a message becomes shared among those individuals involved. Because new media technologies permit interactions that occur at differing rates or levels of synchronicity (i.e., a text message might be viewed immediately or some days later), the extent to which any communication is effective would be related not only to the richness of the conveyance mechanism, but also the extent to which that medium facilitates the necessary convergence (Dennis et al., 1998). In essence, the differing synchronicity of communications mediums would help or hinder the process of the conveyance of intended meanings to those involved or the convergence of the interpretations among those involved.

Research Questions

There are two research questions that are addressed in this study. The first question is: <u>What types of messages are being sent and sought out via new media</u>

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services? Compared to the existing and established forms of media, there is much less known about the Internet as a form of communication (Cho and Khang, 2006). While it is accepted that messages are being shared, little is known about how these messages are being sent. Specifically, which types of messages are most likely to be shared? Are there common themes among shared messages, or are there distinct and separate categories of messages that are most likely to be sent and received? It would also be useful to know which types of messages are unique to computer-mediated communication and the types that do not lend themselves well to online communication.

Of the messages being shared, it is also important to understand how different types of messages are influential. The second research question presented here attempts to address the need for scholarly research on online interpersonal influence: How do messages sent via new media sources influence individuals? A message sent via new media technology may have little value if it doesn't influence receivers. It is important to determine how new media affects the ability of a message to be influential.

Methodology

The theoretical basis for this study is media synchronicity theory as well as theory derived from the social influence literature. Correlations between the common themes from the literature review were assessed to develop an independent, theory driven model to be tested in an experimental setting. This led to a series of hypotheses that addressed the two research questions.

This research includes two distinct studies. First, a qualitative study was conducted to investigate the extent to which young adults used new media technologies and how they influenced one another through these technologies. From this, it was possible to assess the extent to which a hypothesized theoretical model predicted the effects of information and communication technology on social influence. Then, the theoretical model and associated hypotheses were tested in a second experimental study. Users were required to complete an experimental task individually and then as a group using either social network sites or face-to-face communication.   Measures of communication effectiveness and social influence were used to identify how the capabilities and strengths of both communication mediums are used influence others.

Purpose and Significance of Study

The overarching goal of the study was to develop an increased understanding of the social influence of new media. This understanding is significant due to the rapid increase in the use of new media technologies and the effectiveness of these technologies. For example, terrorist groups such as al Qaeda are driven primarily by "ideology and the Internet" (Cohen and Kupcu, 2007). The Internet is important to criminals and terrorist organizations because it enables undetected private communications across any distance (Bargh and McKenna, 2004). By understanding how new media technologies are different than traditional communications technologies and how they are used influence people, society will be able to leverage them to deliver more agreeable messages while

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simultaneously thwarting those who are now able to easily broadcast a message of hate, violence, and intolerance.

Many studies have examined the significance of the social network on social network sites. However, the existing literature hasn't examined the use of social network sites as a communications tool. While the social influence of many new media technologies such as e-mail have already been investigated, there is also a lack of research on the capabilities of social network sites and its ability to influence others. By utilizing a mixed methods approach of qualitative interviews and quantitative experimental results, this study provides two contributions to the existing literature on new media and social influence. First, a qualitative examination of new media technologies is presented. This shifts the examination beyond the descriptions of these technologies and their influences commonly observed. Second, this study empirically examines the basic tenets of media synchronicity theory and how this theory may be applied to better understand group-level communications.

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II. Literature Review and Hypotheses

Because the objective of this study is to research the forms of new media messages being shared and their effectiveness on social influence, the literature review starts with a description of computer-mediated communication (CMC) and the resulting new media technologies that have gained popularity with the explosive growth of the Internet. The literature review continues with an in-depth look at one particular type of new media; social network sites (SNS). By integrating a wide variety of devices, processes, and activities, SNS is the embodiment of new media technology. The next part of this chapter will discuss theories of social influence. While social influence is broadly defined by Guadagno and Cialdini (2005) as a change in one's attitudes, behavior, or beliefs, this study will focus on individual behavior change. Media Synchronicity Theory (MST) and its five functionalities of media will be introduced. Social network sites will also be characterized according to MST. At the end of the literature review, a series of hypotheses will be presented that utilize media synchronicity theory to propose that the effectiveness and social influence of messages communicated via social networking sites are greater than the effectiveness and influence of messages transmitted by face-to-face (FTF) communication. Figure 1 is a graphical illustration of the topics that will be discussed within this chapter.

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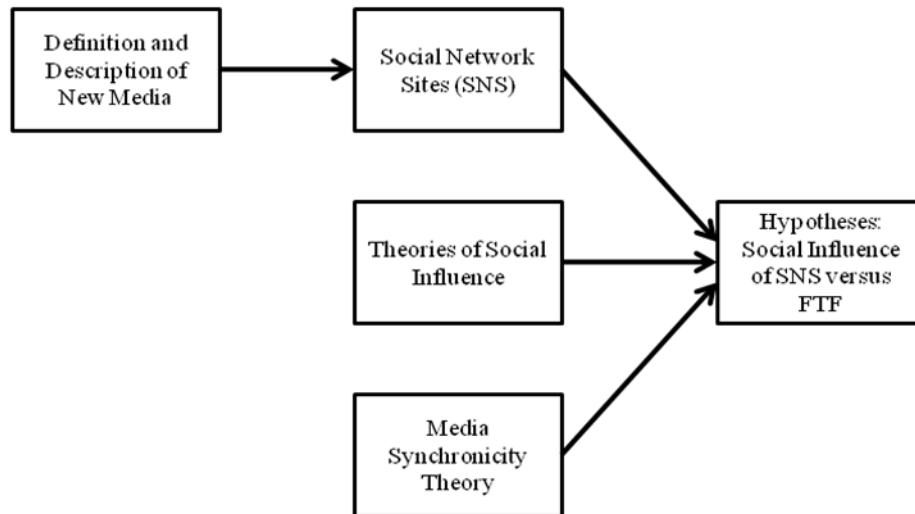
Figure 1. Graphical Illustration of Topics to be Discussed Within Literature Review

Definition and Description of New Media

Over the past few decades, new types of information and communications technologies (ICTs) have worked their way into everyday life for people all around the world. "A variety of media technologies, forms, and content, often lumped together under the single rubric of 'the Internet', have become a commonplace part of work, education, leisure, culture, and politics" (Lievrouw, 2004:10). Unlike other types of media such as radio and television, there is no single method for interacting online. Social interaction on the Internet occurs with such a variety of different forms, such as chatting, video, and blogging, that it is difficult to draw broad conclusions about the implications of the new varieties of media (Lievrouw, 2004).

Even before the Internet became a ubiquitous part of society, networked computers enabled computer-mediated communication to occur. Essentially, computer-mediated communications rely on a variety of tools for selecting, capturing, shaping, and

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manipulating information (Lievrouw, 2004). Computer-mediated communication was not originally designed as a primary means of interpersonal interaction. The rise of the Internet in recent decades, however, has illustrated that computer-mediated communication tools are suited for this purpose (Lievrouw and Livingstone, 2006). As a result, a wide variety of information and communication technology known simply as 'new media' have been introduced.

Despite the fact that interest in new media has grown with the usage of the Internet, networked computers are not always considered the only significant form of new media technology. Wilson and Peterson (2002) believe that the various definitions of new media are flexible and open to refinement because of the rapid changes that are occurring within the field of new media studies. In their *Handbook of New Media*, Lievrouw and Livingstone (2006) broadly define new media as information and communication technologies and their associated social contexts. New media is comprised of three distinct components. The first are the *devices* that individuals use to communicate and/or convey information. The *activities and practices* used to communicate are the second element of new media. The final facet of new media utilizes devices and practices to develop *social arrangements or organizational forms* (Lievrouw and Livingstone, 2006). For the purposes of this literature review, new media is considered a 'new' subcategory of media that is represented by digital-based electronic media. When new media technologies are discussed within this study, examples are to include social network sites, weblogs, video sharing websites, e-mail, streaming media, personal websites, and text messaging.

The availability of new media has increased due to the development of several devices that are required for distribution of information. These devices include Internet-based news services; high capacity satellite, cable and computer networks; and computer-mediated communication such as e-mail, listservs, message boards, and instant chatting services. The use of new media also relies on the data storage capabilities offered by DVDs, CD-ROM, servers, and flash drives. The decentralized channels of message transmittal allow users to become more involved in the communication process. This also offers individuals the flexibility to determine the form and content of messages (Lievrouw and Livingstone, 2006).

New media messages tend to have several activities and processes in common. Examples of these include the transmittal of entertaining, personalized, and customized messages. Processes that are credible and spark emotion are also important to new media technologies. Because new media technologies rely heavily on word of mouth, messages need to be entertaining otherwise they will not be forwarded (Armelini and Villanueva, 2006). Messages that are most likely to be forwarded spark strong emotions (Phelps et al., 2004) and should be "fun, intriguing, and capture the imagination" (Smith, 2005). Since new media has changed the behavior of communicators, variety and emotions are now being incorporated into text-based media. Examples of this include the widespread use of emoticons and acronyms (Haythornwaite, 2002). In addition to text-based messages, some new media technologies also make extensive use of audio and video. Videos are in fact one of the most effective tools to guarantee entertainment (Armelini and Villanueva, 2006).

Personalized messages are another common theme found within new media technologies. The dynamic nature of online forums allows direct interaction among participants (Aremelini and Villanueva, 2006). As people spend more time interacting online, they become more proficient at personalizing their messages. This is important because personalized and customized messages are considered more persuasive (Kalyanam et al., 2007, Armelini and Villanueva, 2006).

Credibility of messages is a key feature of new media. Because trust of peer recommendations is inherent to the online environment, individuals interpret online recommendations different than those received in face-to-face settings (Smith et al., 2005). Brass (2007) asserts that "the essence of the online world is trust." Word-of-mouth communications are seen to be credible, unbiased, and have implied endorsement (Stewart et al., 2001; Jurvetson and Draper, 1997). Credible messages are also more influential (Senecal and Nantel, 2002). As a result, trustworthiness is implied with new media and this therefore increases the effectiveness of online interpersonal interactions (Stewart et al., 2001).

Unique social arrangements and organizational forms have developed as a result of new media technologies. Society's resistance to new media technologies is disappearing, as illustrated by a recent survey that found that 45% of participants 18 to 54 year olds would choose the Internet as their first choice of communication medium if they could only choose one (Cho and Khang, 2006). It is generally agreed upon by experts that young people view technology as omnipresent and they are pushing and adapting new media technologies to meet their growing expectations (Spero and Stone, 2004).

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Familiarity with new media has resulted in greater awareness and expectations of arrangements and forms that are both more expansive and more routine (Lievrouw, 2004). For much of the world, new media technologies are now embedded in much of everyday life.

User anonymity is another social arrangement that has developed as a result of new media. Many experts believe that the Internet creates a sense of anonymity in computer-mediated communications (Guadagno and Cialidini, 2005). While this occurred before Internet use became widespread, CMC has created the venue for anonymous situations to become more prevalent. The consequence is the possibility of multiple identities, increased personal privacy, a lower sense of social risk or accountability, and reduced control of access to and participation in online interpersonal interactions (Lievrouw and Livingstone, 2006).

Social Network Sites

In order to determine the effectiveness and influence of messages communicated by social network sites, it is first necessary to present the definition and unique characteristics of SNSs. SNSs are defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd and Ellison, 2007:2). SNSs such as MySpace and Facebook are used by millions on a regular basis. Created in 2004, Facebook had by 2007 more than 21 million registered members who generated 1.6

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billion page views each day (Ellison et al., 2007). While Facebook is considered more popular among students, MySpace has more total users. In the United States, MySpace is the most visited website, even surpassing Google in page views (Thelwall, 2008). Thus, the immense popularity of SNSs has resulted in the development of new types of social arrangements and organizational forms such as online, virtual communities.

When compared to other information and communication technologies, SNSs are distinctive for several reasons. First, they are unique technologically because they embrace nearly all other forms of new media, integrating several diverse types of messaging. Common features include individual profiles, instant messaging, comment boards, chatting, photo-sharing, video-sharing, and blogging. There are also mobile-specific SNSs, as well as web-based SNS that support limited mobile interactions (Boyd and Ellison, 2007). Sites such as Facebook even allow users to create their own applications that further integrate new media technologies. SNSs have created an interactive "modern self-portrait" that features "background music, carefully manipulated photographs, stream-of-consciousness musings, and lists of our hobbies and friends" (Rosen, 2007: 15). Indeed, social network sites are a strong embodiment of new media.

Perhaps more importantly, SNSs are unique among CMC because they may allow individuals to exert influence over others. Essentially, these sites create online communities of people who share similar interests and activities (Wilson and Peterson, 2002). As more individuals join a particular SNS community and actively participate in online interactions, the value of any particular community increases (Jurvetson and Draper, 1997). A sense of shared identity emerges within this community that increases

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the ability of individuals within it to influence one another (Guadagno and Cialdini, 2005). This is critical to team function because of its impact on cooperation, commitment to decisions, and levels of trust (Martins et al., 2004).

Social network sites are distinctive because their processes allow members to express their individuality. Compared to traditional text-based computer-mediated communication, virtual worlds such as those created within SNSs drastically alter the nature of online interpersonal interaction. By including photographs on their profiles, SNS users are more susceptible to social influence (Guadagno and Cialdini, 2005). In today's society, an individual's identity is developed with multiple forms of media and these social and professional identities are continuous across these different media (Wilson and Peterson, 2002). Thus, because online communities are often significantly different than their offline counterparts, it may be possible for social network sites to actually enhance one's individuality.

The public nature of these sites further enhances an individual's ability to exert influence (Boyd and Ellison, 2007). Subramani and Rajagopalan (2003) posit that individuals are more likely to conform to a particular person's influence attempts when their behavior can be observed by that individual and others in their social network. In public settings, attitudes are also more likely to guide thought and action because receivers in public actually believe influencers have surveillance over responses. This is in contrast to private settings where the recipient is not aware of the influencer's judgment (Wood, 2000). Indeed, identifiable individuals are more likely than anonymous

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individuals to adhere to group norms and commitments when self-presentational concerns are considered most important (Cialdini and Goldstein, 2004).

Theories of Social Influence

   "Social influence, sometimes referred to simply as influence, refers to the change in one's attitudes, behavior, or beliefs due to external pressure that is real or imagined" (Guadagno and Cialdini, 2005:4). Attitude change is also known as persuasion while behavioral change is defined as compliance. When faced with a sender's influence attempt, targeted receivers have three core motivations that drive their attitudes and behaviors. These goals include a drive to be accurate, to affiliate, and the maintenance of a positive self-concept. Attitudes and behaviors resulting from social influence can simultaneously strive to attain several of these goals at once (Cialdini and Goldstein, 2004).

   Compliance is a change in behavior that is the result of a social influence attempt (Guadagno and Cialdini, 2005). In other words, compliance is acquiescence to a request. Sender's requests may be either explicit or implicit. For compliance to occur, the target receiver must realize that he or she is under pressure from a sender to respond in a desired manner (Cialdini and Goldstein, 2004). Six fundamental principles of influence explain an individual's tendency to comply with an influence attempt. These principles are reciprocity, commitment and consistency, social proof, liking, authority, and scarcity (Cialdini, 1984). The rule of reciprocity requires that a person try and repay what another has provided. The principle of commitment and consistency is the result of an

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individual's desire to look consistent with their words, beliefs, attitudes and deeds.

Social proof is a behavioral shortcut that is based on the observed behaviors of others.

The principle of liking is based on the concept that there are certain personal factors

and/or attributes that individuals find attractive. Authority influences because of society's

tendency to obey legitimate authorities. The principle of scarcity stems from an

individual's tendency to value opportunities more when they are less available (Cialdini,

1984). By understanding these six principles, it is possible to determine an individual's

likelihood of behavior change.

A type of social influence called persuasion involves an individual's changes in

private attitudes or beliefs as a result of receiving a message (Guadagno and Cialdini,

2005). Attitudes are social phenomena that are the result of social interaction. As a

result, interpersonal communication is a prerequisite for persuasion (Phelps et al., 2004;

Kalyanam et al., 2007). How the persuasion process occurs is be explained by the Dual

Process Models of Persuasion. This model illustrates two primary ways in which

individuals process information. Individuals either process information centrally or

peripherally (Guadagno and Cialdini, 2005). In central route persuasion, the focus of the

target is on the content of the message and factors such as the quality of the argument.

Central route persuasion is used in situations such as when the topic is important to the

receiver. Decision cues and rules of thumb, known as heuristics, are used by individuals

in peripheral route persuasion. In this case, such as when the topic is not well understood

by the receiver, the quantity of persuasive arguments may be more influential than the

quality of the argument (Guadagno and Cialdini, 2005). Thus, the effects of a persuasion

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attempt are dependent on whether an individual has processed with either central or peripheral route persuasion.

Recently, there has been increased interest in studying the effects of the online environment on social influence. This research is essential to understanding the influence of social network sites. While Senecal and Nantel (2002) point out that an individual's susceptibility to face-to-face interpersonal influence is positively correlated with their susceptibility to online influence, interpersonal influence attempts may or may not operate differently in an online environment. Factors that determine these differences include the nature of the influence attempt, whether the attempt is interactive or static, the amount of prior exposure between the sender and receiver, and whether the interaction is between members of the same ingroup (Guadagno and Cialdini, 2005).

When compared to face-to-face communication, the online environment lacks many social cues such as eye contact, body language, tone of voice, and facial expressions. Because of this, several individual communicator cues present in FTF interactions are less significant online (Guadagno and Cialdini, 2005). For example, it is important for targets to like the influence agent in FTF appeals. Liking has less of an impact on attitudes and behavior in computer-mediated communication (Guadagno and Cialdini, 2005). Other individual characteristics such as status and expertise are also less salient in CMC appeals when compared to FTF (Guadagno and Cialdini, 2005). These characteristics don't necessarily make CMC better or worse at influence than FTF, but rather they provide a different set of opportunities and challenges in the online environment.

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While the social influence literature supports six principles that increase the success of compliance attempts, only two of these principles have been investigated for their effect on computer-mediated behavior change. The first compliance principle to be discussed is authority and it varies dramatically between FTF and CMC. Dubrovsky et al. (1991) showed that while high status group members can maintain their authority positions in face-to-face communications, the effects of status cues are decreased online. Because of this, high-status and low-status influence agents were both equally likely to cause behavior change. Guegen and Jacob (2002) conducted another study and found that status can result in higher compliance online when the influencer is a high-status group member. The difference between the two studies is the way messages were processed. There is a need for further research, but "it appears that authority is successful in increasing compliance in online groups when it is used as a decision heuristic, but is far less influential when present in an interactive discussion" (Guadagno and Cialdini, 2005:21).

The second compliance principle to be examined is commitment and consistency. Even though there are many methods to influence commitment and consistency, only the foot-in-the-door technique has been empirically tested in CMC. This technique relies on first asking for a small request and then following up with more substantial requests. Because it relies on consistency motives instead of influence agent characteristics, the foot-in-the-door technique has been found to be effective in several computer-mediated contexts and specifically with e-mail and chatting (Guadagno and Cialdini, 2005). Thus,

it appears that the compliance principle of commitment and consistency is effective in both online and FTF situations.

Research into online persuasion has looked at both interpersonal and non-interactive communications. Both need to be examined because social network sites can be either interpersonal or non-interactive. Non-interactive persuasion has been found to be similar to written text-based influence attempts. Because of this, information is most likely to be processed centrally where the focus is on message content rather than the message source (Guadagno and Cialdini, 2005). While there are differences in the ways messages are processed, there is no difference in persuasion between CMC and FTF when the influence appeal is non-interactive (Guadagno and Cialdini, 2005). Interactive online persuasion attempts have been found to be dependent on the gender of the message receiver. Factors such as social cues, likeability, knowledge, trustworthiness, influence agent-target commonalities, and competition all impact the effectiveness of persuasion attempts differently for men and women. However, a sense of merged identity or oneness was found to increase online persuasion regardless of gender (Guadagno and Cialdini, 2005). So, while CMC and FTF have little persuasive difference in non-interactive settings, it is important to consider the gender of the receiver in interactive situations.

The existing research that examines the extent to which online media can be used to influence others is limited because it overlooks the technological and social features of new media. Technological advances, for instance, have allowed individuals to use intricate graphics and elaborate virtual worlds to convey the salience of any particular message, increasing their potential influence. From the social perspective, Guadagno and

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Cialdini (2005) argued that research to date has failed to appropriately reflect the types of interactions one might have. Past research has shown that computer-mediated influence appeals tend to have an increased internal focus and thus function similar to traditional text-based influence attempts (Guadagno and Cialdini, 2005). This is not necessarily an accurate view of today's online interactions whereby people typically communicate with those that they are building relationships with or already have established relationships (Guadagno and Cialdini, 2005). This is especially true with the unique social arrangements and organizational forms found on social network sites, opening the possibility that SNSs are more influential than the other forms of computer-mediated communication that have been researched in the past.

Media Synchronicity Theory

Media richness theory (MRT) was developed in the late 1980s to help explain why managers selected various mediums of communications under situations of uncertainty or equivocality (Daft et al., 1987). Over the years, MRT has become an influential model to explain managerial choices related to communication media (Maruping and Agarwal, 2004). Media richness theory explains which type of communications medium should be most effective for a given situation (Dennis and Valacich, 1999). According to MRT, the richness of the medium should match the needs of the message in order to enable effective communication (Lengel and Daft, 1988).

Daft et al. (1987) suggests that there are two distinct types of situations that influence information processing. The first is the concept of information being utilized to

reduce uncertainty. This implies a situation that has an established method for processing messages, but there is an absence of information. In uncertainty conditions, leaner forms of media are preferred. The second type of communication situation is one of equivocality, or the existence of multiple and conflicting interpretations for a given message. For tasks of equivocality, the receiver can't decide what input generated a given output. Because the output provides the possibility of two or more inputs, the recipient must decide which of the possible meanings are the most appropriate. Resolving equivocality is both a social process involving interpersonal communication and a solitary process requiring the individual sensemaking (Weick, 1979). Since individuals must individually interpret the situation from vague cues and negotiate a solution, types of communications media with higher richness are most appropriate (Daft et al., 1987). Thus, the media richness needed depends on whether the message is transmitted in situations of uncertainty or equivocality. Figure 2 ranks types of media according to the media richness theory.
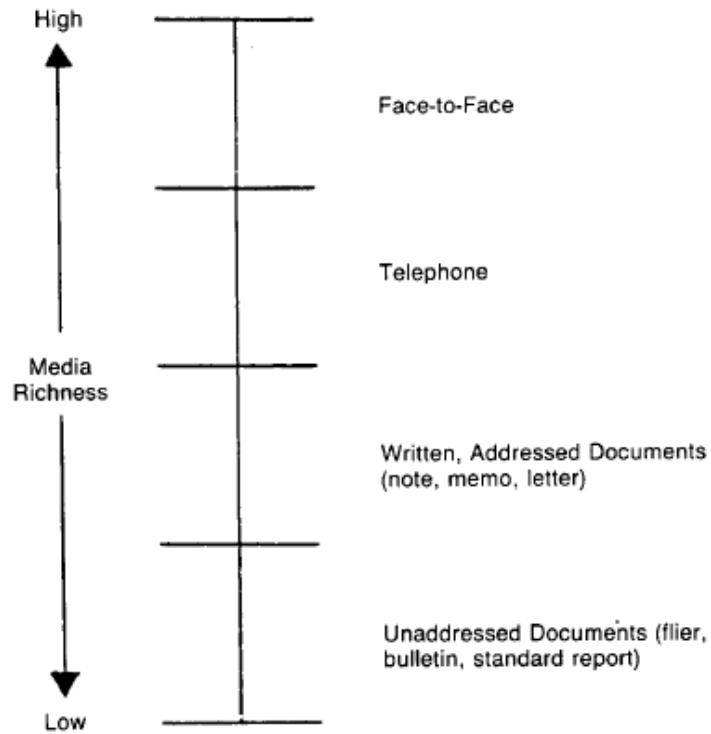
Figure 2. Hierarchy of Media Richness (Daft et al., 1987).

Because MRT emphasizes that message effectiveness depends on the specific

medium used, it is important to have a clear understanding of the hierarchy of media

richness. As shown in Figure 2, face-to-face is considered the richest medium. This is

because FTF "has the capacity for direct experience, multiple information cues,

immediate feedback, and personal focus" (Lengel and Daft, 1988:226). The telephone

medium is less rich because it lacks visual cues and body language. Written, addressed

documents can be personally focused, but they have limited cues and slow feedback.

Unaddressed documents are the leanest because they are not focused toward any

individual (Daft et al., 1987).

In the two decades since Daft et al. proposed the media richness theory, there have

been revolutionary advances in communication technology; specifically in the areas of

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computer-mediated communication and new media. While MRT is widely applied, it was developed before the widespread use of electronic media (DeLuca and Valacich, 2006). Thus, many scholars have argued that these advances justify a reconceptualization of the media functionalities presented in MRT. A new theory was needed to provide greater insight into the effectiveness of various emerging and traditional media. The resulting media synchronicity theory acts as an extension of the existing media richness theory (Maruping and Agarwal, 2004). In the research literature, MST has been empirically tested and supported (Dennis et al., 1998; DeLuca and Valacich, 2006). This is important because MST will be used as the theoretical basis for arguing that social network sites are more effective at communication and thus more influential than face-to-face communication.

In accordance with media synchronicity theory, interpersonal communications involve two processes designed to resolve equivocality, namely, conveyance and convergence (Dennis and Valacich, 1999). Conveyance is the exchange of previously unknown information with the goal of obtaining as much information as possible in order to better understand a situation. The second communication process is convergence on a shared meaning of that information. This requires individuals to reach a common understanding in addition to mutually agreeing that they have this understanding. While a common understanding may be needed before influence can occur, convergence is not social influence. Conveyance is increased as multiple and simultaneous communications exchanges are allowed, while convergence is enhanced when individuals focus their communication onto a single issue (Dennis et al., 1998).

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MST proposes five distinct dimensions that are related to the ability to communicate effectively (Dennis and Valacich, 1999). These media characteristics are immediacy of feedback, symbol variety, parallelism, rehearsability, and reprocessability. Immediacy of feedback is the synchronicity, or the ability of users to provide rapid feedback of the communication medium. Symbol variety is the number of ways, to include multiple cues and language variety, that information can be communicated within a given medium. The number of effective simultaneous conversations permitted is parallelism. Rehearsability is the extent to which the media allows messages to be rehearsed and edited prior to sending. The final dimension proposed by MST is reprocessability. This is the ability of a medium to maintain a history or memory that allows messages to be reexamined or processed again.

Conveyance is increased in mediums that allow multiple and simultaneous communications exchanges, while convergence on a shared meaning is enhanced when individuals can focus their communication onto a single issue (Dennis et al., 1998). Thus, MST recommends that media with low synchronicity (low feedback and high parallelism) be used for conveyance conditions. High synchronous forms of media, i.e. high in immediacy of feedback and low in parallelism, are considered most appropriate in convergence situations (Dennis and Valacich, 1999). The categorization of several forms of media according to MST is shown in Figure 3.
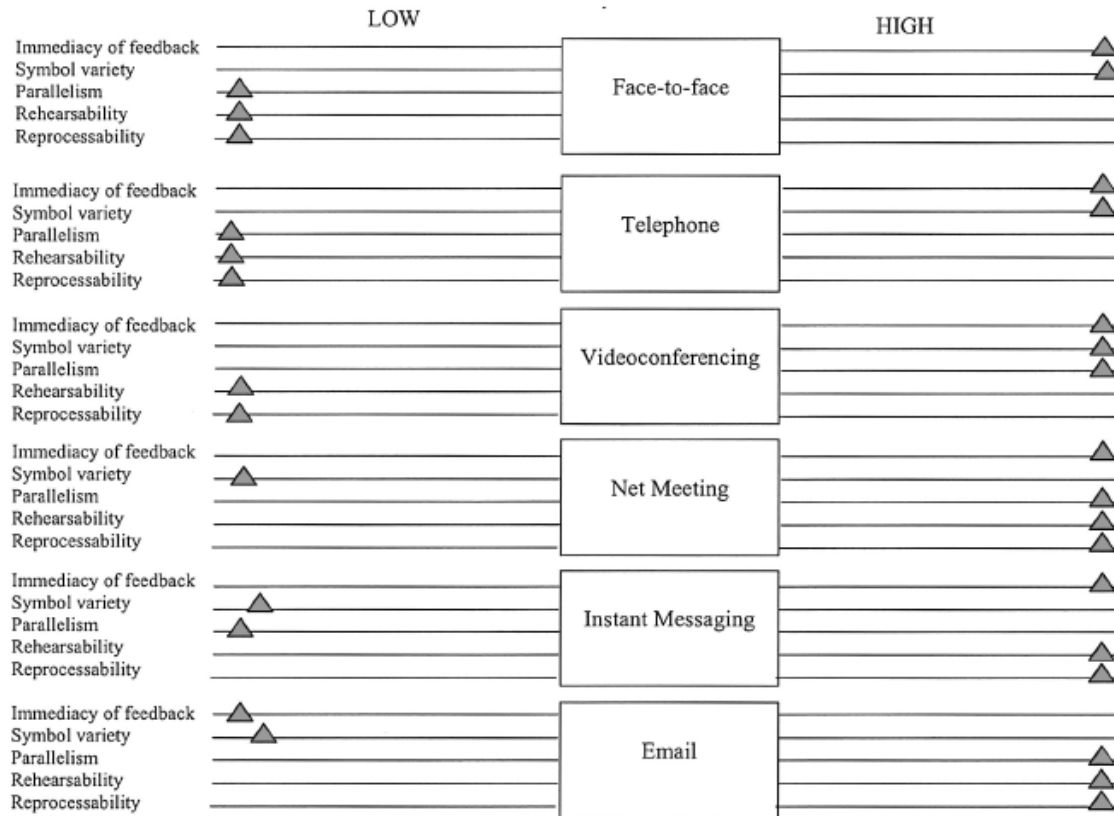
Figure 3. Illustration of Media Synchronicity Theory (Maurping and Agarwal, 2004).

Both media richness theory and media synchronicity theory suggest that communication mediums can be placed on a relative continuum of richness that ranges from low to high. This is shown for MST in Figure 3. MST expands on MRT by providing three key differences. First, no medium is high on all five dimensions of MST, so none can be considered the richest for all situations. Second, it is possible for media to have different sets of capabilities that are dependent on various uses and situations. Thus, while Figure 3 provides a generalized categorization for several ICTs, these may vary as a result of specific configurations and uses. Third, ranking media on a scale as shown in Figure 2 is unrealistic. The richest medium is the one that best provides the set of

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capabilities required by the situation. Using this logic, face-to-face communication

cannot be considered the richest form of media (Dennis and Valacich, 1999). Thus,

media synchronicity theory argues that there is a need for multimedia applications that

optimize conveyance and convergence processes (Dennis et al., 1998; Dennis and

Valacich, 1999; DeLuca and Valacich, 2006).

Categorization of Social Network Sites

In order to compare social network sites to face-to-face communication, it is first

necessary to characterize SNSs according to media synchronicity theory's five

dimensions: immediacy of feedback, symbol variety, parallelism, reprocessability, and

rehearsability. Per MST, immediacy of feedback represents the synchronicity of the

medium (Maruping and Agarwal, 2004). When compared to media such as face-to-face

and the telephone, many forms of traditional computer-mediated communication are

considered to have low immediacy of feedback. This doesn't mean that all forms of

CMC have low immediacy of feedback. Postmes et al. (1998) argue that networked

computers have achieved the functionality of face-to-face communication. In fact, "the

CMC medium can be highly socially engaging, with the potential to become quite

intimate or hyper-personal'" (Postmes et al., 1998:698). Rafali and Noy (2005) also

claim that certain types of CMC can actually create a sense of intimacy and immediacy

for users.

Of the forms of CMC in existence today, media such as e-mail, newsgroups,

message boards, and blogs are considered asynchronous media. Synchronous types of

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media include chat-like functions, multi-user places elaborately constructed through text, instant messages, and graphic user worlds (Lievrouw and Livingstone, 2006). Social network sites combine asynchronous and synchronous types of media which allows users to select the best method for achieving immediacy of feedback for a given situation. Thus, social network sites have the capability to be either high or low in immediacy of feedback.

Symbol variety is the availability of multiple cues and language variety supported by a given medium (Maruping and Agarwal, 2004). Due to recent technological advances, the computer is now capable of performing any form of mediated communication (Postmes et al., 1998). In fact, computer-mediated communications can sustain rich communication not only between pairs, but among participants of entire communities (Haythornwaite, 2001). According to Maruping and Agarwal (2004), symbol variety can be manipulated by including voice and video in communication versus text-only messages. As discussed earlier, social network sites provide users the opportunity to engage in communication with text, video, and music. While text-based communications often lack many social cues, video and music have the capability for multiple cues. Because SNSs allow competent users to integrate several types of new and traditional media, social network sites are high in symbol variety.

Parallelism, as described by MST, explains the ability of a medium to permit multiple simultaneous conversations. While audio communication restricts individuals to only one conversation at a time, mediums such as instant chat enable multiple communication to occur concurrently (Maruping and Agarwal, 2004). Instant messaging

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has low parallelism because it involves communication between only two individuals, while chatting allows messages to be simultaneously shared by several people. Since SNSs contain both low-parallel instant messaging and high-parallel chat features, social network sites have the capability to be either high or low in parallelism.

Rehearsability is the ease with which messages can be rehearsed and edited prior to transmittal. As illustrated in Figure 3, text-only communications mediums enable higher rehearsability (Maruping and Agarwal, 2004). With the other four dimensions being equal, highly rehearsable messages are considered more effective than those with low rehearsability (Dennis and Valacich, 1999). Text-based messages combine the capacity to edit and an additional visual channel of communication. The result is better organized and better thought out statements when compared to messages transmitted face-to-face. The ability to read and respond to messages in one's own time also expands the potential for interpersonal engagement (Lievrouw and Livingstone, 2006). However, consistent with prior research on virtual teams (Martins et al., 2004), rehearsability is a double-edged sword that increases communication quality at the expense of increased time and effort (DeLuca and Valacich, 2006). SNSs primarily rely on text-based messages, while their audio and video capabilities maintain the capability to rehearse and edit prior to posting. Thus, social network sites are high in rehearsability.

Reprocessability is the ability to maintain a history or memory of communication. Text-only communication mediums typically provide a record of all communications (Maruping and Agarwal, 2004). A characteristic of computer-mediated messages is the ability to be stored in memory, replicated, and retrieved at later dates (Lievrouw and

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Livingstone, 2006). As all SNS messages are computer-mediated, social network sites are high in reprocessability.

With social network sites now characterized according to MST as high in all five dimensions, it is possible to propose a series of hypotheses. These will compare and contrast the conveyance and convergence effectiveness, and ultimately the social influence, of SNS messages against those communicated via FTF.

Hypotheses

Before listing hypotheses, it is necessary to illustrate the rationale for comparing social network sites to face-to-face communication. In order to judge their effectiveness as a communications medium, computer-mediated communications are typically compared with face-to-face communications. FTF is the basis for comparison because many communications theories, such as social presence theory and Deft et al.'s (1987) media richness theory, consider FTF to be the richest medium. Even as recently as 2006, Lievrouw and Livingstone have argued that FTF is the basis of comparison for computer-mediated communications.

Because of computer-mediated communication, researchers have begun to question the long-held assumptions and biases about traditional face-to-face communications. Is FTF effective because of the presence of physical features or the immediacy of feedback? New media challenge the traditional school of thought that face-to-face interactions, physical proximity, and nonverbal communication are required for effective interpersonal interaction (Bargh and McKenna, 2004). Thus, studying the social

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influence of online communication and new media provides the opportunity to further the body of knowledge for both FTF and computer-mediated communications.

Given that FTF is the basis of comparison for computer-mediated communication, hypotheses relating to social network sites will be evaluated against face-to-face communication. The first step to resolving equivocality is the conveyance of information, thus lower synchronicity media are best suited for this purpose (Dennis and Valacich, 1999). MST suggests that mediums which have low immediacy of feedback and high parallelism are most effective in conveyance situations (Dennis and Valacich, 1999). SNSs combine asynchronous and synchronous forms of new media which allow users to select the best medium for communication. SNSs allow users to transmit messages using new media technologies such as e-mail, message boards, and blogs that would be considered low synchronous applications with low feedback and high parallelism according to media synchronicity theory. In contrast, face-to-face communication is characterized as a medium that is high in feedback and low in parallelism (Maruping and Agarwal, 2004). Thus, SNSs should more effectively convey information when compared to face-to-face communications.

> _H1_: _Social network sites will be more effective at conveyance of information than face-to-face communication._

The conveyance of information and the convergence on a shared meaning are considered equally critical in certain settings. Consider instances when groups are trying to resolve problems and enact a coordinated remedial strategy. Incorrect conclusions regarding a problem may be drawn when inadequate information is conveyed.

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Additionally, groups cannot move forward with coordinated actions and efforts without adequate convergence (Dennis et al., 1998). Thus, successful conveyance is a necessary precondition for convergence. That is, conveyance of information must occur before individuals can use the sensemaking strategies of deliberation and affiliation that make up the process of convergence. If conveyance is low, there is little chance for effective convergence. Consequently, conveyance increases the ability to converge on a shared meaning. Based on this idea, it is hypothesized that conveyance will be positively related to convergence.

> *H2: The relationship between conveyance and convergence is positive.*

According to Subramani and Rajagopalan (2003:301), the unique capabilities of new media provide "a potent combination making influence in online social networks considerably more compelling and pervasive than in conventional interpersonal interactions". This highlights the possibility that certain forms of new media may, in fact, be equally or more influential than face-to-face communication. As a high synchronous media, face-to-face communication is considered by media synchronicity theory to be more effective for the convergence process of an influence attempt. However, SNSs give users the option of selecting asynchronous applications for message conveyance and then switching to synchronous applications for convergence. Dennis et al. (1998) found that groups applying media in the most theoretically appropriate way demonstrated greater group compliance. This demonstrates that both the sender and receiver need to converge on a shared meaning before influence can occur. Thus, high effectiveness of convergence leads to higher social influence.

When aggregated, the proposed hypotheses present a process model for the effects of information and communication technologies on social influence. This model is an important addition to the literature because it addresses several areas that have been lacking with existing research. These include conflicting perspectives of CMC vs. FTF, little study of interpersonal processes, and a lack of proven mediating variables (Martins et al., 2004). In essence, information and communication technologies that are most effective at conveyance and convergence will have the greatest social influence. Messages transmitted between individuals via social network sites potentially will have higher social influence than those messages sent via face-to-face communication. The proposed process model of the effects of information and communications technologies on individual social influence is presented in Figure 4.
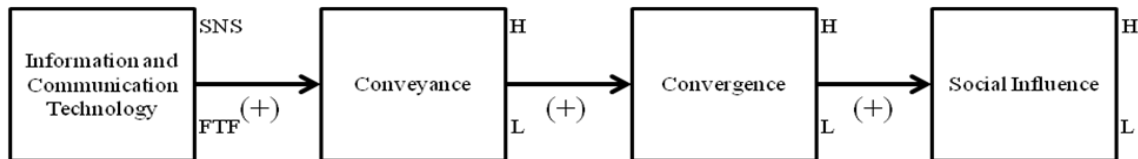

Figure 4. Process Model of ICT Effects on Social Influence

Summary

The following list is a brief summary of the key points in this literature review:

- The Internet has given rise to new media technologies that share several processes and characteristics such as personalization, credibility, and entertainment.

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- Social network sites are an increasingly popular medium for communications that combines several forms of new media devices, activities, and processes.

- Social influence refers to the change of an individual's attitudes or beliefs and several studies have investigated the differences in compliance and persuasion between face-to-face and text-based computer mediated communications.

- Media synchronicity theory expands on media richness theory by introducing five characteristics of a communications media and suggests that face-to-face interaction is not the most effective form of communication for all situations.   While social network sites share many characteristics with other new media, they also possess some unique features that diminish many of the disadvantages that traditional computer-mediated communication has in comparison to face-to-face interpersonal interaction.

This study suggests that social network sites have the capability to be high in symbol variety, high in rehearsability, high in reprocessability as well as either high or low in feedback, and either high or low in parallelism depending on the user's preferences in a specific situation. According to MST, face-to-face is only most effective for certain aspects, specifically the convergence process, of an influence attempt. Based on this discussion, it is argued that social network sites are a more effective and influential

communications medium than face-to-face interaction. The result is a process model that illustrates the effects of ICTs on social influence. Before this model was tested, a qualitative study was conducted to determine whether the hypotheses were plausible. It is suggested that social network sites may influence others as well as be viewed as a more effective communications medium than other mediums.

III. Qualitative Methodology

Research Design

This research took place over two studies and utilized a mixed methods exploratory design. This research design is considered most appropriate when testing the different aspects of an emergent theory (Creswell and Plano Clark, 2007). The purpose of study 1 was to use qualitative data to investigate the feasibility of the theoretical model presented in the previous chapter. The MST characterization of social network sites also needs to be validated. This was accomplished by asking young adults to describe their use of new media technologies and how they influence one another through them. Study 2 involved an experiment that tested the hypotheses and theoretical model. This chapter describes the methodology for the first study.

Participants

Eighty young adults aged 18 to 25 (18-21: 38.8% and 22-25: 61.3%) years participated in the qualitative study. These participants were closely linked to the educational community in East Lansing, Michigan. For those who chose to answer, the race/ethnicity of the participants was African American (27.5%), Caucasian (25.0%), Hispanic (23.8%), and Asian (15.0%). Participants were from the United States (62.5%) and as well as the Middle East (6.3%), Western Europe (6.3%), South America (6.3%), sub-Saharan Africa (3.8%), India (6.3%), and China (6.3%). Regardless of citizenship, participation was limited to those who qualified as heavy users of new media technology.

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Participants were prescreened to ensure that they had used a social network site, blog, video sharing site, or online product review within the last month.

Interview Protocol

This study focused on questions about the influence of social network sites. Researchers utilized a prepared general interview guide that consisted of general questions (See Appendix A for the interview protocol). The interviews discussed the habits, adoption, influences, and experience related to social network sites. The first set of questions asked participants to indicate who sends messages, what types of messages are sent, and the individual's reaction to those messages. The second set of questions focused on the use of social network sites to influence the opinions of others. Participants were also asked if they had tried to enhance other's opinions of themselves and if they had recruited others to join different groups. These questions helped determine what types of messages were being sent and sought out via social network sites and how those messages influence others.

Interview Procedure

Information was collected during one-hour in-depth semi-structured interviews. Each interview was video and audio-tape recorded. While participation was voluntary, each participant received a modest honorarium of $100. The interviews were designed to better understand why participants used new media technologies, focusing on the influence social network sites had. In addition, participants were asked to describe habits

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and experiences related to social network sites. The first set of questions asked (a) who sends messages, (b) what types of messages are sent, and (c) reactions to those messages. The second set of questions focused on the use of social network sites to influence the opinions of others. Participants explained whether they had tried to enhance other's opinions of themselves and whether they had recruited others to join different groups.

Data Analysis

Before any analysis, transcripts were checked for accuracy and then loaded into the computer assisted qualitative data analysis software Atlas.ti. Data were analyzed in accordance with the procedures outlined by Creswell and Plano Clark (2007). This program was selected because it provided tools that allow the researcher to locate, code, and annotate findings from the transcripts. During an exploration phase, transcripts were read to gain a general understanding of the information revealed.

Data analysis began with the initial identification of themes. These themes were identified during the exploration of data to reflect similar types of responses and their frequency. As the goal of study 1 was to investigate the feasibility of the theoretical model, themes were identified that related to the hypotheses presented in the model. The initial themes were *facets of media synchronicity theory*, *reactions to messages*, *using SNS to change opinions*, *strengths and advantages of social network sites*, *using SNS to influence others*, *recruiting groups*, *types of messages*, *who messages are sent to*, and *who sends messages*. Next, the themes were reviewed to determine how they related to the feasibility of theoretical process model. At this point, data contained under the four

themes of *recruiting groups*, *types of messages*, *who messages are sent to*, and *who sends messages* was either combined with other themes or discounted as not relevant to the study. The result was five themes that highlighted the capability of social network sites to influence others and also validated the researcher's original MST characterization of SNS. The five themes were *strengths and advantages of SNS*, *facets of MST*, *reaction to messages*, *using SNS to change opinions*, and *using SNS to influence others*.

The second round of qualitative data analysis assigned codes within the individual themes. First, the data units within each theme were analyzed for recurring patterns and ideas. Next, codes were developed by triangulating the data from several individuals. Triangulation was used to improve validity. Disconfirming evidence was also coded to enhance validation (Creswell and Plano Clark, 2007). For example, different types of reactions to messages within the theme *reaction to messages* were each given their own code. The codes assigned included "positive reactions to messages", "little or no reaction to messages", "reactions dependent on sender", and "happiness that senders are thinking about the recipient". As another example, the theme called *facets of MST* was coded into the individual dimensions represented by the theory. These were "parallelism", "immediacy of feedback", "symbol variety", "reprocessability", and "rehearsability". Finally, this process was repeated for the other three themes of *strengths and advantages of SNS*, *using SNS to change opinions*, and *using SNS to influence others*.

Once the initial coding was complete for each of the five themes, the data within each code was further reviewed for sub-coding. This was necessary because some codes were considered too broad for effective data analysis. First, each code was analyzed for

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possible sub-coding. Next, sub-codes were developed that represented units of text

within existing codes. This was particularly important for the codes within the theme

facets of MST. For example, the code "immediacy of feedback" was sub-coded into data

units that represented "high immediacy of feedback", "low immediacy of feedback", and

"strengths of asynchronous messages". While several sub-codes were assigned, it was

determined some codes such as "little or no reaction to messages" did not justify sub-

codes. Finally, the sub-codes and codes were reviewed to make sure that no new themes

had emerged from the data. After this third round of analysis was complete, it was

determined that the coded data effectively identified the themes, patterns, and ideas in the

participant responses that related to the feasibility of the theoretical process model. These

theme and codes would represent the basis for the discussion of the qualitative results.

IV. Qualitative Results

As discussed in the previous chapter, analysis of the interview data resulted in five themes that are related to the theoretical process model. These themes are *strengths and advantages of social network sites*, *facets of media synchronicity theory*, *reaction to messages*, *using SNS to change opinions*, and *using SNS to influence others*. Consequently, the results for each theme will be discussed separately.

Strengths and Advantages of Social Network Sites

Several respondents considered SNS to be faster than other communications mediums such as telephone, e-mail, and text messaging. When asked why they choose SNSs to send messages, Respondent #14 compared the service to text messaging. "It's just like why is text messaging so popular versus, you know talking on the phone…it's just faster [to use] and just more convenient". The existing contacts within social networks make communications faster according to Respondent #12 because "it's really quick and easy and I could have e-mailed her, but I don't know her e-mail, I would have had to look it up, and in Facebook, I go on it anyway, and it's just easy to find her name."

In addition to being faster, there are also many situations where respondents prefer to send messages with SNSs than face-to-face or over the phone. When individuals are pre-occupied with other tasks, Respondent #70 believed social network sites make communication "just so much easier…normally if I'm at work or in class I can't talk on the phone. So it's so much easier to just click and see what this person is doing and send them a message as opposed to actually finding some time to pick up the phone and call

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them or do whatever else." Many respondents tend to utilize SNSs when they want to send messages but don't want the time commitment and complications of communicating via the phone or face-to-face. It's "an easy way to communicate with others and to cop out of actually picking up the phone" according to Respondent #80. Respondent #53 said SNSs are often the medium of choice when "you'll have times that you really don't want to talk to someone, but you want to see what's going on." Facebook was also considered by that respondent as the most effective medium when "you don't have a lot to say."

Several individuals reported that SNSs made it easier for them to express their true feelings to others. According to Respondent #18, "it's easier to talk on the phone than it is in person. To say something important. It's even easier to type it than it is to say on the phone." Respondent #24 reported that "it's easier to write somebody and tell them how you feel than tell them in the face how I feel about you". It appears that new media technologies such as SNSs also make it easier for some to express feelings to even strangers.

> "…they could easily express their feelings, to share their feelings but not only for their friends but for even those people they don't know. And those people could react to their feelings. Give them some suggestions…This is the most attractive thing for the users because they don't know who reacted their feelings or their articles or their videos" (Respondent #47).

The interview data suggests that many people would rather send personal messages electronically, whether the recipient is a friend or a stranger, as opposed to using other mediums such as face-to-face and telephone.

Another advantage of social network sites is the network of friends. As more people start to use SNSs, Respondent #25 reported that "everyone wants to be a part of it.

Everybody uses it, so it's a more convenient way of contacting them, instead of e-mail, because for some reason, some people check their Facebook more than their e-mail." Respondent #76 said "it is a great way to keep in touch with people who aren't in your immediate locale", so it appears that SNSs give individuals access and the capability to communicate with a social network that is continually expanding in size. Thus, respondents have indicated several strengths and advantages of using social network sites as a communications medium. The data has shown that SNSs can be faster and easier to use in certain situations. Many find it easier to express their feelings via SNS. Finally, the social network allows people to stay in contact with more friends while at the same time encouraging more individuals to use the service.

Facets of Media Synchronicity Theory

Examples of all five facets were found in the data, and the results validate the assumptions made about social network sites in the literature review. The characterizations were that SNSs are either high or low in parallelism, high or low in immediacy of feedback, and high or low in symbol variety, reprocessability, and rehearsability. There were many quotes from respondents that supported SNSs as high in parallelism. According to Respondent #26, "it was just more convenient just to type it up and press a button and send it to everyone instead of calling everyone." While the data supports SNSs capability of maintaining simultaneous conversations, social network sites also give users the low parallel option of sending individualized messages. Per Respondent #70, "you can send multiple messages or send them on…you can create a big

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thread between people. Or if you have a group…like if you're part of a group or part of an event, you can send messages to everybody that's part of the group or part of the event." Thus, SNS can have high parallelism when the situation prefers a message being sent to an entire group, or they can have low parallelism when the situation requires multiple personalized messages.

The respondents also supported the characterization of either high or low immediacy of feedback. Because people "can get their messages instantly" (Respondent #73) and "when you want, whenever you want pretty much anywhere" (Respondent #52), SNSs clearly have the capability of being high immediacy of feedback. Respondent #19 claimed that SNSs have higher immediacy of feedback than even talking on the phone. "Because people might go on there that I'm talking with…and so instead of just asking hey how are you on the phone, they can just automatically see, this is how I'm feeling right now." However, the low immediacy capabilities of SNSs were also highlighted.

> "Being able to send a message to somebody without having to hold a conversation with them, like how you doing, without actually having to call him. You can…talk to people without them responding back. I think that's kind of cool, so you can get a message to somebody even though you can't get a hold of em" (Respondent #23).

In addition to supporting the characterization of low immediacy, many respondents reported that this was an advantage in some situations where one could "leave a message, [and] come back whenever you get the time" (Respondent #17). As a result, it is accurate to characterize SNSs as either high or low in immediacy depending on what is required by the situation.

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There was also data that supported the high symbol variety inherent to social network sites. Respondent #14 claimed "the original was just like text, now they got where you can put pictures, videos, YouTube, you know, music, whatever you want. Like pretty much you can anything you want to do." While there weren't any comments that compared the symbol variety of SNSs to face-to-face conversations, the interviews did confirm that Facebook had at least the same amount of symbol variety as cell phones. Respondent #34 admitted to "using Facebook as a cell phone to text people", while Respondent #35 felt that the service is "just like a cell phone actually." Thus, respondents were able to utilize the amount symbol variety they needed to effectively communicate their messages.

As opposed to communicating face-to-face, respondents also claimed to benefit from the high rehearsability and reprocessability of SNSs. "When you're typing it, you're more calculated as to how you want the words to come out. You can reread it. If you say it in person, you get one shot. You think back, 'Oh, I should have said it this way'" (Respondent #18). With SNSs, Respondent #14 stated "you could think about your thoughts and be more strategic with your message." Thus, the data supports SNSs being characterized as high in symbol variety, rehearsability, and reprocessability.

Reactions to Messages

Many respondents indicated that they had little or no reaction to messages sent via social network sites. For those that prefer face-to-face communications over SNS, the reactions were often unenthusiastic. Respondent #43 felt that "as far as getting any actual

personal communication on the sites it's much better in person, and it was just kind of an empty feeling." Others mentioned that they enjoyed receiving SNS messages, but they didn't elicit any specific emotions. According to Respondent #50, "I'm excited because I think it's cool we are still in contact, but not overly excited or anything."

While little or no reaction to messages was a common response, the data suggests that SNSs can cause positive reactions for some individuals. The most common responses were happiness, excitement, surprise, and laughter as a result of receiving messages on their SNS. For Respondent #30, "I'm always excited when I get something on MySpace because we don't get stuff very often so it's like, 'Oh, we got a message! Woo!'" People also get excited to receive messages because someone else is thinking about them. A few respondents indicated that their reaction to messages depends on the message sender. "If it's one of my friends, I'm okay. I'm eager to see it. If it's like an event reminder or something about a group, I get a little irritated" (Respondent #70). Thus, while not all individuals react to messages or have positive reactions to messages, SNSs do have the capability to make receivers excited when messages are transmitted by an appropriate sender.

Using Social Network Sites to Change Opinions

The data revealed mixed results as to whether individuals use SNSs to change others opinions of themselves. Nearly half of respondents said they don't attempt to enhance the opinions of themselves, while the other half did use SNSs for that purpose. Respondent #11 claimed that "I wouldn't say I really use it to make myself look cool"

while Respondent #27 said "that's one of the main things I do. Just make myself look cooler." The conclusion is that only some use SNSs to change opinions.

For those that do attempt to change the opinions of others, the data suggests that SNSs can be useful.

> "You can be online, and you can create an image of yourself or something that you are not, just based off your online. [For example], how you put yourself, how you put your page together, how you're speaking of yourself, how you speak of other people on your page, what people think of you" (Respondent #20).

The most common way to change opinions is through the pictures that users post on their profiles. When asked if they were selective with the pictures they posted, Respondent #72 remarked that "you have to. You don't want people to get a bad perception of you…You have to put pictures according to who you are or what you want to be perceived." Respondent #8 said "I don't want a picture online of me looking like an idiot so, yeah, I censor myself." Interestingly, people also tend to select pictures that are not harmful to their professional careers. For example, Respondent #35 said "I guess I'm trying to maintain a professional look. Because from what I hear, I guess employers look at Facebook now-a-days and stuff like that." Respondent #67 had this to say: "I would want to make sure the opinion that someone is going to give me that doesn't know me that happens to stumble upon my Facebook is not going to be negative." Therefore, the fourth theme highlights that some individuals use SNSs to enhance others opinions and the most popular method of changing opinions is the selective posting of profile pictures.

Using Social Network Sites to Influence Others

When directly asked, many participants responded that they don't use SNSs to influence others. However, the interviews did reveal several occasions where individuals had used SNSs for social influence. One of the most common uses of SNSs is to promote music. Respondent #43 admitted to "actually starting to use MySpace to help me influence my new music choices." In another instance of successful social influence, Respondent #20 "put a big bulletin up on MySpace, like Trace Alms CD is out, I went out and got it, it's a very good CD, go buy it. I had about 120 people go but it." The data suggests that many bands create SNS profiles to post bulletins, promote concerts, post new songs, and sell merchandise. These music-related profiles are successful at influencing the musical tastes of others.

Several people claimed to use SNSs as a supplement to other mediums in order to have more effective influence attempts. According to Respondent #28, "usually I find out through the people, but they do send the page on Facebook where they're hosting the event and all that." Respondent #39 declared "it's common to R.S.V.P. through Facebook so it's pretty effective." A conversation about sending invitations to a party revealed a case where Facebook was used in conjunction with e-mail.

> "We were having a hard time through just the regular emails and everyone knows that a lot of people use Facebook most of the time, at least once a day, so we figured that we would actually get the message across and make sure they would actually do it if they would see maybe five of us in that group. Then it would probably pressure them into actually doing the same thing" (Respondent #59).

In the end, the respondent maintained that they were "way more successful" at pressuring others with Facebook. When groups are hosting events such as parties, it appears that

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Facebook and MySpace are frequently used in conjunction with face-to-face, telephone, and e-mail to influence others into attending.

The data showed other examples of people who were influenced by messages sent via SNSs. When asked if they had ever influenced others, Respondent #70 replied: "Yeah. I've done that before. 'Send me a message on Facebook'…or write it on the event wall on Facebook. Sometimes I will encourage my friends…actually people will encourage me…so that will encourage me to go get them and post them." Respondent #61 admitted to being influenced by Facebook to attend parties because they "didn't know of these events before." Hence, SNSs enabled social influence by providing previously unavailable information. Social network sites also influence people's opinions of others. Respondent #51 liked how they could "see what kind of person she is so you know, you just go there and get an idea of what kind of person that is." Another individual used Facebook to ask for opinions on different types of females they preferred, and the post influenced 20 people to respond. With SNSs, social influence sometime occurs even when senders aren't actively attempting to influence others.

> "I mean putting down something like this is something I really like, you should listen to it and give a list of suggestions or you know…I have a strong opinion about something and I'm not forcing anyone to do anything or telling them they should, it's just passively suggesting, [it] may influence taste or idea on a subject" (Respondent #43).

Consequently, it appears that SNSs can be used to successfully influence others. From the interview data, the most common influence attempts were related to promoting music or events such as parties. SNSs are also effective when used in conjunction with other modes of communication.

Implications

        The results provide evidence to support the theory that social network sites can be used to successfully change opinions and influence others. SNS messages were shown to create positive reactions such as surprise, excitement, and happiness. The data also showed that SNSs have several strengths over traditional information and communications technologies such as speed, convenience, and ease of sharing emotions. Collectively, these findings suggested that media synchronicity theory was an appropriate framework to assess the effects of information and communication technologies on social influence. In particular, the qualitative results suggested that the varying degrees of synchronicity embedded within the SNS applications (e.g., e-mail, message boards, or instant messaging) might influence conveyance and convergence communication processes. Accordingly, a second study was conducted to test the relationships that were hypothesized in Figure 4.

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V. Experimental Methodology

Research Design

In order to test the hypotheses and theoretical model presented in the literature review, study 2 was performed as a laboratory experiment. In this study, two communication conditions were compared to determine the effects SNSs had on social influence; these were face-to-face communications and social network site communications. The research design was selected because of the numerous advantages that are inherent to experimental research. "The primary strength of experimental research is precision and control; its primary purpose is to test and extend theory" (Dennis and Valacich, 2001). By having precise control over variable manipulation, error variance is reduced. This type of design has the ability to infer cause as well as manipulate experimental variables, thus leading to causal relationships that support or refute theory.

Participants

Participants included 149 undergraduate students from a large Midwestern university aged 18 to 25. The overall sample was 54% female. SNS groups were 60% female while FTF groups were 47% female. Consistent with the qualitative study, participants were screened to ensure they all had a minimum level of knowledge and self-efficacy regarding the use of Facebook (this test was pilot tested prior to its administration). After they were screened, participants were randomly assigned to one of 31 groups with five members each to complete the experimental task. Groups had five members because it was felt that there would not be enough variance in initial opinions

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with groups smaller than five. Variance in initial opinions was needed for social influence to occur. Each of the groups was then randomly assigned one of two conditions to complete: 13 of the groups (62 participants) completed the task by communicating face-to-face and 18 groups (87 participants) completed the task utilizing a social network site. The data was collected between November 21 and November 25, 2008 as well as on December 4, 2008.

Power Analysis

While participants were assigned to groups during the experiment, the analysis was performed at the individual-level. For this experiment an a priori analysis was performed to establish the sample size needed to achieve a power of 0.8. The experiment assumed an alpha level of 0.05 for a one-tailed test. Cohen's d was set to 0.8 which is similar to an R^2 of 0.3. Using these values in the power analysis software Gpower, the required sample size for the independent t-test was calculated to be 42 individuals.

Task

The task required participants to rank-order a set of options for a potential new restaurant near campus. Participants were given eight alternatives and told that they were business consultants advising the restaurant owner. They were instructed to provide the best advice for maximizing the owner's returns on the new venture. Four different types of restaurants with four different price points were considered. This type of task was selected because the information had several interpretations that needed to be resolved; in

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addition, the participants were expected have some degree of familiarity with the local restaurant environment. As participants were expected to take a personal interest in the task, they would be more inclined to support and defend their opinions of the alternatives.

When using four restaurant types and four price points, the result is sixteen possible alternatives. Given the time constraints of the experiment, it was felt that participants would not have enough time to consider and discuss each of the alternatives. Therefore, the original task was pre-tested with 30 MBA students. Their answers were aggregated and the standard deviation for each alternative was calculated. In order to test the effects of communication medium on social influence, there needed to be equivocality among the participant's pre-discussion choices. To generate this equivocality, the eight alternatives with the highest variance in the pre-test were selected for the experimental task. The task given to participants is illustrated in Figure 5.

Type of Restaurant	Price Point
Mexican	$5-$7
American	$14-$16
American	$5-$7
Chinese	$14-$16
Italian	$14-$16
Italian	$11-$13
Chinese	$5-$7
Italian	$5-$7

Figure 5. Task Information

Measures and Manipulations

It was hypothesized that information and communications technologies have a relationship with social influence by impacting the effectiveness of convergence through

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conveyance. In order to test this model, face-to-face communications were compared to computer-mediated communications (i.e., communicating through a social network site, Facebook). Because face-to-face communication is commonly considered as the control for computer-mediated communications (Lievrouw and Livingstone, 2006), it was used in this study. The second medium was the social network service Facebook. According to the qualitative results in study 1, Facebook and MySpace are by far the most popular social network sites. However, young adults prefer Facebook over MySpace for several reasons. Facebook is widely considered as more mature, easier to use and easier to introduce than MySpace. Facebook's layout is regarded as less cluttered and simpler than MySpace, thus making it easier to find people on Facebook. Finally, Facebook is considered more closely connected to academic communities. Because the experiment was held on a university campus, it was assumed that participants would be more familiar and comfortable using Facebook than MySpace.

Facebook users communicate through the use of applications. These applications utilize many different forms of new media such as video sharing, blogging, instant messaging, and message boards. Since Facebook allows users to create their own applications, there are literally thousands of applications to choose from and the number is increasing every day. In addition to the user created applications, there is a suite of applications that have been developed by Facebook. They are automatically added when an individual sets up a new account, so users are most familiar with these applications. For this study, participants were limited to using the following applications: messaging, chat, photos, video, posted items, notes, events, groups, discussion board, and wall. In

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essence, the messaging application is the same as electronic mail. The chat application is similar to instant messaging services such as AOL instant messenger (AIM). The photo and video applications allow members to post photographs and video to their profiles. Posted items, notes, and the wall are similar to ICTs typically found on blogs. The events and groups applications are used to organize members of an individual's social network. Finally, the discussion board application is modeled as a message board.

The study contained three dependent variables. Each was self-reported by the participants. In order to control for common method bias, the variables were measured at different times in the experiment (Podsakoff et al., 2003). Dependent variables such as decision accuracy and commitment to the group decision were considered, but previous studies have found that these variables do not significantly vary based on communications medium (Dennis et al., 1998).

Conveyance.

To measure conveyance, the study recorded the number of unique ideas generated by the group members. This was operationalized as the pros and cons discussed for each alternative. For example, a group member could say "I believe alternative X is the best solution because of X". To prevent groups from beginning the process of convergence, other group members were not permitted to expand on or critique the idea (Dennis et al., 1998). The number of unique ideas shared by each individual was calculated by each group member and then reported to the researcher. The summation of the number of individual ideas represented the amount of conveyance within the group.

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Convergence.

Convergence was measured as the degree of solution shift between each group member's final rank-ordered solutions. Convergence was represented as the sum of differences in rank-ordering among the five group members. For example, one answer sheet was selected as the basis for comparison. If that group member listed alternative 1 as the best, while group member 2 listed alternative 1 as the worst, the difference would be 3. If group member 3 listed alternative 1 as the second best, the difference would be 1. If group members 4 and 5 listed alternative 1 as the best, the difference would be 0. The sum of the differences for alternative 1 would be 4. Convergence was also measured by determining whether a consensus was reached.

Social Influence.

The experiment required participants to rank-order alternatives individually and later as a member of a group. Social influence was operationalized as group influence since "group pressure to conform is referred to in the consumer and psychology literature interchangeably as 'social influence' or 'interpersonal influence'" (Clark and Goldsmith, 2006). Group pressure to conform is social influence that is the result of differences between group and individual views (Clark and Goldsmith, 2006). Group influence was measured as the degree of solution shift between their initial individual solution and their final individual solution (Dennis and Kinney, 1998). This was done by summing the differences for each of the four alternatives to calculate one number that represented the degree of group influence. For example, if the initial solution listed alternative 1 as the

best choice out of four while the final solution listed alternative 1 as the worst choice, the difference would be 3.

In addition to computing the degree of solution shift between individual and final solutions, a five-item scale of social influence was developed to measure the social influence that had occurred. According to Armenakis et al. (2007), validation of a measure requires several steps. Content validity can be assessed with Cronbach's Alpha, where 0.7 is considered acceptable. The original six-item scale had a reliability of 0.71. To ensure adequate variability, each item was required to have a standard deviation of at least 1.0. The standard deviation of all six items exceeded 1.0. However, the inter-item correlation matrix showed that item 2 was negatively correlated with the other variables. Thus, this item was dropped from the scale. With the remaining five items, the reliability was calculated to be an acceptable 0.80 and all items had the required variance.

An exploratory factor analysis was the next step in validation. The exploratory principal axis factor analysis indicated that a single factor with an eigenvalue greater than one accounted for 56.4% of the observed variance. This exceeded the 40% criterion level suggested by Armenakis et al. (2007). A confirmatory factor analysis revealed that the chi-square statistic $\chi^2(5, N = 149) = 6.157, p > .05$, comparative fit index (CFI) = .995, and root-mean-square error of approximation (RMSEA) = .040. Acceptable model fit is a non-significant chi-square statistic, CFI greater than 0.95, and RMSEA lower than 0.08. Based on the requirements outlined by Armenakis et al. (2007), the five-item scale is acceptable for the experiment.

Additional Measures.

A ten-item manipulation check for media synchronicity theory was also developed for the experiment. This scale was given to the participants twice and it contained two items for each of the five facets of MST. Reliabilities for each of the measures are listed in Table 4.

Table 1. Reliability of Manipulation Check Measures

Manipulation Check 1	Reliability	Manipulation Check 2	Reliability
Parallelism	0.775	Parallelism	0.846
Immediacy of Feedback	0.692	Immediacy of Feedback	0.849
Symbol Variety	0.426	Symbol Variety	0.466
Rehearsability	0.714	Rehearsability	0.852
Reprocessability	0.653	Reprocessability	0.772

The measure of symbol variety did not have the required reliability, so these results cannot be considered significant to the study. Immediacy of feedback and reprocessability also did not have the desired reliability for the first manipulation check, but both measures were adequate for the second manipulation check. However, this may have been the result of a possible history or testing artifact. As a result, results from these measures are also not considered significant to the study.

In addition to the manipulation check scales, two-item measures were also developed for staying on task and to determine if the participants required more time. The scale for staying on task had a reliability of 0.731 and the time measure had a reliability of 0.909. The pre-existing scales utilized had reliabilities of 0.882 for PANAS

positive items, 0.846 for PANAS negative items, 0.759 for liking, and 0.864 for commitment. Hence, all of these scales had the desired reliabilities.

Procedure

Prior to the start of the experiment, several steps were undertaken to select the participants for the study. First, an initial participation request was e-mailed to the entire subject pool. This e-mail included a screener (see Appendix B) that was used to select qualified participants. Questions included age, gender, and Facebook usage. The screener also contained a short quiz that tested the subject's capabilities and knowledge of various Facebook applications. Individuals were informed that they were allowed to use Facebook to assist them in answering the screener questions. Participants were also asked to select a time block to participate in the experiment. While unknown to the participants, the time block they chose determined which medium for communication they used in the experiment.

Once participants e-mailed back the screener, qualified applicants received a second e-mail. In order to be qualified to participate in the experiment, applicants were required to have a passing score on the Facebook quiz and experience using Facebook in the past month. This would ensure that all members of both ICT groups would have a minimum level of experience using Facebook. The second e-mail message included initial experiment instructions and the task (see Appendix C). The task required individuals to rank-order the eight alternatives and provide a short justification for their decisions. Justifications were required to ensure that participants thought through their

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rank-ordering and took ownership of their solution. The justifications also provided the participants information to share during the conveyance process.

When participants using face-to-face communication entered the room, they were first given the PANAS measure of positive and negative affect (see Appendix D). This information would be used as a control during data analysis. Participants were then randomly assigned to groups of five individuals. Groups then received instructions to discuss the relative pros and cons for each alternative (see Appendix E). Because the purpose of this time was conveyance of ideas, groups were not allowed to converge on a solution. They were informed that after 10 minutes, the researcher would have them complete a survey (see Appendix F) that would ask each individual to list the number of pros and cons for each alternative that they generated. These were counted as the number of unique ideas conveyed. Because each individual reported the number of ideas that they discussed, it was also possible to measure the equality of participation between group members. The survey also included the two-item scale to measure staying on task and a ten-item manipulation check for media synchronicity theory.

Once the conveyance process was complete, groups were given instructions that told them to reach a consensus on a rank-ordering of the alternatives (see Appendix G). While groups were given 10 minutes for this phase of the experiment, they were not aware of the amount of time available for convergence. This prevented them from feeling that they needed to rush into a solution. According to Bordia (1997), those using CMC perform worse than FTF when they know that they are under conditions of limited time. This effect was mitigated by not telling the groups a time limit for the convergence

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process. After 10 minutes, individuals were given a final survey (see Appendix H) to record their solution. To prevent individuals from copying off of each other, all group members were separated when they completed the final survey. Each group member's solutions were compared with the other four rank-orderings to determine the level of convergence. Even if a consensus was reached, they were instructed that their answer was not required to match the rank-ordering that they had established as a group. This was done to determine if social influence had actually occurred. These solutions were then compared to the initial individual rank-ordering to determine the effects of social influence on study participants. Additional questions in the final survey included two items that asked if individuals felt that they had enough time for conveyance and convergence, the measure of social influence, the ten-item manipulation check for media synchronicity theory, Weisband and Atwater's (1999) two-item scale for liking and a five item measure of commitment from Cialdini et al. (1995). While the manipulation check was already given at the end of the first 10 minutes, the manipulation check was given a second time to measure differences in the conveyance and convergence processes.

For those using Facebook, participants arrived and were given an e-mail address and password that they used to log into a pre-established Facebook account (see Appendix I). These accounts were setup by the researchers with the friends and group they would communicate with during the experiment (see Appendix J for profile information). Because several groups were run at once in the same room, Participants did not know which individuals were in their group. Groups received the PANAS, as well as the same general instructions for conveyance (Appendix K), and the convergence process

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(Appendix L) as those given to the FTF groups. Some of the wording was different to account for medium-specific issues. Like with the FTF groups, the groups using Facebook had 10 minutes for conveyance and 10 minutes for convergence. They were also unaware of the time available for reaching a consensus rank-ordering of alternatives. SNS groups were permitted to use the authorized Facebook applications that they felt were most appropriate to compete the task. In addition to keeping track of the number of unique ideas, groups were instructed that the researcher would also be asking which applications were used for both conveyance and convergence. This was important to the experimental results because some applications, such as discussion boards with low feedback and high parallelism, would be more effective during different phases of the experiment.

Upon completing the conveyance process, group members completed the survey (see Appendix M) that asked them to report their number of pros and cons, their usage of Facebook applications, the measure of staying on task, and the manipulation check. At the conclusion of the convergence process, all participants in the Facebook groups completed the same final survey given to face-to-face groups (see Appendix N). Each individual recorded their personal rank-ordering on the final survey. As with the FTF groups, each group member's solutions were compared with the other four rank-orderings to determine the level of convergence. Like the FTF groups, individuals were not required to list the group solution if a consensus was reached. Final rank-orderings were compared with the initial individual solutions to determine SNS social influence. A copy of the protocol that was utilized during the experiment is located in Appendix O.

Control Variables

Before analyzing the results of the dependent variables, the control variables needed to be examined to ensure that there weren't any issues with the sample or experimental factors that would impact one ICT condition more than the other. Results from independent t-tests indicated that there were no significant differences in the positive affect, negative affect, and commitment across groups. Results did indicate that participants using Facebook overwhelmingly felt that they needed more time to complete the tasks ($t=-7.719$, $p<0.000$). Means for the SNS groups were 5.523 out of a possible 7 and 3.29 for FTF groups. While previous research (Baltes, 2002; Borida, 1997; Dennis et al., 1999; Martins, 2004; Suh, 1999) has indicated that computer-mediated communication requires more time than face-to-face communication, the hypothesized experimental outcomes may be negatively impacted by a lack of time in the experiment. Consistent with existing literature (Bordia, 1997), SNS groups were more likely to stay on task ($t=-2.105$, $p<0.019$). Participants using FTF experienced more liking ($t=3.375$, $p<0.000$), but this was also consistent with prior research (Guadagno and Cialdini, 2005).

Dependent Variables

The independent t-test for dependent variables showed that all five variables had significant results. Groups using SNS conveyed more ideas than FTF groups ($t=-2.458$, $p<0.007$). Means for each group were 10.318 and 8.290 respectively.

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FTF groups experienced significantly more convergence than their SNS counterparts. Consensus was reported by 93% of those using FTF, while it was claimed by only 49% of participants using Facebook. Convergence was also measured as the degree of solution shift between each group member's final rank-ordered solutions. If total convergence occurred, this number would be zero. Therefore, a negative number indicates less convergence. Like the measure of consensus, this measure showed significantly more convergence in the FTF groups (t=2.861, p<0.005).

Social influence was measured both as the degree of solution shift between the initial and final individual rankings and with a five-item scale. The rankings indicated more social influence in the FTF groups than in the SNS conditions (t=1.914, p<0.028). Means for FTF were 12.839 and 10.714 for SNS. The scale also indicated that more social influence occurred in individuals using FTF (t=-2.147, p<0.033). Means for each group were 5.210 (FTF) and 4.759 (SNS) out of a possible 7.

The literature review highlighted that gender can have significant results on outcomes in computer-mediated communication. Therefore, it was necessary to analyze another t-test that controlled for gender in the samples. The results show that gender had little impact on the conveyance of ideas and reaching a consensus. For both genders, more ideas were conveyed with SNS and more consensuses were reached with FTF communication. Conversely, females had more SNS ranking convergence than males. The results from the social influence scale also showed that females experienced higher SNS influence and less FTF influence than their male counterparts. Differences in the social influence scale (FTF more influential) were still significant among males.

According to Guadagno and Cialdini (2005), females are more impacted by CMC's lack of non-verbal cues during influence attempts. However, the experimental results showed that the ICT had less of an effect on females than males for social influence.

Manipulation Check

According to media synchronicity theory, SNS participants should have reported high parallelism and low immediacy of feedback after the conveyance phase at manipulation check 1 (MC1). Manipulation check 2 (MC2) was taken after the convergence phase, so it should have revealed low parallelism and high immediacy of feedback. Participants using Facebook should have also reported higher reprocessability and rehearsability than participants using FTF at both MC1 and MC2. Because they used the same medium throughout the experiment, FTF users were expected to report the same values for both MC1 and MC2.

As previously discussed, the results for the measures are questionable due to the reliabilities of the scales. Results from the t-test only showed one instance where SNS and FTF were significantly different. Participants using SNS reported higher rehearsability (mean of 4.730 versus 4.056) at MC1 (t=-3.598, p<0.000). Because SNS users can rehearse and edit messages before sending, this supports MST. There were no other cases where one medium was significantly different in the five facets of MST. While the validity of the measures is questionable, this implies that participants felt that both mediums had nearly equal capabilities.

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In order to determine how the facets changed from MC1 to MC2, a paired differences t-test was preformed. Contrary to MST, parallelism and immediacy of feedback did not significantly change between phases of the experiment for users using Facebook. Unexpectedly, reprocessability was also significantly higher from MC1 (mean = 4.989) to MC2 (mean = 5.402) (t=-2.701, p<0.004). This suggests that users did not use the most appropriate Facebook applications for the specific phases of the experiment. While the facets for participants using FTF should not have changed from MC1 to MC2, four of the five facets actually significantly increased during the second phase of the experiment. These were parallelism (t=-2.255, p<0.013), immediacy of feedback (t=-2.035, p<0.023), rehearsability (t=-3.640, p<0.000) and reprocessability (t=-4.513, p<0.000). It is possible that these results are indicating a history or priming effect between MC1 and MC2.

Usage of Facebook Applications

During the experiment, participants who were using Facebook were asked which applications they used for both conveyance and convergence. This was done for two reasons. First, it was important to ensure that participants were using more than a single application. Otherwise, it would be suggested that the experiment was only a test of a single method of communication versus the multitude of communication options inherent to new media systems such as social network sites. Second, this was done to see if individuals used the applications that would be expected to be more effective during different phases of the experiment. The results showed that half of the applications were

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very rarely used (means < 2 out of a possible 5). However, all applications were still used by at least a few participants. This resulted in a few cases where significant outliers existed for photos, video, posted items, notes, and events. Because a t-test assumes normal distribution, reported values that were over 2 standard deviations from the mean were changed to the Likert-scale value closest to 2 standard deviations above the mean. Once this was complete, normal distribution of the data could be assumed and t-tests were an appropriate method to compare means between the first and second manipulation checks.

In both phases, the most commonly used applications were messaging, chat, groups, and discussion boards. The self-reported means for these in both phases the experiment were 3.06, 3.55, 3.13, and 2.79 respectively on a five-point scale. When compared to the results highlighting that Facebook participants needed more time, this makes sense because they are the fastest and most synchronous applications available to Facebook users. However, this also means that some of the potential benefits of the asynchronous applications (see qualitative results in Chapter 4) were not captured in the experimental results. See Tables 2 and 3 for Facebook application usage in the conveyance and convergence phases (adjusted to eliminate outliers).

Table 2. Facebook Application Usage in Conveyance Phase

	Minimum	Maximum	Mean	Std. Deviation
Messaging 1	1	5	2.92	1.71
Chat 1	1	5	3.70	1.50
Photos 1	1	3	1.13	0.48
Video 1	1	2	1.02	0.15
Posted Items 1	1	4	1.49	0.96
Notes 1	1	3	1.20	0.55
Events 1	1	3	1.10	0.43
Groups 1	1	5	2.95	1.85
Discussion Board 1	1	5	2.64	1.81
Wall 1	1	5	2.08	1.53

Table 3. Facebook Application Usage in Convergence Phase

	Minimum	Maximum	Mean	Std. Deviation
Messaging 2	1	5	3.20	1.71
Chat 2	1	5	3.3 9	1.53
Photos 2	1	2	1.05	0.21
Video 2	1	2	1.03	0.18
Posted Items 2	1	4	1.48	1.00
Notes 2	1	4	1.37	0.90
Events 2	1	3	1.10	0.40
Groups 2	1	5	3.31	1.77
Discussion Board 2	1	5	2.98	1.86
Wall 2	1	5	2.09	1.58

According to media synchronicity theory, participants in the Facebook groups should have used applications with high parallelism and low feedback in the conveyance phase. For the convergence phase, application usage should have shifted to those with low parallelism and high feedback. The paired samples t-test shows that there were significant differences in usage for five applications. Messaging is ideally suited for the

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convergence phase, but its usage did not change over the course of the experiment. Compared to the conveyance phase of the experiment, participants used the chat (t=1.886, p<0.031) and photo (t=1.973, p<0.026) applications less during convergence. MST supports this usage because both have high parallelism and lower feedback. In the convergence phase, participants used the notes (t=-1.830, p<0.036), groups (t=-1.707, p<0.046), and discussion board (t=-1.817, p<0.037) applications more often. This increased usage is not supported by MST because all three of these applications have high parallelism and low feedback. Usage of these applications, and not the messaging application, explains the lack of variation between MC1 and MC2 and is also a possible reason for why SNS was less effective in convergence.

Hypotheses Testing

By using an independent t-test, it was possible to compare means using the grouping variable of ICT condition. This gave insights into which mediums performed better on each of the variables tested in the experiment. In order to test the hypotheses laid out in the literature review, a bivariate correlation analysis was performed. Detailed results of the correlation analysis are outlined next, along with additional observations about the data set. Table 4 contains the means, standard deviations, and intercorrelations of study variables.

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Table 4. Means, Standard Deviations, and Intercorrelations of Study Variables

	M	SD	1	2	3	4	5	6
1. ICT[a]	0.58	0.5	a.					
2. Conveyance	9.46	5.02	.20**	b.				
3. Convergence (Consensus)	0.68	0.47	-.46**	-.25**	b.			
4. Convergence (Rankings)	-4.74	6.86	-.27**	-.07	0.39**	b.		
5. Social Influence (Rankings)	11.66	6.57	-.161*	-.07	.142*	.04	b.	
6. Social Influence (Scale)	4.94	1.23	-.18**	-.09	0.18**	.30**	.28**	0.80

N = 146-149.
* Correlations are significant at the *p* < .10 level.
** Correlations are significant at the *p* < .05 level.
a. Dummy coded: 0 = FTF, 1= SNS
b. Single item measure

> *<u>H1</u>: Social network sites will be more effective at conveyance of information than face-to-face communication.*

Media synchronicity theory states that mediums with high parallelism and low feedback are more effective at the conveyance of information. Because FTF communication is characterized as low in parallelism and high in feedback, MST suggests that it isn't the most effective medium for conveyance. However, it was hypothesized that social network sites give users the ability to utilize applications with high parallelism and low feedback. Thus, SNS would be more effective than FTF at conveyance. The t-test demonstrated that SNS users conveyed a significantly greater number of ideas than their FTF counterparts (mean of 10.318 versus 8.290). The correlation analysis also explained that there was a positive correlation of 0.200

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(significant at the 0.01 level) between ICT and the number of ideas conveyed. Therefore, hypothesis 1 was supported.

H2: The relationship between conveyance and convergence is positive.

It was hypothesized that the effective conveyance of information must occur before convergence can take place, so high conveyance would lead to high convergence. The correlation analysis indicated that the number of ideas conveyed had a significant negative correlation of -0.253 (significant at the 0.01 level) with the consensus measure of convergence and had no significant correlation with the ranking measure of convergence. Consequently, hypothesis 2 was not supported.

H3: The relationship between convergence and social influence is positive.

Previous research found that groups applying the media that is most appropriate per MST demonstrated greater group compliance. Because groups cannot move forward without adequate convergence, it was hypothesized that the medium that was more effective at convergence would also be more effective at social influence. Participants in FTF groups, who had more convergence effectiveness than those SNS groups, experienced significantly more social influence in both measures of influence according to the independent t-test. The correlation analysis demonstrated that the consensus measure of convergence had a positive correlation of 0.142 (significant at the 0.05 level) with ranking measure of social influence and a positive correlation of 0.179 (significant at the 0.05 level) with the social influence scale. While the ranking measure of convergence

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did not have a significant correlation with the ranking measure of social influence, it did
have a positive correlation of 0.300 (significant at the 0.01 level) with the five-item social
influence scale. As a result, hypothesis 3 was supported.

Process Model

The process model was used to theorize that messages transmitted via social
network sites would have greater social influence than those messages sent via FTF.
However, the experimental data showed that FTF was significantly better than SNS at
convergence. This led to a negative correlation between conveyance effectiveness and
convergence effectiveness. While convergence may have been impacted by the time
constraints imposed by the experiment, the results demonstrated that face-to-face
communication was a more influential medium than the social network site Facebook.
The final process model, with correlations, is illustrated in Figure 6.
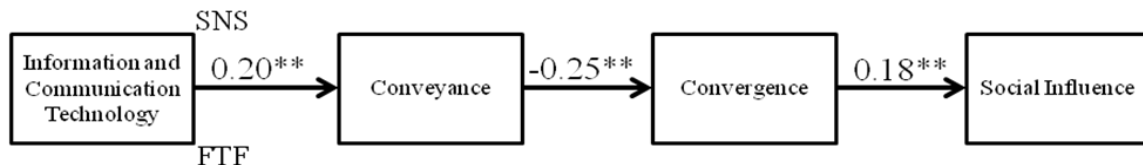
** Correlations are significant at the $p < .05$ level.

Figure 6. Process Model with Correlations

VII. Discussion and Implications of Research

As predicted, social network sites were significantly more effective at the conveyance of information than FTF. However, the results suggest that face-to-face communication is a more influential medium. The results also provided support for the hypothesis that effective convergence will lead to higher social influence. Unexpectedly, conveyance effectiveness did not positively correlate with convergence. When aggregated into the process model, it is suggested that a medium that allows for the sharing of more ideas will lead to less convergence and consequently less social influence.

A possible explanation for why hypothesis 2 did not yield the expected results is that the sharing of too many ideas can actually complicate the convergence process. Individuals cannot reach accurate and valid conclusions without an adequate conveyance of information. But once an adequate amount of information is conveyed, the results suggest that additional information beyond what is required actually reduces the effectiveness of convergence. The convergence process is made up of the sensemaking strategies of deliberation and affiliation (Dennis et al., 1998). More ideas increases the amount of deliberation required, and gives the individuals more options to choose from when affiliating. Thus, as more information is shared, more time is needed. It is well-stated in the literature that computer-mediated communication is a slower medium than face-to-face. This experiment shows that sharing more ideas, especially when combined with a slower medium such as social network sites, can actually result in less effective social influence attempts.

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The study provided interesting insights into the effects computer-mediated communications has on different genders. Past research has shown that influence attempts are less effective on females than males. This was assumed to be as a result of the lack of merged identity and the fewer non-verbal cues that are inherent in CMC. Gender had the opposite effect on the results of this study. In fact, females experienced no significant difference in social influence between ICTs while males were significantly more influenced by face-to-face communication. This suggests that social network sites do indeed create a sense of merged or interconnected identity that allows the medium to become equally influential as FTF.

The manipulation checks had questionable measures and provided little support for the facets of media synchronicity theory. Each of the five facets was measured at the end of the conveyance and convergence phases, yet only rehearsability was found to be significantly different between ICTs. In accordance with MST, SNS was found to have more rehearsability but the theory also suggested that SNS should have higher reprocessability. MST's characterization of the FTF medium is also not supported by the study. The theory suggests that FTF has low parallelism and high feedback. However, the data found FTF to be high in both facets. After the convergence phase, FTF measured significantly higher in four of the five facets than it did during the conveyance phase. Because the medium didn't change, MST implies that this shouldn't have occurred. The results of the manipulation checks indicate that participants felt each medium had nearly similar capabilities despite their vast differences.

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The application usage scales provide some possible explanation for why SNS groups did not effectively converge as well as expected. Users had 10 applications to choose from, but on average participants only admitted to using four applications more than "rarely". While time may have been a factor in limiting the use of the more asynchronous applications, the potential convergence benefits of the unused applications were not captured by this study. The results also show that users significantly increased their usage of applications such as notes, groups, and discussion boards during the convergence phase of the experiment. MST suggests that users should have used the messaging application more in the second phase, yet its usage is unchanged between phases. The manipulation checks also confirm that participants in the SNS groups were not using the applications most appropriate for convergence. Therefore, it is possible that more convergence and accordingly more influence would have occurred had the participants used the Facebook applications best suited for the particular phase of communication.

Results also indicated that participants using Facebook overwhelmingly felt that they needed more time to complete the tasks ($t = -7.719$, p<0.01). While previous research (Borida, 1997; Dennis et al., 1999; Martins et al., 2004) has indicated that computer-mediated communication requires more time than face-to-face communication, the experimental outcomes may have been negatively impacted by a lack of time in the experiment. Had the participants been given enough time to reach a consensus, it is quite possible that participants in SNS groups may have experienced equal social influence. In fact, the higher number of ideas may have led to more social influence than was reported

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by individuals in FTF groups. While this study may have shown FTF to be more influential, one cannot reject the theory that social network sites have the potential to be more influential than FTF. To fully understand the influence potential of social network sites such as Facebook, the time constraints need to be removed from SNS groups.

Implications

This research has important implications to the existing theory on communications technology and influence. While many experts argue that new media technologies are altering the traditional communications theories, there has been a lack of academic research and support for emerging theories. This study provides qualitative and empirical support for the capabilities of one popular form of new media, the social network site. In addition, a mixed methods approach was used to test a process model for the effects of communication on social influence. The process model is important because it suggests that the conveyance of too many ideas can actually have a negative effect on convergence and social influence when time is limited. The model also provides the possibility that social network sites can be more influential than face-to-face communication when users utilize the correct applications and are given enough time to converge. Furthermore, the study resulted in the development of a new five-item measure of social influence. Finally, the research provides support to media synchronicity theory's claim that communications are broken down into two distinct phases of conveyance and convergence.

From a managerial perspective, these results are important because they highlight the potential of social network sites in the workplace. For sharing ideas, social network sites emerged as more effective than face-to-face communication. When compared to other forms of computer-mediated communication, it appears that SNSs also create a higher sense of oneness. If organizations are forced to use CMC, they should look to social network sites to minimize the medium's effect on specific genders. The results also provide recommendations for the use of SNS technologies such as Facebook. It is clear that potential users need to be trained on different applications and when they are most appropriate to use. When time is limited, managers should consider face-to-face communication when distance is not a limiting factor. However, potentially more influence can be achieved with SNSs if there is adequate time.

Limitations

Because the sample of interview respondents was non-random, the generalizability of qualitative data in study 1 is rather limited. Participants received $100 for their time, so this may have impacted the type of individual of those who volunteered to be interviewed for the study. Several biases were introduced into the results by relying on paid volunteers. First, volunteers tend to be risk takers that may be more assertive than the general public. The respondents may have also been more articulate and more willing to express opinions. Due to the limited number of available timeslots, participation was also the result of self-selection. Since participation was not random,

each person in the subject pool did not have an equal chance of being chosen for the study.

There are some limitations that are inherent to qualitative research. Most importantly, interview transcripts do not capture non-verbal communication such as body-language and the amount of time between questions and responses. While this was somewhat mitigated by viewing the video-taped recordings of the interviews, undoubtedly some essential non-verbal cues were omitted from the results. There are some limitations associated with the interviewer-interviewee relationship. While the videos do not show any obvious examples of this, the interview results may have been impacted by personalities and interpersonal dynamics. It is important to also consider that respondents could have been apprehensive to be completely honest in their answers because of fear of what the interviewer may think.

For experiment conducted in study 2, the participants were volunteers who signed up to receive extra credit in an undergraduate class. Thus, the non-random sample had the same generalizability limitations listed above for study 1. Assignment to communication mediums was also non-random. ICTs were assigned according to which time slots the participants signed up to participate in the experiment. For example, an individual that signed up for a session on Monday was in a Facebook group while those in Tuesday's sessions utilized face-to-face communication. While participants were given no knowledge of which ICT they were signed up for, it is a limitation that must be considered.

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For both ICTs, it was found that isolating the conveyance and convergence processes was difficult in an experimental setting. For example, non-verbal communication could have led to convergence occurring during the conveyance phase of the experiment. Operationalizing conveyance as a number of pros and cons also meant that some information was conveyed and not measured. As a result, conveyance by non-verbal cues wasn't measured in the face-to-face groups. In describing an experiment that was found to support media synchronicity theory, Dennis (1998) admitted that "the decision-making process may iterate between convey and converge activities over time and that forcing groups into one activity or the other at any given point in time may not be representative of how groups actually make decisions in all cases". Being aware of this issue, the researchers made every effort to provide detailed instructions on both communication processes to the participants. However, observations of both SNS and FTF groups illustrated that some convergence did occur during the conveyance phase and some conveyance occurred while participants were supposed to be converging.

Validation of the social influence measure is another limitation of study 2. Even though an analysis of the measure showed it to be acceptable, it is still a new measure that was developed for the experiment. Additional research needs to be done to ensure the validity of the five-item social influence scale.

The experiment revealed some limitations that were exclusive to the SNS groups. Any experiment that utilizes computer-mediated communication is limited by the typing skills of the participants. Bordia (1997) found that the speed typing is 40% slower than that of speaking face-to-face. However, these effects should be somewhat mitigated

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among a sample of computer literate undergraduate students. Individual knowledge and experience with the Facebook may have also been a limitation. While all participants were required to pass a test that screened their familiarity with Facebook and ensured a minimum level of Facebook efficacy, it can be assumed that all users were not equally familiar and experienced with all of the available applications.

As highlighted in the results, SNS groups felt that they did not have enough time to complete the task. Post-experiment reviews of the Facebook conversations also revealed that groups spent time deciding the best method to communicate with each other instead of using the limited time to accomplishing the task. While Bordia (1997) points out that CMC groups tend to take longer to complete tasks, he also stated that CMC groups perform as well as FTF groups when given enough time. While time may have been a constraint of using the SNS medium, the goal of the experiment was to measure social influence and not the amount of time required to complete a given task. It is apparent that the task was too complicated for the time allotted in the experiment. Even though participants were randomly assigned to ICT groups, there could have been a time constraint because the SNS groups were 60% female. Dennis et al. (1999) found that females take significantly longer than males when using CMC. The time constraint was further complicated in a few cases by network issues that caused Facebook pages to load slower than usual. As a result, it can be argued that more convergence and social influence probably would have occurred in the SNS groups had more that 10 minutes been given for that phase of the experiment. The researcher attempted to control for the lack of time by comparing the change in the top-ranked choices instead of all eight

alternatives. Because some groups decided on the bottom rankings first while others attempted to find the best alternative first, the different group approaches to decision-making made it impossible to accurately capture the convergence and social influence that occurred without comparing all eight alternatives.

There were a couple limitations that were unique to the face-to-face groups. While individuals were randomly assigned to their groups, it is possible that some members had relationships prior to the start of the experiment. Because the participants using Facebook had no knowledge of who was in their group, familiarity among group members in face-to-face groups would give those groups an advantage in teamwork. FTF groups also completed the conveyance survey while sitting next to each other. Thus, it is possible that some participants copied off of each other. To minimize this effect, groups were separated when completing the final survey. The results also show that many individuals claimed to reach a group consensus but had rank-orderings that were slightly different than the rest of their group. While it is a limitation of the medium, FTF's lack of reprocessability may have resulted in participants forgetting the ranking of any or all of eight alternatives in the consensus solution. Consequently, the results would show a lack of convergence and social influence when in actuality these occurred and would have been recorded if the medium had higher reprocessability.

Opportunities for Further Research

Based on the results of the survey questions on time allotted, it is necessary to run the experiment again with a simpler task. It is reasonable to assume that the effectiveness

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of SNS convergence was limited due to time. More time probably would have led to more convergence and social influence. Because the far majority of face-to-face groups reached a consensus in 10 minutes, adding time to the experiment would introduce a ceiling effect for those using FTF communication. The time limitations of CMC would most likely be eliminated from the experiment by using a task with four alternatives instead of eight. Hence, there would be higher confidence that the results are representative of the capabilities of the ICT after a second round of experiments that incorporated a four-alternative task. In addition to running the experiment again with a new task, it would be interesting to see the results of giving the groups using SNS unlimited time with the current task. By comparing the results between the new SNS groups and the time constrained SNS groups, it would be possible to determine the effects of time on convergence and the process model.

In the literature review, several strengths and unique capabilities of social network sites were presented. However, the experiment didn't take full advantage of all of Facebook's strengths because it only tested the theory that social network sites are "a strong embodiment of new media". The results are encouraging because they illustrate that social network sites as a medium of communication are nearly as effective at social influence as face-to-face communication. To fully understand the social influence of social network sites, further research needs to be accomplished that incorporates of each of the strengths of SNS.

In the experiment, participants were given pre-established Facebook profiles with generic names and no personal information. They were not allowed to add their own

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friends. In reality, there is little anonymity in social networks. The experiment also prohibited participants from adding additional Facebook applications. As shown by the qualitative results, many individuals rely on the social network and this has been shown to have positive effects on social influence. Because the experiment removed the social network, future research could also measure influence in groups that have pre-established relationships and/or existing social networks.

As shown in the qualitative results, the asynchronous capabilities of social network sites have some potential benefits. DeLuca and Valacich (2006) also showed that individuals benefit from the anyplace, anytime freedom of asynchronous communication. However, the measure of Facebook application use illustrated that the experiment's time limit prevented the utilization of many applications. Social network sites are powerful because they allow for synchronous and asynchronous communication at any distance. Face-to-face communication is limited to individuals who can converse synchronously in close proximity to each other. This strength of SNS over FTF was not tested in the experiment. Thus, there should be further research into what effects the asynchronous SNS applications have on both communication effectiveness and social influence.

<u>New Media Depth Interview Guide</u>

Overview:

Over the course of the interviews, we hope to uncover both depth and breadth of information about how and why young users (ages 18 – 25) use new media technologies. Over the course of the 50 domestic and 30 international interviews, we would like a complete picture of the general process of trial → adoption → usage → influence <u>and</u> some preliminary insight into the network effects that drive the diffusion of these technologies and messages transmitted using these new media.

In order to accomplish this, a general interview guide is provided that consists of a series of general questions. In addition to the general questions, probing questions and a series of projective techniques are included that can be used to gather deeper information. It will not be possible to probe for deeper answers for each of the 15 questions included in the interview guide with each participant, so the interviewers will need to be adaptive to probe on the certain questions that each respondent seems most suited to elaborate on. The homework questionnaire should help interviewers form a baseline approach for each interview and after that they should react accordingly based on the disposition and experiences of the respondent.

Based on this guide the interviewers should be able to answer these key questions:
1. Why do users to <u>try</u>, <u>adopt</u>, <u>use</u>, and <u>influence others</u> with new media services?
    a. What are the internal, social, network, and product-specific factors that influence these stages?
2. What types of new media services are being used?
    a. In what capacity and for what type of messages are they being used?
    b. What is the frequency and intensity of usage of each new media service?
    c. In what contexts are these new media services being used?
3. What types of messages are being sent and sought out via these new media services?
    a. Which types of messages are most likely to be "shared?"
    b. Which types of messages are most influential?
4. How do messages sent via new media sources influence consumers?
    a. What is the relative effectiveness of these new media services and messages on persuasion (attitude change)?
    b. What is the relative effectiveness of these new media services and messages on compliance (behavior change)?
5. Why do/don't users for introduce new media services to other users?

In addition to these core questions, the interviewers should be able to inhere some key differences that are likely occur based on culture and demographics, including:
1. How does culture affect the preceding motivations, behavior, and influence?
2. How does ethnicity affect the preceding motivations, behavior, and influence?
3. How do demographics affect the preceding motivations, behavior, and influence?

Obviously, tapping into the underlying motivations for these various questions will require varying level of details and approaches during the interview process. While we realize that no single interview will be able to yield substantial insight into all these issues, our goal is to have a complete picture of this process once all the interviews are completed. It is also important to note that we need to try to improve our understanding of all these new media, but a more detailed look at social networking and video sharing

sites are the most critical to this research. In some interviews you may be able cycle through the "media-specific" interview questions for multiple types of new media technologies based on the level of customer experience with each type of technology.

Introduction:

"Good Morning, I am _____(introduce self).

This interview is being conducted to better understand why you use new media technologies. When I say "new media technologies," I am referring to technologies like blogs, personal websites, social networking sites (i.e., MySpace and Facebook), video sharing sites (YouTube and Flickr), podcasts, and online/viral games. I am particularly interested in understanding why you adopted these technologies, how you use them, and how you communicate through these new media.

I will be video and tape recording our conversation. The purpose of this is so that I can get all the details but at the same time be able to carry on an attentive conversation with you. Since the interviews are being recorded I cannot guarantee confidentiality. If you agree to this interview and the recording, please sign this consent form (Provide respondents with consent forms).

I am now going to ask you a series of questions that I would like you to answer to the best of your ability.

General Questions about Technology

- Which of the following types of new media that I described earlier (blogs, personal websites, social networking sites, video sharing sites, podcasts, viral games) do you regularly use?
    - *PROBES:*
        - How often do you use them?
        - How long have you been using these technologies?
        - Specifically what sites do you visit for each of these technologies?

    - *NOTE:* These questions can be used to establish a general framework of the types of technologies that the participant uses most often, so that future probe questions can be focused on the technologies that the participant is most familiar with.
        - This is a good place to quickly compare these answers to their "screener" assessments and identify focal technologies for the conversation.

Now I want to ask you some more details about your specific experiences with these different new media technologies.

FOR THE QUESTIONS THAT ASSESS TRIAL, ADOPTION, USE, INFLUENCE, and BEAHVIOR I HAVE DEVELOPED CUSTOM SCRIPTS BASED ON EACH TYPE OF NEW MEDIA TECHNOLOGY. THESE QUESTIONS ARE CONSISTENT, BUT THERE ARE UNIQUE ASPECTS DEPENDING ON THE TYPE OF MEDIA.

SOCIAL NETWORKING TECHNOLOGIES

Questions about Trial

- You mentioned that you regularly use _____ (insert one of the social networking sites that is regularly used – Facebook, MySpace, Xanga, hi5).
  - o Can you describe the first time you found out about this site?
    - ▪ Who introduced this site to you?
      - Why do you think this person introduced you to this site?
      - How did they convince you to try this site?
      - What role did they play in making you try this site?
      - Prior to this experience, did anyone try to unsuccessfully?
        - o Why didn't you try the service this time?
    - ▪ What did you think once you first heard about this site? WHY?
  - o How long after first being exposed to this site did you start using it?
  - o What motivated you to try the service out for yourself?
    - ▪ Internal interest?
    - ▪ Social pressure?
    - ▪ Something Else?
  - o Can you describe your first experience as a user in great detail?
    - ▪ Did you enjoy your first experience?
    - ▪ What activities did you perform during your first interaction with the site?
      - Did you update your profile?
      - Upload photos?
      - Find friends?
      - Leave friends messages?
      - WHY DID YOU ENGAGE IN THESE BEHAVIORS?
  - o Have you ever tried other social networking sites?
    - ▪ Can you describe how you first reacted to these trial experiences too?
  - o Did you like your experience with (insert the focal social networking site name here) better than your initial experience with these other sites?
    - ▪ Why or Why Not?

Questions about Adoption

- After your trial, why did you keep using the service?
  - o Please elaborate.
- Did anyone else influence your decision to continue using the new service after you first tried it?
  - o Did anyone talk to you directly to encourage your continued use?

Questions about Continued Usage

- Why do you continue to visit this site?
  - o PLEASE ELABORATE
    - ▪ Do you use it for communication? What kind of messages do you send or receive?
    - ▪ Do you use it for entertainment? What type of content do you look for?
- Please describe the typical process that you go through when you log into the site?
  - o When do you log into the site? WHY?
  - o How many times a day to you use the site?
  - o When you visit the site….Do you…
    - ▪ Update your Profile?
    - ▪ Upload Photos

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- When you upload photos do you tag your friends?
    - Why do you tag them?
- Have you ever untagged photos that others have uploaded of you?
    - What did you do this?
    - Can you give me an example of this?
- Write on people's walls?
    - Whose "wall" do you write on?
- Leave people messages?
    - Who do you leave messages for?
- Have you added any new applications to your Facebook or MySpace page?
    - These include things like weather, horoscope, graffiti, etc.
- In addition to these tasks, how do you use this site as part of your daily life?
    - Do you use it for?
        - Communication (HOW SO? WITH WHO?)
        - Persuasion (HOW SO? WITH WHO?)
        - Entertainment (HOW SO? WITH WHO?)
        - Information (HOW SO? WITH WHO?)
- How has using this technology changed your daily activities?
    - How you talk to people? What people?
    - Who you stay in touch with?
        - What people would you not talk to if not for this site?
- What about you makes you so interested in using the site?
- What about your social network makes you prone to using this technology regularly?
- If your friends stopped using this service would you continue to use it? WHY?
- Do you use any other social networking sites?
    - Which ones?
    - Why do you use these other sites?
        - If (insert the name of the focal site) offered these same benefits (added features, social network, etc.) would you stop using this other site?
    - In what ways is (insert the name of the focal site) superior to these other sites?
- How does the primary site you use compare to others?

Questions about Influence
- Who usually sends you messages on this site?
    - What types of messages do they send you?
    - How do you react when you receive these messages?
        - Tell me about one of these messages that you received recently.
            - Who sent you this message? Why did they send this message to you?
- Who usually write on your wall on this site?
    - What do they write?
    - How do you react when you receive these notes?
        - Tell me about one of these messages that you received recently.
            - Who sent you this message? Why did they send this message to you?

- How have you used these new technologies to influence the opinions of others?
    - Have you tried to enhance other's opinions of you?
        - Are you selective about the pictures you upload?
        - What about pictures that others tag you with?
    - Have you tried to inform others?
        - Have you recruited others to join different groups?
            - What groups?

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- Who did you recruit?
- Why did you use this site to reach out to them?
- Did you also contact them offline?
- What were the benefits of contacting them through this site?
  - When you send these messages do you send them to individuals or broadcast them to groups?

Questions about Behavior
- Have you ever introduced this site to others?
  - Please describe a situation where you introduced other people to this new technology?
  - Why were you motivated to introduce others to the technology?
  - Were these efforts successful? WHY or WHY NOT?
- Which of the social networking sites is easiest to introduce to others? Why?

PROJECTIVE QUESTIONS

- What types of new media technologies does the typical young person use in your hometown?
  - Can you describe these technologies to me?

- Why do people use these new technologies?

- How do people use these technologies to supplement their daily activities?
  - Communication (HOW SO? WITH WHO?)
  - Entertainment (HOW SO? WITH WHO?)
  - Information (HOW SO? WITH WHO?)

- When did you first hear about this new technology?
- What did you think when you first heard about it?
- *IF THE RESPONDENT BEGINS TO DISCUSS THEIR EXPERIENCE THEN SWITCH TO THE STANDARD QUESTIONS ABOUT TRIAL*

- Do friends from your hometown use this technology?

- If they stopped using this technology would you continue to use it?
  - Why or Why Not?

- How does this technology compare to other similar sites?
  - What are the best features about each site?

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Respondent Screener

1. Do you have your own Facebook profile?
   a. YES
   b. NO

2. In the last month, have you contacted someone through Facebook on more than one occasion?
   a. YES
   b. NO

3. In a typical week, how many hours do you spend visiting social network sites (MySpace/Facebook)? _____

Please circle the correct anwers to the following questions about using applications within the Facebook.

4. When sending an instant message to an online friend, what color is the circle next to their name?

   a. Blue
   b. Yellow
   c. Green
   d. Red

5. Where on the homepage do you find the icon for notifications?

   a. Top Left
   b. Top Right
   c. Bottom Left
   d. Bottom Right

6. In the pop-out chat function, is there a picture next to each online friend?

   a. Yes
   b. No

7. In Posted Items, what does the "Post A Link" icon look like?

   a. Red box
   b. Silver circle
   c. Yellow circle
   d. Blue box

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8. Does your friend's wall give you the option to write, share a link, post photo, record video, and gift?

     a. Yes
     b. No

9. On the group page, is "Recently joined by your friends" on the left or right of "Your recently updated groups?

     a. Left
     b. Right

10. When starting a new topic on a Group's discussion board, how many text boxes are provided?
     a. One
     b. Two
     c. Three
     d. Four

11. When writing a Note, how many options are there in the "Note Privacy" pull-down menu?
     a. One
     b. Three
     c. Five
     d. Seven

12. Is the link to your inbox located at the top or bottom of the Facebook homepage?
     a. Top
     b. Bottom

13. Which of the following categories best describes your age?

        _____ Under 18

        _____ 18 to 21

        _____ 22 to 25

        _____ 26 or older

        _____ Refused

14. Please indicate your gender.

        _____ Female

        _____ Male

New Restaurant Task

This investigation will examine a series of attributes under consideration for a potential new restaurant in East Lansing, MI on the Grand River strip just north of MSU. Imagine that you are a business consultant advising the restaurant owner. You need to provide the best advice for maximizing returns on this new venture. The owner is asking that you select and rank order a pre-determined set of alternatives. Using the boxes before each feature, please rank-order each category from 1 (best solution) to 8 (worst solution). Please ensure that you justify your selections in the space provided.

Type of Restaurant	Price Point	Rank	Justification
Mexican	$5-$7		
American	$14-$16		
American	$5-$7		
Chinese	$14-$16		
Italian	$14-$16		
Italian	$11-$13		
Chinese	$5-$7		
Italian	$5-$7		

Appendix D - PANAS

Thank you for agreeing to participate in the study. As part of this project we want to develop a deeper understanding about how people communicate with social networks. Prior to participating in the study, we ask that you complete this survey. It will take you about five minutes to complete.

Your participation in this study is purely voluntary. If you choose not to participate in this study or withdraw from this study you will experience no penalty. Since some of the questions asked in this survey may be used for data analysis, your responses are not confidential, but no one outside the research team will be able to link your specific responses to you. The results of this research will be published, but your name will not be used.

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent <u>you currently feel at this moment</u>.

Use the following scale to record your answers.

(1) = Very slightly or not at all   (2) = A little   (3) = Moderately   (4) = Quite a bit   (5) = Extremely

		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1.	Interested	1	2	3	4	5
2.	Distressed	1	2	3	4	5
3.	Excited	1	2	3	4	5
4.	Upset	1	2	3	4	5
5.	Strong	1	2	3	4	5
6.	Guilty	1	2	3	4	5
7.	Scared	1	2	3	4	5
8.	Hostile	1	2	3	4	5
9.	Enthusiastic	1	2	3	4	5
10.	Proud	1	2	3	4	5
11.	Irritable	1	2	3	4	5
12.	Alert	1	2	3	4	5
13.	Ashamed	1	2	3	4	5
14.	Inspired	1	2	3	4	5
15.	Nervous	1	2	3	4	5
16.	Determined	1	2	3	4	5
17.	Attentive	1	2	3	4	5
18.	Jittery	1	2	3	4	5
19.	Active	1	2	3	4	5
20.	Afraid	1	2	3	4	5

Instructions for Study

Type of Restaurant	Price Point
Mexican	$5-$7
American	$14-$16
American	$5-$7
Chinese	$14-$16
Italian	$14-$16
Italian	$11-$13
Chinese	$5-$7
Italian	$5-$7

The information above is the same as in the task that you have previously completed individually. Imagine that you are a business consultant advising the owner for a new restaurant on the Grand River strip just north of MSU. You need to provide the best advice for maximizing returns on this new venture. The owner is asking that you select and rank order a pre-determined set of alternatives.

You and your team members will be given 10 minutes to discuss the pros and cons of each of the alternatives. For example, a team member can list a pro by saying "I believe Italian is the best solution because there are not enough Italian restaurants on the Grand River strip".

- The purpose of this time is to list as many pros and cons as possible.
- All ideas are valid during this phase of the experiment, so you are **<u>NOT</u>** permitted to expand on or critique the pros and cons presented by other team members.
- Teams shouldn't attempt to reach a consensus on the rank-ordering; time will be given for this later in the study.
- Team members are only allowed to communicate verbally, so you can only use your pen to keep track of the number of pros and cons you shared.

After 10 minutes, you will be asked to complete a survey. This survey will ask you to record the number of strengths and weaknesses you personally discussed with the team, so it is important that you keep track of the total number of ideas you individually presented by filling in the circles below. Each circle represents one pro or con that you individually shared with your team.

Pros: ○
Cons: ○

Conveyance Survey

Please indicate the total number of strengths and weaknesses you individually presented to the group.
_____

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the last 10 minutes of the study.

	Very Strongly Disagree 1	2	3	4	5	6	Very Strongly Agree 7
I felt that I was able to hold several conversations simultaneously.	O	O	O	O	O	O	O
I felt that I was able to re-examine messages at a later time after they had been communicated.	O	O	O	O	O	O	O
I felt that I had many different ways to acknowledge and reply to messages from other team members.	O	O	O	O	O	O	O
I felt that I was able to rehearse my messages before communicating them to other team members.	O	O	O	O	O	O	O
I felt that I was able to acknowledge and reply to messages as soon as I received them from other team members.	O	O	O	O	O	O	O
I felt that I was able to monitor and coordinate multiple conversations at the same time.	O	O	O	O	O	O	O
I felt that I had a variety of verbal and non-verbal ways to choose from when communicating messages.	O	O	O	O	O	O	O
I felt that I was able to instantaneously respond to messages if I so desired.	O	O	O	O	O	O	O
I felt that I was able to process messages again once they had been communicated.	O	O	O	O	O	O	O
I felt that I was able to fine tune my messages before they were communicated.	O	O	O	O	O	O	O

<u>Instructions for Phase II</u>

Type of Restaurant	Price Point
Mexican	$5-$7
American	$14-$16
American	$5-$7
Chinese	$14-$16
Italian	$14-$16
Italian	$11-$13
Chinese	$5-$7
Italian	$5-$7

Now that you and your team have discussed the pros and cons for each alternative, your team is now encouraged to reach a consensus on the rank-ordering of alternatives. Remember that you have been asked to provide the best advice for maximizing returns on this new venture. You are permitted to expand on or critique the ideas presented by other team members. Team members are only allowed to communicate verbally, so the use of pens is prohibited until the conclusion of the study.

Once discussion is complete, you will be asked to record your opinion of the best rank-ordering of alternatives. You will also be given a final survey at this time.

Final Survey

Thank you for participating in the study. Your participation in this experiment is purely voluntary. If you choose not to participate in this study or withdraw from this experiment you will experience no penalty. Since some of the questions asked in this survey may be used during data analysis, your responses are not confidential, but no one outside the research team will be able to link your specific responses to you. The results of this research will be published, but your name will not be used.

Using the boxes before each feature, please rank-order each category from 1 (best solution) to 8 (worst solution).   Even if your team reached a consensus, you are not required to provide that solution if you do not feel that it is the best rank-ordering of alternatives.

Did your group reach a consensus (please circle)?   Yes   No

Type of Restaurant	Price Point	Rank
Mexican	$5-$7	
American	$14-$16	
American	$5-$7	
Chinese	$14-$16	
Italian	$14-$16	
Italian	$11-$13	
Chinese	$5-$7	
Italian	$5-$7	

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the last 10 minutes of the study.

	Very Strongly Disagree						Very Strongly Agree
	1	2	3	4	5	6	7
I felt that I was able to hold several conversations simultaneously.	O	O	O	O	O	O	O
I felt that I was able to re-examine messages at a later time after they had been communicated.	O	O	O	O	O	O	O
I felt that I had many different ways to acknowledge and reply to messages from other team members.	O	O	O	O	O	O	O
I felt that I was able to rehearse my messages before communicating them to other team members.	O	O	O	O	O	O	O
I felt that I was able to acknowledge and reply to messages as soon as I received them from other team members.	O	O	O	O	O	O	O
I felt that I was able to monitor and coordinate multiple conversations at the same time.	O	O	O	O	O	O	O
I felt that I had a variety of verbal and non-verbal ways to choose from when communicating messages.	O	O	O	O	O	O	O
I felt that I was able to instantaneously respond to messages if I so desired.	O	O	O	O	O	O	O
I felt that I was able to process messages again once they had been communicated.	O	O	O	O	O	O	O
I felt that I was able to fine tune my messages before they were communicated.	O	O	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the study.

	Very Strongly Disagree						Very Strongly Agree
	1	2	3	4	5	6	7
More time for discussion would have led to more ideas.	O	O	O	O	O	O	O
More time for discussion would have led to a better rank-ordering.	O	O	O	O	O	O	O
I enjoyed working with the members of my group.	O	O	O	O	O	O	O
I would like to work with the other group members again.	O	O	O	O	O	O	O
My opinion of individual strengths and weaknesses changed as a result of the inputs from other group members.	O	O	O	O	O	O	O
My personal views are the same as those I expressed publicly during the group discussion.	O	O	O	O	O	O	O
When determining my final solution, I considered the opinions of other group members.	O	O	O	O	O	O	O
My final solution was influenced by the opinions of others.	O	O	O	O	O	O	O
My opinions of the best solution changed based on the group discussion.	O	O	O	O	O	O	O
I altered my rank-ordering of alternatives due to requests from group members.	O	O	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement.

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
It is important to me that those who know me can predict what I will do.	O	O	O	O	O	O	O
I want to be described by others as a stable, predictable person.	O	O	O	O	O	O	O
The appearance of consistency is an important part of the image I present to the world.	O	O	O	O	O	O	O
I typically prefer to do things the same way.	O	O	O	O	O	O	O
I make an effort to appear consistent to others.	O	O	O	O	O	O	O

INSTRUCTIONS: Read each statement carefully. For each statement, choose the option that best represents your opinion of your team.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There was a lot of unpleasantness among members of this team.	O	O	O	O	O
The longer we worked together as a team the less well we do.	O	O	O	O	O
Every time someone attempted to correct a team member whose behavior was not acceptable things, seem to get worse rather than better.	O	O	O	O	O
My relations with other team members were strained.	O	O	O	O	O
I very much enjoyed working with my teammates.	O	O	O	O	O
My teammates had a good command of the language.	O	O	O	O	O
My teammates were sensitive to others' needs of the moment.	O	O	O	O	O
My teammates typically got right to the point.	O	O	O	O	O
My teammates dealt with others effectively.	O	O	O	O	O
My teammates were good listeners.	O	O	O	O	O
My teammates expressed their ideas clearly.	O	O	O	O	O
My teammates usually responded quickly.	O	O	O	O	O

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Appendix I – Facebook Login Info

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy1@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy2@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy3@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy4@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy5@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy6@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy7@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy8@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy9@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy10@gmail.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy11@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy12@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy13@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy14@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy15@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy16@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy17@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy18@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy19@yahoo.com
3. Enter the following password: experiment

Steps for logging onto your Facebook profile
1. Log onto Facebook.com
2. Enter the following e-mail: msustudy20@yahoo.com
3. Enter the following password: experiment

Appendix J – Facebook Profiles

Group 1
Pat Smith   msustudy1@gmail.com
Casey Johnson   msustudy2@gmail.com
Riley Williams   msustudy3@gmail.com
Robin Jones   msustudy4@gmail.com
Taylor Brown   msustudy5@gmail.com

Group 2
Pat Johnson   msustudy6@gmail.com
Casey Williams   msustudy7@gmail.com
Riley Jones   msustudy8@gmail.com
Robin Brown   msustudy9@gmail.com
Taylor Smith   msustudy10@gmail.com

Group 3
Pat Williams   msustudy11@yahoo.com
Casey Jones   msustudy12@yahoo.com
Riley Brown   msustudy13@yahoo.com
Robin Smith   msustudy14@yahoo.com
Taylor Johnson   msustudy15@yahoo.com

Group 4
Pat Jones   msustudy16@yahoo.com
Casey Brown   msustudy17@yahoo.com
Riley Smith   msustudy18@yahoo.com
Robin Johnson   msustudy19@yahoo.com
Taylor Williams   msustudy20@yahoo.com

<u>Instructions for Study</u>

Type of Restaurant	Price Point
Mexican	$5-$7
American	$14-$16
American	$5-$7
Chinese	$14-$16
Italian	$14-$16
Italian	$11-$13
Chinese	$5-$7
Italian	$5-$7

The information above is the same as in the task that you have previously completed individually. Imagine that you are a business consultant advising the owner for a new restaurant on the Grand River strip just north of MSU. You need to provide the best advice for maximizing returns on this new venture. The owner is asking that you select and rank order a pre-determined set of alternatives.

You and your team members will be given 10 minutes to discuss the pros and cons of each of the alternatives. For example, a team member can list a pro by saying "I believe Italian is the best solution because there are not enough Italian restaurants on the Grand River strip".

- The purpose of this time is to list as many pros and cons as possible.
- All ideas are valid during this phase of the experiment, so you are **<u>NOT</u>** permitted to expand on or critique the pros and cons presented by other team members.
- Teams shouldn't attempt to reach a consensus on the rank-ordering; time will be given for this later in the study.
- You are only allowed to use the Facebook applications pre-loaded onto your profile.

After 10 minutes, you will be asked to complete a survey. This survey will ask you to record the Facebook applications you use during this phase of the study. You will also be asked to record the number of strengths and weaknesses you personally discussed with the team, so it is important that you keep track of the total number of ideas you individually presented by filling in the circles below. Each circle represents one pro or con that you individually shared with your team.

Pros: ○
Cons: ○

<u>Instructions for Phase II</u>

Type of Restaurant	Price Point
Mexican	$5-$7
American	$14-$16
American	$5-$7
Chinese	$14-$16
Italian	$14-$16
Italian	$11-$13
Chinese	$5-$7
Italian	$5-$7

Now that you and your group have discussed the pros and cons for each alternative, your team is now encouraged to reach a consensus on the rank-ordering of alternatives. Remember that you have been asked to provide the best advice for maximizing returns on this new venture. You are permitted to expand on or critique the ideas presented by other group members. You are only allowed to use the Facebook applications pre-loaded onto your profile.

At the conclusion of the study, you will be asked to record your opinion of the best rank-ordering of alternatives. You will also be given a final survey at this time. It is important that you keep track of the Facebook applications that you use during this second phase of the study.

Conveyance Survey

Please indicate the total number of strengths and weaknesses you individually presented to the group.
_____

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the last 10 minutes of the study.

	Very Strongly Disagree 1	2	3	4	5	6	Very Strongly Agree 7
I felt that I was able to hold several conversations simultaneously.	O	O	O	O	O	O	O
I felt that I was able to re-examine messages at a later time after they had been communicated.	O	O	O	O	O	O	O
I felt that I had many different ways to acknowledge and reply to messages from other team members.	O	O	O	O	O	O	O
I felt that I was able to rehearse my messages before communicating them to other team members.	O	O	O	O	O	O	O
I felt that I was able to acknowledge and reply to messages as soon as I received them from other team members.	O	O	O	O	O	O	O
I felt that I was able to monitor and coordinate multiple conversations at the same time.	O	O	O	O	O	O	O
I felt that I had a variety of verbal and non-verbal ways to choose from when communicating messages.	O	O	O	O	O	O	O
I felt that I was able to instantaneously respond to messages if I so desired.	O	O	O	O	O	O	O
I felt that I was able to process messages again once they had been communicated.	O	O	O	O	O	O	O
I felt that I was able to fine tune my messages before they were communicated.	O	O	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you used the following Facebook applications during the last 10 minutes.

	Not at All	Very Rarely	Rarely	Often	Very Often
Messaging	O	O	O	O	O
Chat	O	O	O	O	O
Photos	O	O	O	O	O
Video	O	O	O	O	O
Posted Items	O	O	O	O	O
Notes	O	O	O	O	O
Events	O	O	O	O	O
Groups	O	O	O	O	O
Discussion Board	O	O	O	O	O
Wall	O	O	O	O	O

Final Survey

Thank you for participating in the study. Your participation in this experiment is purely voluntary. If you choose not to participate in this study or withdraw from this experiment you will experience no penalty. Since some of the questions asked in this survey may be used during data analysis, your responses are not confidential, but no one outside the research team will be able to link your specific responses to you. The results of this research will be published, but your name will not be used.

Using the boxes before each feature, please rank-order each category from 1 (best solution) to 8 (worst solution).   Even if your team reached a consensus, you are not required to provide that solution if you do not feel that it is the best rank-ordering of alternatives.

Did your group reach a consensus (please circle)?   Yes   No

Type of Restaurant	Price Point	Rank
Mexican	$5-$7	
American	$14-$16	
American	$5-$7	
Chinese	$14-$16	
Italian	$14-$16	
Italian	$11-$13	
Chinese	$5-$7	
Italian	$5-$7	

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INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the last 10 minutes of the study.

	Very Strongly Disagree						Very Strongly Agree
	1	2	3	4	5	6	7
I felt that I was able to hold several conversations simultaneously.	O	O	O	O	O	O	O
I felt that I was able to re-examine messages at a later time after they had been communicated.	O	O	O	O	O	O	O
I felt that I had many different ways to acknowledge and reply to messages from other team members.	O	O	O	O	O	O	O
I felt that I was able to rehearse my messages before communicating them to other team members.	O	O	O	O	O	O	O
I felt that I was able to acknowledge and reply to messages as soon as I received them from other team members.	O	O	O	O	O	O	O
I felt that I was able to monitor and coordinate multiple conversations at the same time.	O	O	O	O	O	O	O
I felt that I had a variety of verbal and non-verbal ways to choose from when communicating messages.	O	O	O	O	O	O	O
I felt that I was able to instantaneously respond to messages if I so desired.	O	O	O	O	O	O	O
I felt that I was able to process messages again once they had been communicated.	O	O	O	O	O	O	O
I felt that I was able to fine tune my messages before they were communicated.	O	O	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you used the following Facebook applications during the last 10 minutes.

	Not at All	Very Rarely	Rarely	Often	Very Often
Messaging	O	O	O	O	O
Chat	O	O	O	O	O
Photos	O	O	O	O	O
Video	O	O	O	O	O
Posted Items	O	O	O	O	O
Notes	O	O	O	O	O
Events	O	O	O	O	O
Groups	O	O	O	O	O
Discussion Board	O	O	O	O	O
Wall	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement about the study.

	Very Strongly Disagree						Very Strongly Agree
	1	2	3	4	5	6	7
More time for discussion would have led to more ideas.	O	O	O	O	O	O	O
More time for discussion would have led to a better rank-ordering.	O	O	O	O	O	O	O
I enjoyed working with the members of my group.	O	O	O	O	O	O	O
I would like to work with the other group members again.	O	O	O	O	O	O	O
My opinion of individual strengths and weaknesses changed as a result of the inputs from other group members.	O	O	O	O	O	O	O
My personal views are the same as those I expressed publicly during the group discussion.	O	O	O	O	O	O	O
When determining my final solution, I considered the opinions of other group members.	O	O	O	O	O	O	O
My final solution was influenced by the opinions of others.	O	O	O	O	O	O	O
My opinions of the best solution changed based on the group discussion.	O	O	O	O	O	O	O
I altered my rank-ordering of alternatives due to requests from group members.	O	O	O	O	O	O	O

INSTRUCTIONS: Please fill in the circle that best indicates the extent to which you agree or disagree with each statement.

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
It is important to me that those who know me can predict what I will do.	O	O	O	O	O	O	O
I want to be described by others as a stable, predictable person.	O	O	O	O	O	O	O
The appearance of consistency is an important part of the image I present to the world.	O	O	O	O	O	O	O
I typically prefer to do things the same way.	O	O	O	O	O	O	O
I make an effort to appear consistent to others.	O	O	O	O	O	O	O

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INSTRUCTIONS: Read each statement carefully. For each statement, choose the option that best represents your opinion of your team.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There was a lot of unpleasantness among members of this team.	○	○	○	○	○
The longer we worked together as a team the less well we do.	○	○	○	○	○
Every time someone attempted to correct a team member whose behavior was not acceptable, things seem to get worse rather than better.	○	○	○	○	○
My relations with other team members were strained.	○	○	○	○	○
I very much enjoyed working with my teammates.	○	○	○	○	○
My teammates had a good command of the language.	○	○	○	○	○
My teammates were sensitive to others' needs of the moment.	○	○	○	○	○
My teammates typically got right to the point.	○	○	○	○	○
My teammates dealt with others effectively.	○	○	○	○	○
My teammates were good listeners.	○	○	○	○	○
My teammates expressed their ideas clearly.	○	○	○	○	○
My teammates usually responded quickly.	○	○	○	○	○

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Protocol for AFIT New Media Experiment
Updated 11/18/08

PLEASE FOLLOW THE PROTOCOL AS CLOSELY AS POSSIBLE.

Bolded text *= things you say*
Unbolded = things you do

Face-to-Face Experiment
1. As Participants enter the room, hand each individual a copy of *PANAS* and a pen.
    -   Once everyone has completed the *PANAS*, collect the survey.
    -   Make sure each person has completed the *Restaurant Task*. Do not collect at this time.
    -   Make sure each person has written their subject identification number at the top of the sheets.

    Welcome and thank you for volunteering to participate in this study. At this time, please turn off all electronic devices such as cell phones, blackberries, etc.

    This investigation will examine a series of attributes under consideration for a potential new restaurant in East Lansing, MI. The total time for the study will be no more than 50 minutes.
    Before starting, I will need you to complete the survey I handed you as you walked into the room. Please make sure to write your student ID number at the top of the paper. Once complete, raise your hand and I will collect the survey. Please hold onto the *Restaurant Task*. I will be collecting this later in the study.

2. Hand each individual a copy of the *Conveyance Instructions (FTF).*

    The information in the instructions is the same as in the task that you have previously completed individually. Imagine that you are a business consultant advising the owner for a new restaurant on the Grand River strip just north of MSU. You need to provide the best advice for maximizing returns on this new venture. The owner is asking that you select and rank order a pre-determined set of alternatives.

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You and your team members will be given 10 minutes to discuss the pros and cons of each of the alternatives. For example, a team member can list a pro by saying "I believe Italian is the best solution because there are not enough Italian restaurants on the Grand River strip".

The purpose of this time is to list as many pros and cons as possible. All ideas are valid during this phase of the study, so you are NOT permitted to expand on or critique the pros and cons presented by other team members. Teams should not attempt to reach a consensus on the rank-ordering; time will be given for this later in the study. Team members are only allowed to communicate verbally, so you can only use your pen to keep track of the number of pros and cons you shared.

After 10 minutes, you will be asked to complete a survey. This survey will ask you to record the number of strengths and weaknesses you personally discussed with the team, so it is important that you keep track of the total number of ideas you individually presented by filling in the circles on your paper. Each circle represents one pro or con that you individually shared with your team.

If everyone agrees that they understand the instructions, you are now permitted to begin. You have 10 minutes for this phase of the study.

3. Once everyone agrees that they understand the instructions, begin the conveyance phase of the study.
   - Start the clock
   - Monitor the conversation to ensure that team members are only sharing pros and cons and not expanding on or critiquing ideas.
   - Make sure Participants only use pens to fill in circles.

4. After 10 minutes have elapsed, the conveyance phase of the study is complete.
   - Hand each individual a copy of *Conveyance Survey (FTF)*.
   - Once everyone has completed the survey, collect the *Conveyance Instructions (FTF)* and *Conveyance Survey (FTF)*.
   - Collect the *Restaurant Task*.
   - Make sure each person has written their subject identification number at the top of the sheets.

   Ok, your 10 minutes is now up. Please stop talking. I will now be handing you a short survey. Once you are finished, raise your hand and I will collect the survey and instructions. I will also be collecting the *Restaurant Task* at

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this time. Make sure to write your student ID number at the top of the papers.

5. Hand each individual a copy of the *Convergence Instructions (FTF)*.
   - Do not let the teams know how much time they have for this phase of the study.

   Now that you and your team have discussed the pros and cons for each alternative, your group is now encouraged to reach a consensus on the rank-ordering of alternatives. Remember that you have been asked to provide the best advice for maximizing returns on this new venture. You are permitted to expand on or critique the ideas presented by other team members. Team members are only allowed to communicate verbally, so the use of pens is prohibited until the conclusion of the study.

   Once discussion is complete, you will be asked to record your opinion of the best rank-ordering of alternatives. You will also be given a final survey at this time.

   If everyone agrees that they understand the instructions, you are now permitted to begin.

6. Once everyone agrees that they understand the instructions, begin the convergence phase of the study.
   - Start the clock.
   - Make sure no one uses a pen during this process.

7. After 10 minutes have elapsed, the convergence phase of the study is complete.
   - Hand each individual a copy of *Final Survey (FTF)*.
   - Once complete, collect the pens, *Convergence Instructions* and *Final Survey*.
   - Make sure each person has written their subject identification number at the top of the sheets.

   Ok, your time is up. Please stop talking. I will now be handing you a final survey. Once you are finished, raise your hand and I will collect the survey and instructions. Make sure to write your student ID number at the top of the papers.

8. Once all documentation is collected, dismiss the Participants.

   Thank you for participating in this study. You are now dismissed.

<u>Facebook Experiment</u>
1. As Participants enter the room, hand each individual a copy of *PANAS, Facebook Login Info* and a pen.
   - Once everyone has completed the *PANAS*, collect the survey.
   - Make sure each person has completed the *Restaurant Task*. Do not collect at this time.
   - Make sure each person has written their subject identification number at the top of the sheets.

   Welcome and thank you for volunteering to participate in this study. At this time, please turn off all electronic devices such as cell phones, blackberries, etc. Please do not touch the computers until instructed to do so.

   This investigation will examine a series of attributes under consideration for a potential new restaurant in East Lansing, MI. The total time for the study will be no more than 50 minutes.
   Before starting, I will need you to complete the survey I handed you as you walked into the room. Please make sure to write your student ID number at the top of the paper. Once complete, raise your hand and I will collect the survey. Please hold onto the *Restaurant Task*. I will be collecting this later in the study.

2. Ensure that each individual's Facebook profile is properly setup.

   At this time, you will need to log into your Facebook profile for this study. Please use the login info (e-mail address and password) that was given to you as you entered the room.

   The researchers have created your account and added you to a Facebook group and also added your four teammates as "friends". Please confirm that you are "friends" with four other individuals and that you are a member of a group. If there are any posts on your profile or group page, please delete them. Once complete, raise your hand to let me know that your Facebook profile is properly setup for the study.

3. Hand each individual a copy of the *Conveyance Instructions (FTF).*

   The information in the instructions is the same as in the task that you have previously completed individually. Imagine that you are a business consultant advising the owner for a new restaurant on the Grand River strip just north of MSU. You need to provide the best advice for maximizing returns on this new venture. The owner is asking that you select and rank order a pre-determined set of alternatives.

You and your team members will be given 10 minutes to discuss the pros and cons of each of the alternatives. For example, a team member can list a pro by saying "I believe Italian is the best solution because there are not enough Italian restaurants on the Grand River strip".

The purpose of this time is to list as many pros and cons as possible. All ideas are valid during this phase of the study, so you are <u>NOT</u> permitted to expand on or critique the pros and cons presented by other team members. Teams should not attempt to reach a consensus on the rank-ordering; time will be given for this later in the study. You are only allowed to use the Facebook applications pre-loaded onto your profile.

After 10 minutes, you will be asked to complete a survey. This survey will ask you to record the Facebook applications you use during this phase of the study. You will also be asked to record the number of strengths and weaknesses you personally discussed with the team, so it is important that you keep track of the total number of ideas you individually presented by filling in the circles on your paper. Each circle represents one pro or con that you individually shared with your team.

If everyone agrees that they understand the instructions, you are now permitted to begin. You have 10 minutes for this phase of the study.

4. Once everyone agrees that they understand the instructions, begin the conveyance phase of the study.
    - Start the clock
    - Monitor the conversation to ensure that team members are only sharing pros and cons and not expanding on or critiquing ideas.

5. After 10 minutes have elapsed, the conveyance phase of the study is complete.
    - Hand each individual a copy of *Conveyance Survey (FTF)*.
    - Once everyone has completed the survey, collect the *Conveyance Instructions (FTF)* and *Conveyance Survey (FTF)*.
    - Collect the *Restaurant Task*.
    - Make sure each person has written their subject identification number at the top of the sheets.

    Ok, your 10 minutes is now up. Please stop typing and do not touch the computer. I will now be handing you a short survey. Once you are finished,

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raise your hand and I will collect the survey and instructions. I will also be collecting the _Restaurant Task_ at this time. Make sure to write your student ID number at the top of the papers.

6. Hand each individual a copy of the _Convergence Instructions (FTF)._
   - Do not let the teams know how much time they have for this phase of the study.

   Now that you and your team have discussed the pros and cons for each alternative, your group is now encouraged to reach a consensus on the rank-ordering of alternatives. Remember that you have been asked to provide the best advice for maximizing returns on this new venture. You are permitted to expand on or critique the ideas presented by other group members. You are only allowed to use the Facebook applications pre-loaded onto your profile.

   At the conclusion of the study, you will be asked to record your opinion of the best rank-ordering of alternatives. You will also be given a final survey at this time. It is important that you keep track of the Facebook applications that you use during this second phase of the study.

   If everyone agrees that they understand the instructions, you are now permitted to begin.

7. Once everyone agrees that they understand the instructions, begin the convergence phase of the study.
   - Start the clock.

8. After 10 minutes have elapsed, the convergence phase of the study is complete.
   - Hand each individual a copy of _Final Survey (FTF)._
   - Once complete, collect the pens, _Convergence Instructions_ and _Final Survey_.
   - Make sure each person has written their subject identification number at the top of the sheets

   Ok, your time is up. Please stop typing and do not touch the computer. I will now be handing you a final survey. Once you are finished, raise your hand and I will collect the survey and instructions. Make sure to write your student ID number at the top of the papers.

9. Participants will need to delete any information that has been posted to their profile, wall, and group pages.

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Before leaving, I will need each of you to delete anything that has been posted on your profile, wall, and group pages. Your Facebook profile should look exactly as it did when you initially logged on. Once complete, please raise your hand.

10. Once all documentation is collected and Facebook profiles are restored, dismiss the Participants.

Thank you for participating in this study. You are now dismissed.

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Vita

1st Lieutenant J. Paul Conner was born in Washington, DC. In June 2000, he graduated from Loudoun Valley High School in Purcellville, Virginia. In August of the same year, he entered Virginia Polytechnic Institute and State University where he graduated Cum Laude with a Bachelor of Science degree in Civil Engineering and was commissioned May 2005.

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14. ABSTRACT

     While social network sites (SNS) are a popular form of new media, the literature has not investigated the social influence of these sites. Using a mixed method approach of qualitative interviews and a laboratory experiment, this study tests a process model predicting the effects of communication processes and technology on social influence. This model suggested that SNSs may be more effective at social influence than face-to-face communication.

     A qualitative study was performed to determine whether the hypotheses were plausible whereby it was suggested that SNSs may influence others and SNSs might be a more effective when compared to others. Qualitative results illustrate that social network sites have several strengths over traditional communications mediums and that they can be used to influence others.

     The results of the experiment found that face-to-face communication was more effective than social network sites at influencing others. The data implies that sharing more ideas, when combined with slower communications mediums such as SNSs, can actually result in less effective social influence attempts. However, Facebook participants overwhelmingly felt that they needed more time to complete tasks. Thus, it is not yet possible to reject the theory that SNSs have the potential to be more influential than face-to-face communication.

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