TECHNOLOGY LEADERS' PERCEPTIONS OF SOCIAL MEDIA

by

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(Under the Direction of Libby V. Morris)

ABSTRACT

This study examines the perceptions of the technology leaders in the University System of Georgia (USG) as it pertains to social media. Social media is a fast growing phenomenon that could possibly have pedagogical potential in the right environment. A questionnaire was completed by 24 of the Chief Information Officers (CIOs) in the USG and 9 in-depth interviews were conducted to examine perceptions of the efficacy and security of social media on college campuses. Findings showed that the majority of technology leaders had concerns over the use of social media on campus, but thought it had potential as a pedagogical tool. Findings also indicated that the roles and responsibilities of CIOs in this study were inconsistent with those in previous studies of CIOs in higher education and may account for some of the responses.

INDEX WORDS: Social media, technology, higher education, Facebook, CIO

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DEDICATION

This study is dedicated to the memory of Dr. J. Douglas Toma.

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CHAPTER 1

INTRODUCTION

With the high demand for technology use by students and the relatively slower adoption by faculty, students feel less prepared to use technology as a business tool in the workforce than even a year ago, and 95% of today's high school students expect to use technology in college during all or some of their classes (Caraher, 2010). Social media has become the Internet's water cooler and the communication method of choice for many college students. However, it is not clear if the gap between the recreational use and the pedagogical use of social media can be reduced or even bridged without understanding the attitudes of faculty and administrators toward the use of social media in higher education.

A recent article on modeling the educational use of Facebook explains that social networking sites support collaborative learning, engage individuals in critical thinking, and enhance communication and writing skills through active member work in personalized environments (Mazman & Usluel, 2010). In addition, social networks can be used for connectivity and social support, collaborative information discovery and sharing, content creation and knowledge and information aggregation and modification. These are all desirable characteristics of social media usage in the educational environment, but there are also some undesirable aspects of its use as well with security of information being the most prominent one.

Social media, also called social networking, consists of web and mobile technologies that allow the user to collaborate and share content with friends, family, and other groups. It is usually done in an asynchronous manner on a centralized server where members would post information on a virtual bulletin board and read and reply to others' posts. In addition, rich media

content can also be shared on the site including pictures, videos, documents, and audio files. A member of the social media site can see posts from others who are their "friends," as well as the friends of their friends. The number of posts available to view grows exponentially as the number of friends increase. Facebook, the largest and most popular social networking site, provides statistics on the utilization of its site. According to the self-reported statistics, Facebook has over 800 million users who post over 2 billion messages and upload over 250 million pictures each day to its site. It also claims to have over 350 million active users that connect to the social network through smartphones, tablets, and other mobile devices (Statistics, 2011). According to a recent Pew Research Center study (2010), 86% of adults age 18-29 use social media sites regularly. This is precisely the age group that will be entering college with the expectation of continued, if not accelerated, social media use. This increased usage, at least on the campus network, is of concern to technology leaders in postsecondary education.

The technology leaders at colleges and universities are responsible for ensuring the proper use of technology and the security of personal, proprietary, and research data that are stored on university equipment or used in the campus environment. These technology leaders have the added responsibility of trying to accommodate faculty and student desires to use technology for more effective teaching and learning, including using social media in the academic environment. These two primary responsibilities are sometimes at odds with each other and create conflicts in the attempt to accommodate both simultaneously. With the influx of students who use social media regularly and the popularity of social networking sites increasing, technology leaders have to predict and prepare for the impact of social media on the security of the campus network, on personally identifiable information (PII), and on student record data.

This study sought to explore the opinions and perceptions of technology leaders in higher education toward social media in the college environment. While numerous articles and publications discuss the benefits, possibilities, and concerns over the use of social media in higher education, none do so from the perspective of the campus leader in technology, yet his opinion may be vitally important in influencing the trajectory of social media use on campus. These administrators face issues daily around networking, security, enterprise applications, computer support, and technology training. The USG is comprised of 35 institutions and each has a Chief Information Officer (CIO) or equivalent top technology leader who oversees the technology implementation, maintenance, data security and integrity, and network access. Many of these technology leaders report to a vice president or to the president, and all will have influence to a greater or lesser degree on the adoption of technology for the campus overall. Many technology leaders came up through the ranks and bring high technical expertise to their position, while many fewer come from the academic side of higher education. Most CIOs have not been faculty members and have little experience in the pedagogical use of technology; yet, they are positioned in the hierarchy to influence the pedagogical use of technology. Therefore, adoption of certain types of classroom technology may not be favored by a security-minded technology leader, and the instructional faculty may find it difficult to make a case for technology that does not meet the criterion for safety espoused by the technology leader. Clearly, reaching agreement for various types of technologies across the administrative and instructional leaders within the academy can be difficult. While social media is tremendously popular, it is generally perceived to be inherently insecure in terms of virus entry points and the potential for identity theft due to its increasingly ubiquitous usage and the willingness of people to readily share personally identifiable information (PII) on social networking sites.

This study is important for it will add to the relatively small set of literature currently available on social media, campus practices, and concerns about social media on campus from the perspective of the chief information officers in a large state system of higher education. The primary research questions included the following:

1. How do institutional technology leaders perceive the use of social media in higher education?
2. What are the perceived benefits and/or drawbacks of using social media in education?
3. What are technology leaders doing with respect to social media usage?

To find the answers to these research questions, a qualitative study was conducted. This study examined the perceptions of technology leaders in the USG to see what they thought about social media in their environment and what they thought should or could be done about it. The study started with a questionnaire sent to all 35 CIOs in the University System of Georgia. The questionnaire asked general demographic questions, as well as some questions more specific to technology and social media to get a better understanding of how he or she felt about certain aspects of social media. From the results of the questionnaire, specific individuals were chosen to participate in follow-up, one-on-one interview sessions to explore more deeply their thoughts on social media. The interview responses were analyzed and organized into major themes based on open coding initially and then refined through analytical coding as described by Merriam (2009). The results of the interview analyses were then summarized and reported along with key quotations supporting the findings. Finally, conclusions were drawn and implications identified.

The audience for this study could potentially be technology leaders in higher education, faculty, administrators, and students. Based on the results of this study and the commentary by the participants, other technology leaders may find that social media is so beneficial to the core

mission of their college or university that the security risk is somewhat mitigated, i.e., benefits outweigh risks. Others may conclude that the potential security risk from the widespread use of social media in instruction is just too great to allow the usage of social media on university networks. Faculty and administrators may benefit from this study by learning the different perspectives on the risks and benefits associated with social media and this should make them more aware of potential problems if its use is continued in the curriculum. Students may realize the potential security implications of social media use and become more cautious, better-informed users as a result.

This dissertation is organized as follows. Chapter two provides a historical narrative of how social networking began only a few years ago and includes the chronology and status of Facebook, the largest social networking site in the world. The second chapter also describes the role of the Chief Information Officer (CIO) as the top technology leader in organizations. The history and evolution of the role is discussed within the business context and how the higher education CIO holds some of the same characteristics, but diverged about thirty years ago to form a new set of traits specific to supporting the unique mission of higher education.

The third chapter explains the methodology of this study. It identifies the setting of the study, who the participants were, how the data for the study were collected, and how the data were then analyzed. Chapter four presents the finding of the study, including the results of the questionnaire and the personal interviews. Finally, chapter five concludes the dissertation by showing how the study answered the research questions, offering implications based on the results, and identifying topics for further research.

CHAPTER 2

REVIEW OF LITERATURE

Social networking is a relatively new phenomenon on the Internet with is roots dating back less than ten years ago. It has taken several forms over its short lifecycle and has evolved into what it is today. In mid to late 2003, the first forms of social networking began to appear in the form of dating websites. One particular site called Friendster revolutionized the industry when it incorporated a feature where a person could create a profile, add friends to their profile, and see friends of friends thereby creating the concept of a social "network" (Kirkpatrick, 2010). The idea was that people would be more apt to date the friends of their friends because they were known and could get introductions and referrals. Although this may have helped in the dating space, the concept of creating a network of friends was borrowed and used in a non-dating atmosphere to revolutionize the way people would communicate with each other over the Internet. Today, Facebook is the largest social networking site in the world with over 800 million users and a continued trajectory of immense growth (Statistics, 2011).

The section that follows summarizes the history of Facebook and looks at the limited studies that have been done concerning the use of social media in education. The next section looks at the history and evolution of the Chief Information Officer as well as some of the management models they utilize. Finally, the unique characteristics possessed by CIOs in higher education are explored.

Social Media

Merriam-Webster (2011) defines social media as forms of electronic communication through which users create online communities to share information, ideas, personal messages, and other content. By far, the biggest and most popular social media site on the Internet today is Facebook. Facebook was founded by Mark Zuckerberg in January 2004 while working in his dorm room with his friends and roommates at Harvard University. Zuckerberg, being a computer science major, had already created some web applications that were modestly successful at his home university, but he knew something was different about this one when four days after he launched it at Harvard, 650 students had registered. After only three weeks, there were 6,000 users and after opening it up to five other universities a week later, there were over 20,000 active users (Kirkpatrick, 2010). The exponential growth of Facebook was deliberately throttled by Zuckerburg to prevent server overloads by only allowing students at universities to use the site at first and only adding a few new ones on at a time. Eventually, when the appropriate funding was available to finance rapid expansion, Facebook opened to the entire world and has experienced sustained growth ever since.

Initially seen as a fad, it took several years for teachers and administrators to see the potential value of using the social networking platform for pedagogical use. It was seen as a distractor and a time-waster, but the popularity of social networking was undeniable and the potential reach to students compelling. As the current and upcoming generations of college students continued to embrace social networking and other Web 2.0 technologies, several studies looked at the possibility of using these technologies in a learning environment. One study tried to determine if the boundaries between learning spaces, work spaces, and private spaces could be broken down and where social spaces intersected and overlapped with learning spaces (Huijser,

2008). It was obvious that students were using these online spaces for entertainment, but the question was whether students would also accept social networking spaces for educational purposes or would it be the online equivalent of a teacher invading a student's "hang out" at the mall and trying to teach them geometry. If teachers could meet students where they spend so much of their time already and not be rejected, the whole student-learning paradigm could suddenly shift.

In his article on a new social context for information, Baston (2008) argues that, "If we accept that all learning is social, Web 2.0 may be more in step with learning reality than the book or the PC." Boyd and Ellison (2007) argue that what makes social networking sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks. This is contrary to the notion that social networking in its current capacity could be the catalyst for university programs that encourage students who do not know each other to collaborate or that it could replace the well-controlled and structured learning management systems (LMS) already in use today. In an LMS, faculty have complete control over all aspects of the learning environment whereas faculty have no control over commercial social networking environments.

In a formal LMS, the focus is on the course, subject, or forum discussion. Students send messages, documents, or participate in group discussions and are represented by those contributions. In social networking sites, the focus is on the individual. A person's profile can be updated with relevant information about the individual to include pictures and text, which makes that person always "present" in the environment. This concept called *transparency* gives students insight into each other's actions and persona encouraging cooperative learning (Dalsgaard & Paulsen, 2009). The socialization occurs when a person's personal page is connected to personal

pages of other individuals. Each individual builds a network of personal relationships and communications flow through those established relationships when updates occur on one or more of the other linked personal pages. Students are made aware of what others are doing through this type of transparency resulting in cooperative learning even though they might not be intentionally collaborating. If students are not aware of each other's activities, they might not make use of each other, especially in a completely online environment where students do not meet face-to-face and are typically more disconnected than an in-class environment (Dalsgaard & Paulsen, 2009).

Social networking sites, in particular Facebook, have been shown to support educational activities by making interaction, collaboration, active participation, information and resource sharing, and critical thinking possible (Mazman & Usluel, 2010). The educational usage of Facebook closely parallels the casual or non-educational usage. According to Mazman and Usluel, students indicated that they used Facebook to recount and reflect on their university experience similar to the way they would with other daily activities. They also indicated that they would exchange practical as well as academic information and exchange humorous or entertaining material, which supports the idea that utilizing Facebook in daily activities is closely related to its educational utilization. The perceived usefulness of Facebook is one of the major reasons for its rapid adoption and increase in number of users (Mazman & Usluel).

In addition to student perception, a recent study on the faculty perception of using social networking in the classroom revealed a general consensus that faculty did not want to be viewed by students as equals and the line that differentiates faculty from student seemed to fade with the use of social media (Sturgeon & Walker, 2009). However, faculty also believed anything that helps students feel more comfortable in the classroom environment, where they can feel a

connection with their instructors, opens the door to better understanding, better communication, and better learning. When faculty can see the kinds of activities their students are involved in on a personal level through the use of social networking, they can use that information to make connections in class, helping draw the student into the course a little better. According to Sturgeon and Walker (2009), students are twice as likely to participate in class and communicate with the instructor if they already have a relationship with them through Facebook.

Despite these studies advocating the use of social networking and the potential reach faculty may have to students, some faculty are not convinced that the challenges associated with it are worth the benefits, at least not without setting some boundaries. Schwartz (2010) suggests that faculty can make sensible decisions about what to post to social networking sites and fine-tune privacy settings, but for some, the challenge of being appropriately accessible is difficult. If faculty members add students as their "friends" on Facebook, the student's status updates automatically show up on their page. If a student updates their status with an indication of a homework problem, for example, the faculty member might not know if it is appropriate to respond, especially since the student did not contact them directly or may not specifically be asking for help. Moreover, it is unclear if faculty should feel compelled or required to respond and always be accessible to students at any time. Some faculty members feel that the student expectation of instant communication is higher if they are joined with faculty on a social networking site (Schwartz, 2010).

Bowers-Campbell (2008) noted that although some faculty may have concerns over appropriate usage, most students are embracing social media as an educational tool and acknowledge many benefits for them to do so. A study published in the *Journal of College Reading and Learning* in 2008 shows that Facebook usage might help developmental college

readers (Bowers-Campbell, 2008). Bowers-Campbell suggests that the more students believe in their ability to master a task, the more likely they are to succeed in that task (self-efficacy). Students placed in developmental reading classes may read at a basic proficiency and score lower on motivational constructs, but they are not necessarily dull or passive learners. The National School Board Association (2008) concluded that adolescents of the Net Generation are "beyond basic communications, many students engaged in highly creative activities on social networking sites and a sizeable portion of them are adventurous nonconformists who set the pace for their peers". Using Facebook in the classroom gives students a familiar, creative environment and provides opportunities for immediate positive reinforcement aiding in self-efficacy building (Bowers-Campbell, 2008).

The use of Facebook by college freshmen has also been used as a predictor of retention. The transition from high school to the first year of college can be a major adjustment. Although some students adapt quickly to the new environment, others feel threatened and overwhelmed. Some of those that feel threatened end up leaving the institution before they can cope with their feeling of discomfort making student retention an on-going challenge for colleges and universities (Ward, 2004). One study on student retention showed that if students get engaged with other students on Facebook and participate in other social activities immediately after arriving at college, they are more likely to persist (Morris, Reese, Beck, & Mattis, 2010). This study also showed that the more friends a student has on Facebook and the more they participate in online discussions, the greater the persistence rate.

Students report feeling more connected with their instructor when using social media and perceive the teacher as more credible if the teacher has high self-disclosure on sites such as Facebook (Mazer, Murphy, & Simonds, 2009). In the classroom, teachers spend a considerable

amount of time covering course content, but they are also likely to self-disclose by sharing information about themselves, telling personal stories, and conveying their personal beliefs. Teven and Hanson (2004) suggest that teachers who relate well to their students are more likely to be perceived as a credible source. This directly applies to an online environment like Facebook when a teacher self-discloses certain information, such as personal pictures, messages from friends and family, and opinions on certain topics. Students might perceive similarities between themselves and the instructor, which helps the student better relate to the instructor and provides more perceived credibility (Mazer, Murphy, & Simonds, 2009). There can also be a negative effect on teacher credibility if the online persona does not match the in-class personality and attitude. For example, if a teacher exhibits a relaxed disposition on Facebook by posting informal pictures and entertaining messages, but then operates their classroom in a strict, formal manner, confusion may result and lower teacher credibility may be perceived by the students (Mazer, Murphy, & Simonds, 2009).

Aside from the direct faculty and student benefit, college and university officials have started to use social media for advertising and marketing as well. Massive social media advertising campaigns have proven effective for colleges and universities and analysis of these campaigns show that the institutions that invest the most in social media ads spend less per student on marketing than do campuses that stick to traditional strategies (Carter, 2010). The potential to reach alumni, students, and parents who are already online using social media is compelling given its near ubiquity. Once a student matriculates, some colleges and universities are trying to enhance the college experience by providing access to special academic supplements to Facebook. One such supplement, CampusLive, allows students to view relevant academic news from their institutions, connect with peers, form study groups, find local

restaurants, and view personal information such as course schedule, dorm room assignment, etc. among other things (Carter, 2010). This kind of online social integration is meant to give the student a more comfortable, inviting, and friendly college experience that some find lacking, especially during their first year.

One British university is taking the academic use of social media to a new level. The London School of Business and Finance has created a Facebook application that will allow students to get an MBA degree totally online through Facebook (Kaya, 2010). The course includes interactive message boards, a note-taking tool, and video lectures and discussions with insiders from industry giants like Accenture Management Consulting and Deloitte. The model is different from most other online degree models and may set the standard for future social media programs. It allows the student to access all of the course material free of charge and pay the college only when they are ready to sit for their exams. This model allows students to "test drive" the online course before committing to payment, which school administrator's hope will increase graduation rates (Kaya, 2010).

Even with the pedagogical, outreach, and marketing potential of social media, it is not without its drawbacks. Sarrel (2010a) suggests that the biggest concerns of the widespread use of social media on college campuses are that of security and the threat of privacy violations. At a time when budgets are being strained and the funds for security and protection are waning, the threats of cyber-attacks are on the rise. Penetration tools and exploit kits are becoming more sophisticated and even commercial in nature so that just about anyone can use them without having to be a programmer or experienced hacker (Sarrel, 2010b). Most are no match for the well-fortified campus network except for the occasional newly discovered vulnerability that is exploited before it can be mitigated. However, with the increased utilization of social networking

sites such as Facebook, the tightly controlled campus environment is suddenly shifted to an open public venue and is largely out of the control of faculty and Information Technology (IT) staff. The security of personal information is primarily left to the social networking site, which is contrary to its mission of sharing information and not protecting it. Mark Zuckerburg, the creator of Facebook, is quoted as saying “The age of privacy is over” (Sarrel, 2010a).

In late 2009, IBM reported that more malware, malicious software designed to secretly access a computer system without the owner’s consent, was found on legitimates sites, such as Playstation.com, than on suspicious sites. Social networking sites such as Facebook and Twitter create a false sense of trust between users and provide excellent vectors of attack (Sarrel, 2010b). The proliferation of add-on applications to social networking sites is adding to the security complexity. Most of these applications access information stored in the users social networking profile such as name, date of birth, address, and phone number and use that information within the application. While the owner of the social networking site may have some control over the information that is stored within a user’s profile and how it is used, once an add-on application accesses this information, the security of that information is then transferred to the creator of the application. Since add-on applications are relatively easy to create, novice programmers can design and implement them with little investment in time and no quality checking. If security is not incorporated into the application it may be vulnerable to attack or, worse, it may be malicious and proceed to steal information and use it for identity theft purposes.

Not only are the theft of information and the potential for viruses and other types of malware of major concern when using social networking sites, but also of concern is the practice of users putting too much personal information online for anyone to see. Some sites such as Facebook allow a user to restrict access to some information from others that are not “friends,”

but if a user does not set the attributes properly or uses a site that does not contain privacy settings, all information about the user may be visible by anyone. Employers and recruiters are increasingly looking online to seek information about potential employees before hiring and even after hiring in some cases. If recent college graduates seeking employment have compromising pictures of themselves at parties or doing inappropriate things, it may diminish their chances for employment. The media is full of these types of anecdotal stories like the chemical engineering student that lost a summer internship when an executive from the company viewed his Facebook profile and found one of his interests was “blowing things up” or the two swimmers that lost athletic scholarships because of disparaging comments they made about their coach on Facebook (Fleming, 2008).

The dangers of online social networking can also transcend disciplinary actions and reputational harm. Predators often pose as peers and coax unsuspecting teens to meet them in person where sexual assaults frequently occur (Fleming, 2008). Cyber-bullying also takes place on social networking sites and sometimes ends in catastrophe when the victim takes their own life, although not very common and is usually isolated to younger, grade school students. College administrators are still trying to determine how to handle the unique issues posed by public display of their student’s indiscretions or the inappropriate use of social networking. Some are starting to develop very thoughtful policies about these sites while others are wondering what all of the fuss is about. Some colleges and universities are using content captured from social networking sites in judiciary procedures and others provide information to students on the risks during freshman orientation. Some prefer to take a hands-off approach and claim that they do not monitor Facebook or other social networking sites, but they may act on any violations of law or university policy if it is brought to their attention (Fleming, 2008). However institutions choose

to respond, it is clear that students are increasingly using social networking and universities can help by providing information to students on the associated risks, establishing policies and guidelines for its use on campus, and protecting the personally identifiable information and network infrastructure to the extent possible.

The Chief Information Officer

The higher education official most often charged with the security and protection of information technology assets is the campus technology leader. This position has been called many things such as coordinator, manager, and director, but the most common position title today is Chief Information Officer (CIO). This title was borrowed from the corporate sector where titles like Chief Executive Officer and Chief Business Officer prevailed. The Chief Information Officer was established to provide strategic direction and planning for technology and to bridge the gap between management and technology. As noted below, however, the CIO roles in business and education did not evolve the same way over the past thirty years, although some core attributes did remain constant between the two.

The exact role of the CIO is determined by many things such as size of institution, type of institution, industry, and scope of responsibly. Synnott and Gruber (1981) identified nine roles (Table 1) that they suggested would make an effective CIO at the organization-wide level. Within each sector, the CIO function is significantly shaped by the primary mission and culture of the organization. Regardless of the sector, the evolution of the CIO function is driven by the need to focus information resources on the primary mission of the organization. In business, the CIO must focus on using information resources to increase shareholder value, compete for profits, and provide a return on investment (Penrod, Dolence, & Douglas, 1990).

Table 1

Synnott and Gruber's 9 Roles of an Effective CIO

Roles		
Manager	Strategic Planner	Change Agent
Proactivist	Politician	Integrator
Information Controller	Staff Professional	Futurist

Note: From "The emerging chief information officer," by W.Synnott & W. Gruber, 1981, *Information Resource Management, 3*(1), 21-35.

provide a return on investment (Penrod, Dolence, & Douglas, 1990). The CIO was viewed in business during the late 1980s as the savior who was to align the worlds of business and technology and were described as businessmen first, managers second, and technologists third (Synnott, 1987). They became a member of top management participating in organizational strategy development making them more managerially oriented executives than technical managers. At the time, there were high expectations for implementing strategic systems that would be difficult to deliver, and they had higher than average corporate dismissal rates as compared with other top executives (Grover, Seugn-Ryul, & Lee, 1993).

A study of Chief Information Officer roles, compared to those of other executive level position, revealed that the uniqueness of the IT specialty and how it influences the role requirements of CIOs. However, the study showed that senior executives in the finance department showed significant similarity with those in IT in terms of relative importance of managerial roles (Grover, Seugn-Ryul, & Lee, 1993). According to Mintzberg's findings in his study of managerial roles (Table 2), production managerial jobs require decisional roles, such as entrepreneur and resource allocator, to a greater extent than the other roles (Mintzberg, 1975). One possible explanation for the similarities between IT and finance may be their common

Table 2

Mintzberg's 10 Managerial Roles

Category	*Role*	*Activity*
Informational	Monitor	Seek and receive information, scan papers and reports, maintain interpersonal contacts
	Disseminator	Forward information to others, send memos, make phone calls
	Spokesman	Represent the unit to outsiders in speeches and reports
Interpersonal	Figurehead	Perform ceremonial and symbolic duties, receive visitors
	Leader	Direct and motivate subordinates, train, advise and influence
	Liaison	Maintain information links in and beyond the organization
Decisional	Entrepreneur	Initiate new projects, spot opportunities, identify areas of business development
	Disturbance Handler	Take corrective action during crisis, resolve conflicts amongst staff, adapt to external changes
	Resource Allocator	Decide who gets resources, schedule, budget, set priorities
	Negotiator	Represent department during negotiations with unions, suppliers, and generally defend interests

Note: From “The manager's job: Folklore or fact,” by H. Mintzberg, 1975, *Harvard Business Review, 53*(4), p. 50.

organization of information functions. Another is its uniqueness; while manufacturing and sales are considered core business functions, accounting, finance and IT departments are usually

considered support functions. At the time of Grover, Seugn-Ryul, and Lee's study, the entrepreneur role was ranked as the most important role of the CIO with spokesman ranking second in importance, unlike other functional executives.

Even though the titles may be the same and the desired roles and attributes similar, there are still significant differences between CIOs in business and higher education. For example, the role of organizational liaison for technology would have the higher education CIO interacting with young adult students to fulfill that role while the corporate CIO would probably be much more removed from the company's consumers. Higher education is a unique industry having many components that are different or not found in other industries such as academic culture, external accrediting agencies, a shared governance structure, and a multifaceted mission of teaching, research, and service. These differences create a very complex and challenging working environment for higher education CIOs. In higher education, the CIO must focus on the institution's educational mission of supporting better teaching, research and scholarship as well as improving administrative systems.

As a result of rapidly changing technology and its prolific use in education, the CIO position in higher education has evolved from a technical person holding a managerial role to an education and business executive assuming the technical post (Brown, 2006). The required roles have also evolved from Mintzberg's (1975) initial set of management roles to a smaller, more refined subset of roles that more define the CIO in higher education. These roles now include (a) business partner, (b) provider of classic IT support, (c) overseer of IT contracts, (d) integrator, (e) informaticist and IT strategist, and (f) IT educator. An evaluation of these roles as perceived by the management teams associated with the CIOs revealed the most important of the roles were the management of IT contracts and providing classic IT support (Brown, 2006). It is

important to note that even though there is much overlap, the two highest ranking Mintzberg roles of entrepreneur and spokesman were not even mentioned as important roles for today's higher education CIOs. However, the study did conclude that the CIO still needs to maintain executive level membership to not only maintain regular interaction with other executives, but also to gain direct insight into the challenges facing the organization. Furthermore, the CIO could educate the management team on IT capabilities and limitations and lend early IT expertise to the institution's strategy process (Cartwright, 2002).

The most sought after traits in a CIO in higher education are leadership and management skills, a visionary capacity, the ability to marshal technology as a strategic resource, and the ability to bring computing and telecommunications under control (Penrod, Dolence, & Douglas, 1990). The CIO must be articulate and capable of persuading employees to embrace change. Not only does he or she need to be a good listener, but they also must be capable of change, regularly revising fundamental assumptions and patterns. But, there is no well-defined career path for the CIO, nor is there any certification, degree, or even common body of knowledge that one should have mastered in order to fulfill this kind of position effectively (Hawkins, 2004). Although there are a number of pathways to the position of CIO, one study in the early 1990s finds that the technical route is the least traveled (Penrod, Dolence, & Douglas, 1990). Almost half of the CIOs surveyed for the Penrod et al. study indicated they had a previous administrative background and almost forty percent indicated that they were from the academic ranks. That left only about thirteen percent that reported having a technical background.

As the position of CIO continues to evolve, some institutions are seeing IT now as more operational and are adjusting scope, responsibility, and titles as a result. Massachusetts Institute of Technology, for example, recently changed its long held technology leader title from Vice

President to “head of information systems and technology” (Young, 2010). That removes the technology leader from the president’s cabinet and from strategic interaction with the other executives. The University of Chicago instituted a similar move last year and Cornell University plans a similar move soon (2010). Some of the logic behind the moves seems to be that since technology now effects every part of the university, maybe more top executives, and even faculty members, should be making software and networking decisions, while the day to day operations should be handled by lower-ranking managers.

One of the most controversial articles written in the past decade on IT leadership is titled “IT Doesn’t Matter” (Carr, 2003). It was written by the editor of the *Harvard Business Review,* but unlike the name implies, the argument is not whether IT as a whole matters. It looks critically at the structure of IT in the organization and more specifically at the top-level technology leader. The author suggests that once a technology becomes ubiquitous like electricity and telephone service, it becomes a commodity and offers no competitive advantage to the institution. If there is no competitive advantage, it is no longer strategic and thus becomes operational. Operational services are essential, but do not require an executive seat at the cabinet level. Therefore, the technology leader does not need to be an executive, but only a manager and director of the technology (Carr, 2003).

This article created a huge backlash of reaction from the IT community as they hurriedly tried to defend their title, position, and salary. Some were mere emotional reactions while others were well thought out in their response. Seven years later, the article is still being quoted and argued from both sides with no immediate resolution imminent. In either case, the technology leader is still the one ultimately responsible for the secure and innovative use of technology on college campuses and their perceptions of the usage, be it positive or negative, can be useful.

As the role of the CIO continues to evolve, so too does the technology that the CIO must manage. Social media becomes the common denominator when communicating with individuals or groups of individuals on the Internet and the near ubiquity of it, at least among college-aged students, makes it almost impossible for the technology leader to ignore. In order to gain insight into what the higher education CIO thinks about and does with respect to the use of social media on a college campus, the CIOs in the University System of Georgia were studied and asked to reveal their perceptions. The way in which this study was designed and carried out is discussed in the next chapter and the results of the study are identified in chapter four.

CHAPTER 3

METHODOLOGY

The purpose of this study was to examine the pedagogical use of social media as perceived by the technology leaders in the University System of Georgia (USG). The research questions were addressed using qualitative research methods, as described in Merriam (2009). This study was not meant to be a microanalysis of a particular issue, and the results should not be used to apply to other systems or institutions. This study examined the topic of social media broadly and used the results of a questionnaire and interviews of USG technology leaders to understand the current state of social media usage and adoption within University System of Georgia institutions. This study not only investigated the use of social media in higher education, but also the technology leader's perception of the value of social media use and what reservations he or she may have had about its use. In this context, the following research questions were posed:

1. How do institutional technology leaders perceive the use of social media in higher education?
2. What are the perceived benefits and/or drawbacks of using social media in education?
3. What are technology leaders doing with respect to social media usage?

Research Setting

The research setting for this study was the University System of Georgia (USG). The USG is governed by a Board of Regents who oversees the 35 member colleges and universities: four research universities, two regional universities, 13 state universities, 14 state colleges, 2 two-year

colleges, and the Skidaway Institute of Oceanography. These institutions collectively enroll approximately 312,000 students and employ over 40,000 faculty and staff to provide teaching and related services to students and the communities in which they are located. The institutions range in size from over 34,000 undergraduate and graduate students at the largest research university to just over 900 undergraduates at the smallest institution. It is noteworthy that the range of technological services would vary greatly across the institutions based on size, mission, and other factors, but the CIOs across all of the institutions would be required to deal with technology concerning student issues and more specifically social media.

Research Participants

Each of the 36 institutions has a technology leader that oversees the strategic use of technology for that institution. The technology leader is most often called the Chief Information Officer (CIO) and depending on the institution, he or she usually has responsibility for the centralized components of technology and reports to a vice president or, in some instances, to the president. The CIO responsibility for tactical operations or adoption of technology may vary by institution depending on a number of factors (e.g., size), but in any case the CIO is usually responsible for security and the protection of data from a holistic, campus-wide view. The adoption of technology, or perhaps, more importantly, the restriction of technology usage is often made at the CIO level.

The questionnaire sent to the CIOs (described below) showed that the average tenure of the participants in the top technology position in the USG was 8.5 years with a low of 2 and a high of 21 years. It is important to note, however, that the experience of the respondents overall was much greater; the majority had worked in the technology field for over 15 years on average, although not all of the years were spent in the top position in the organization. Twenty of the 26

respondents indicated that they had a technical background, for example, in technology or engineering before taking their current position. One respondent indicated s/he had an academic background, one had both a technical and academic background, one had a business background, and one was previously a practicing attorney.

Data Collection

The data collection process started with a questionnaire sent to 35 of the CIOs (excluding me) to gather demographic data about the CIOs as well as general data concerning the level of involvement the CIOs had with technology adoption and their general feeling about social media. Appendix A includes the questions sent to each of the participants and Appendix B shows the IRB approval for the study and questionnaire.

The questionnaire was used to get the demographic data of each participant that was needed for comparative analysis, but also to acquire some of their initial perceptions on social media. The questionnaire asked if the leader used social media on a regular basis and if it was used in their personal life as well as for work related matters. It also tried to gauge the perceived usefulness of social media by asking the participants if they thought it was an effective way to communicate with co-workers, students, or faculty and if they thought faculty could effective communicate with students using social media.

The questionnaire then asked if there were any concerns over security while using social media and if it should be excluded from use on campuses due to those concerns. Then the participants were asked if there should be policy governing the usage and required training for the safe and proper usage of social media. Finally, the participants were asked if they thought social media should be used to replace the existing Learning Management System since so many of the features and functions overlap.

Due to my professional work role and since a relationship had already been established with most of the CIOs in the system, I sent out a personal email in May of 2011 to all of the CIOs explaining that I was conducting this study and requesting that they participate in the initial questionnaire. Immediately thereafter, I sent out the questionnaire electronically and followed up with personalized emails and phone calls to some of the CIOs who did not immediately respond to the online questionnaire. The questionnaire also asked if they were willing to participate in one of the separate follow-up interview sessions to get an idea of the number willing to consent to a more in-depth interview.

In addition to gathering information about the views of the CIOs about social media in general, the questionnaire was used to identify participants for individual interviews. It was important, in the qualitative tradition, to identify the institutions and the participants from whom the most could be learned about this topic. From the questionnaire, patterns of like responses were identified and the individuals were grouped according to those patterns. Then the institutions were grouped according to institutional size and type. From these groups, CIOs of several institutions were purposefully chosen for review in accordance with Merriam's qualitative research design principles. The CIOs in the selected cases were invited to participate in a more in-depth interview to gather more detailed information about their questionnaire responses and to better understand their perceptions on the topic.

Since it will be known that this study was conducted on USG institutions and the fact that there is only one CIO at each institution, confidentiality was not offered. I did not plan to keep any of the information gathered during or after this process confidential and none of the CIOs specifically requested it. Table 3 shows the CIOs that participated in the questionnaire as well as the follow-up interview sessions.

Table 3

Questionnaire and Interview Participants

Name	*Institution*	*Interview Participant*
JL Albert	Georgia State University	X
Bob Antonelli	Skidaway Institute of Oceanography	
Terry Bailey	Dalton State University	X
Ed Boyd	Georgia College & State University	
Beth Brigdon	Georgia Health Science University	
Steve Burrell	Georgia Southern University	
John Bryan	Clayton State University	X
Reid Christenberry	Georgia Perimeter College	X
Roger Dixon	Macon State College	
Brandon Haag	Gainesville State College	
Royce Hackett	Georgia Southwestern State University	
Jeff Hayes	Gordon College	
Lena Helmbrecht	South Georgia College	
Randy Hines	Kennesaw State University	
Corry Johnson	Waycross College	
Del Kimbrough	Fort Valley State University	X
Kathy Kral	University of West Georgia	X
Chip Matson	Augusta State University	
John McGuthry	Armstrong Atlantic State University	X
Bryson Payne	North Georgia College & State University	X

Jeff Patty	Georgia Highlands College	
Robin Porter	Middle Georgia College	
Chrystle Ross	Abraham Baldwin Agriculture College	
Mike Roundtree	East Georgia College	
Virginia Stewart	Albany State University	
Barbara White	University of Georgia	X

Merriam (2009) describes the benefit of conducting interviews in a qualitative study as one that is necessary when we cannot directly observe behavior, feelings, or how people interpret the world around them. She goes on to say that it is also beneficial when we are interested in past events that are impossible to replicate or when conducting intensive case studies of a few selected individuals. In this study, direct observation was not possible and in-depth exploration of a few selected individuals was necessary, so after the initial questionnaire was completed and analyzed, the interview process was started for the selected cases that were identified.

Lincoln and Guba (1985) characterized quality quantitative research as having credibility, dependability, and transferability. They indicated that in order to have credibility, data gathered in the field should involve drawing from different data types, should be gathered in different ways, and from different people. They further indicate that in order to have dependability, the research should be adequately documented so that all of the steps in the process can easily be reconstructed. And in order for the research to have transferability, rich description and interruption must be offered.

This study meets all of the qualifying characteristics of quality research as outlined by Lincoln and Guba (1985). Credibility was achieved because data was drawn from different data

types including questionnaires and personal interviews. The data was also gathered in different ways including a questionnaire conducted online as well as interviews done via phone and in person. Finally, data was gathered from different people that represented the population of the study. Dependability was established by the detailed outline of the steps taken throughout the research and data collection process. These processes could easily be reconstructed to produce the same results. Finally, transferability was achieved by the detailed description and interpretation in the findings and conclusions chapters of this study.

In all, nine personal interviews were conducted. For the interview process, I conducted two of the interviews in CIO offices, but due to scheduling constraints, I conducted the remaining seven interviews via phone conference. All of the interviews were conducted within approximately a one-month time period between June 9th, 2011 and July 12th, 2011. All sessions were recorded using a portable computer and recording software. The interviews lasted between 45 minutes and 1 hour and explored more deeply the role of the CIO at the institution and their impression of social media. The interview questions asked of all of the participants are included in Table 4 and although they were the major topics that were covered, they sometimes led to other follow-up questions and discussion during the course of the interview.

Since the information received from the interviewees was predominately perception and opinion data, multiple sources of data were not available for triangulation. None of the responses were particularly controversial or out of the ordinary with the other responses, therefore the opinions of the interviewees were taken at their word. However, according to Merriam (2009), multiple sources of data for triangulation is not the only way for validating qualitative research.

Table 4

Interview Protocol

Question	*Related and Follow-up*
What is the scope of your responsibilities at your institution?	Does it include academic support such as instructional technology or elearning? Are you a member of any local or national organizations? Is your campus receptive to new innovations or the implementation of cutting edge technology?
What is your overall impression of social media usage in higher education?	Pedagogical merit? Fad that will fade with time? Better communication?
How have you used social media in your personal and work-related life?	Is social media usage on campus driven by you, faculty, students, others?
What are some of the concerns you have about its use, if any?	Does it concern you that it is out of campus control? Does it matter that there is no structure or consistency to its usage? • From class to class • Teacher to teacher • Student to student
What excites you about what social media can and is doing in higher education?	Do you talk to faculty about their usage? Are there any administrative departments that use it for communicating to students? Is social media setup as an official communications channel for any group (staff, faculty, students, committees, others)

What should or can be done, if anything, about the security issues with using social media application on campus?	Should formal education be required explaining the problems or vulnerabilities? Are you taking any precautions for the possibility of compromised computers or identity or data theft as a result of Facebook applications vulnerabilities?
Is there anything else related to social media that we have not talked about?	

Adequate engagement in data collection is another strategy. This is accomplished by continuing to collect data until saturation is achieved. When the interviewer reaches a point where the same thing is heard over and over and no new information surfaces as more data is collected, saturation has occurred. In this study, the point of saturation was achieved since the major themes continued to reoccur within each subject's interview.

The interviews were recorded with a laptop and software designed for recording. Each interviewee was informed that they were being recorded and subsequently gave their consent. Since confidentiality was not offered, the data gathered, including the recordings and any documents offered during the interviews, did not have special precautions taken to ensure it was closely guarded. The recordings were stored on the laptop used for the recording and also copied to an online storage facility for backup purposes.

Data Analysis

The recordings were transcribed and then coded for major themes using the methods described by Merriam (2009) and Stake (2010) for data analysis. A comparative analysis was conducted on the data and a number of major themes emerged. The transcript portions relevant to those themes were then grouped and categorized as appropriate within each category. From the

groups, the findings were written showing the similarities and differences between the responses within each group as well as other interesting findings that emerged.

As one of the CIOs in the University System of Georgia, I am very close to this study and have a great interest in the responses of the other CIOs. The CIOs within the USG usually assemble together once a quarter at a formal meeting to discuss System level policy, but also things that are going on at the individual institutions. Since social media is a topic that has been discussed at these meetings, mainly in informal sidebar conservations, I have already had the opportunity to discuss the topic prior to this study with some of the CIOs, although at a superficial level. This, along with the fact that I have my own opinion as one of the System CIOs, should be acknowledged in the study, but should not introduce any bias in the results.

CHAPTER 4

FINDINGS

The purpose of this study was to examine the pedagogical use of social media as perceived by the technology leaders in the University System of Georgia. This chapter includes the results of the questionnaire that was completed by 24 of the University System of Georgia CIOs and findings from the interviews conducted with nine CIOs. The first section includes what was learned from the questionnaire that was sent to all of the CIOs and the following section contains what was learned from the in-depth interview sessions.

Questionnaire Findings

The institutions represented by the questionnaire respondents ranged from the smallest to the largest institution in the USG. The number of employees reporting to the technology leader varied greatly, depending on the size of the institution, and ranged from four to over 1200. Nevertheless, all but two of the institutions reported that their technology organization followed a centralized model meaning that the technology leader has ultimate responsibility for all of the institutional technology and does not share that responsibility with anyone, even at the school or college level. Even so, when asked about IT governance, only 59% of the technology leaders said they had ultimate decision-making power for policy creation. The remaining technology leaders indicated that although they had a large influence on policy, final recommendations came from a separate body or committee.

The majority of respondents (59%) reported that they have a full time position in their organization dedicated to overseeing security called the Chief Information Security Officer or

equivalent. The remaining respondents indicated that they either handle security themselves or assign it to a staff member, but this responsibility is not a primary or dedicated duty. Sixty-seven percent of the respondents reported having classroom experience, either currently teaching or having previously taught, while in their position as the top technology leader.

A series of statements (n=16) about different aspects of social media were included in the questionnaire and the respondents were asked to what extent they either agreed or disagreed with the statements on a 1 to 5 Likert-type scale. Less than half (41%) indicated that they used social media on a regular basis. Sixty-two percent responded that they use or have used social media in their personal life, but only 20% said they have ever used social media for work related matters. Only 8% (N=2) agreed that social media was an effective way to communicate with co-workers. However, 25% agreed that it was an effective way for them to communicate with students and 38% agreed that it was an effective way for faculty to communicate with students.

When asked about security of social media usage, a full 92% of the respondents said they had “concerns” when social media was used on campus. However, when asked whether social media should be excluded from work or business use, only 25% agreed or strongly agreed. And only one agreed that social media should be banned from campuses entirely. When asked about the control over social media usage on campus, only 16% agreed that a strict policy governing its use should be established. However, 80% thought there should be some type of procedures and guidelines set up to establish proper usage of social media in the campus environment. Eighty-three percent of respondents thought training for the safe and proper usage of social media should be provided to staff, 87% thought training should be provided to faculty, and 79% thought training should be provided to students. When asked, no respondents said that social

media should be used to replace the existing Learning Management System (LMS) for online or technology-enhanced courses.

The questionnaire respondents represented a wide range of perspectives in terms of scope of responsibility, size of institution, and influence on policy. The majority of respondents had never, or very rarely, used social media for work related matters and did not think it was an effective means of communications for them. Most of the respondents also had concerns over the use of social media and had someone in their office specifically tasked with information security. However, few thought it was severe enough to restrict the use of social media on campus for faculty or students.

Interview Findings

Based on the results of the questionnaire data, a subset of respondents was contacted for follow-up interviews. The subset included as many diverse characteristics as possible such as institution size, tenure of the respondent and prior answers to the questionnaire. Overall, nine CIOs agreed to participate in interview sessions.

Scope of Responsibility

The interview subjects were asked about their position and scope of responsibility as the technology leader for their campus. Interestingly, the reporting lines were quite similar across the institutions. Three respondents said they reported directly to the president of their institution, while the others reported either to the Vice President of Academic Affairs or the Vice President of Administration/Operations/Chief Business Officer. With most of the respondents indicating that they have a centralized IT organizational structure, they overwhelmingly noted that they have ultimate responsibility for all technology on their campuses including administrative computing, telecommunications, networking, servers, client services, enterprise applications,

software development, classroom technology, and security. Some of the variation came in to play with instructional technology. Some of the institutions have a separate department dedicated to helping faculty with instructional technology, such as multimedia in the classroom, web content creation, and online course management, although most indicated that the infrastructure for these items were still managed within the central IT organization.

All of the technology leaders emphasized a heavy operational focus. During the interview process, one of the CIOs said the following:

> My job consists of basically all of technology – everything from telephone systems, telephone operations, networks, and administrative systems to include financials, HR, student information systems. We do a lot of professional services for software development for colleges. I have a graphics group, production services, and we run a data center.

Another CIO had this to say about the job duties associated with her university, "Our IT is centralized. Our responsibility is for academic and administrative applications, networking… basically everything except the library and distant education. Those fall under Academic Affairs. I also report to the president."

Only the technology leaders from two universities indicated that a major portion of their job was strategic in nature. This could be true at the other institutions as well, but it was not emphasized nor did it come out in the interview sessions. The CIO at the University of Georgia had this to say about her role at the institution:

> My job is probably two hats. One is strategic, provisioning, the planning, the long term planning for the university, investments, where we should be going, what's

> coming, what we need to do, political involvement obviously, and also the interface state-wide with the Board of Regents. So, there's the strategic side. And on the other side of my responsibility is, as the person responsible for the core, central organization known as Enterprise Information Technology Services, EITS. That group is about 270…260 people and they are responsible for client services, all of the production systems like email and the course management system, telephone, security, and the overall core infrastructure, architecture.

In a similar way, the CIO at Armstrong Atlantic State University emphasized the strategic nature of the CIO position and that his role was, "…to help guide and set up the technology direction for the campus."

In addition to the campus responsibilities, many of the interviewees indicated that they held leadership positions in the technology industry. Six of the nine were involved to some degree in EDUCAUSE either as a member or an active committee participant. EDUCAUSE is a nationwide professional organization whose mission is to advance higher education by promoting the intelligent use of information technology. Other industry leadership organizations that interviewees participated in were the CIO Executive Council, Women in Technology, Institute of Electrical and Electronics Engineers (IEEE) Computer Society, TechLINKS, Technology Advancement Group (TAG), The Association for Information Communications Technology Professionals in Higher Education (ACUTA), and the University System of Georgia CIO Advisory Council. Only one interviewee said he had no outside leadership positions or participation.

With technology always changing, a major part of the technology leader's job is to keep hardware and software up to date and introduce and implement new technology that could be

useful to the institution. The interviewees were asked how receptive members of their campus community were to upgrades or new technology innovations introduced to the campus by the technology leader. Most acknowledged that there are pockets of innovators and early adopters and pockets that are very resistant to any kind of change. One CIO had this to say about his institution's resistance:

> I think we've got an issue of [resistance] at some level and I'm not sure exactly what it is. For the most part, folks do not mind asking my opinion and don't mind me even trying to say these are the things we should have. The problem that we have here is an individual commitment from the faculty to embrace some sort of new technology – because you're going to have time invested in it, not matter what.

However, not all CIOs saw innovation as a problem at their institution. "They are always trying new stuff," said the CIO at Clayton State University. The CIO at Georgia Perimeter College had this to say about the success he has had with technology innovation:

> The faculty, because of it being a two-year institution, are very focused on instruction. Very little, if any, research is produced. They are easily adaptive. They tend to look at students as more of a consumer as compared to a larger research university. So they are actually trying to attract students here and trying to provide innovative solutions that will simplify things for them to make it attractive to come here.

Most of the interviewees, however, indicated that their institutions were more in the middle in terms of technology adoption as opposed to being on either extreme. The CIO at the University of West Georgia represented this view by saying:

> I think we are kind of in the mainstream of adopters. We have a few faculty on campus who would like to be early adopters and they will go out and work with us and try things on their own. I think in general, our faculty tend to be fairly mainstream adopters of technology. They want things to be fairly stable before they jump in.

Social Media Impression

When asked about their overall impression of social media usage in higher education, most of the interviewees had much to say. Most systematically weighed the pros and cons, whether consciously or subconsciously, and provided a list of each as they understood and interpreted them. On the pro side, most were in agreement that social media will continue to evolve from its current form and may be quite different in the future. One CIO reinforced this point by saying, "In the broad paintbrush of higher education, I think it is going to be just like everything else. It will evolve. We are at this point now. Two years from now, we'll be at another point." The CIO at North Georgia College & State University speculated the following:

> I wish I could predict two years into the future, but two years ago I could have never seen the iPad coming, so I'm not sure that I'd be very much use in telling you what's going to be out there two years from now. But I do believe it has scratched a surface of need out there that people didn't know they had. People want to stay connected in this way even though some research is showing we're more isolated that ever, even with all our social media.

Another positive attribute cited about the use of social media was the connectedness it allows between people. "What is key is the issue of communications, the connectedness," said one of the interviewees and continued, "I don't know that it makes a lot of difference in what social

media vehicle it is, but the connectedness is what people expect." However, one of the CIOs is a little more cautious with this new way of communication:

> I don't know if it is just a fad, but one thing I do know is that the way [people who use social media] communicate is different than the way we communicate. Whereas I am very happy and comfortable communicating with you directly, they are very happy and comfortable with communicating with everybody in the world as [they are] just communicating with you. And that's not something I'm comfortable with and I know it's not something a lot of faculty are comfortable with.

The usefulness, or potential usefulness, was seen as a positive attribute as well. One of the interviewees said it was, "…a very useful utilitarian type service. I think it is a valuable asset and I think there is a lot of potential in its future use. It even has pedagogical merit now." Another interviewee explained his thoughts on the usefulness of social media, "It's definitely another way to engage students in the classroom and the learning experience beyond the classroom." However, one interviewee was not convinced:

> I honestly don't see it. Maybe if I were more exposed to it I'd have a different opinion. I'm kind of mystified actually. I really don't see the attraction. It's definitely hype driven and these people who manipulate consumer behavior, they know what they are doing and that's a big part of this, but I mean it's becoming so entwined in our culture now, it's like we are a bunch of crack addicts or something.

Based on comments received through the interviews, there seemed to be more substantial reservations and concerns about its use. The CIO at the University of Georgia thought that the kind of environment social media creates might not be conducive to facilitating teaching and

learning and that the emphasis should not be on the technology itself, but on the best strategy for teaching and learning:

> I know that some faculty across the country, some universities that are using [social media] in their instruction. There are others who don't believe that that kind of environment is a strong way to facilitate teaching and learning. But that's been true with every type of approach pedagogically that we've ever had. I don't see it as that much different. It's the technology I think is what the people are so enamored about. That bothers me because I don't think that's what it should be about. It should be about the best strategy for teaching and learning and if it happens to fit, so be it.

Others thought that social media is sparsely used by faculty, mostly because they have not figured out a good way to incorporate it into the curriculum, but also because they may see it as a fad or something that "kids" do as a past-time and not as a true pedagogical tool. However, all of the interviewees agreed that social media is not a passing fad and will continue to be here for the foreseeable future in some form or another. Some comments by the interviewees that reinforce this belief are as follows:

> There's no doubt it's not a fad, in the sense that it is here today and gone tomorrow. I think there are some issues that need to be resolved with some of the products that are out there so that they can be used in a way that is more prudent and reduces risk for the institutions.

> I think engaging through some electronic form of [social] media is here to stay and like Google +, which came out last week, you can see them trying to build up a Facebook

phenomenon and turn it into something more. But, I think as long as there are companies out there that are looking to make money on this, it will keep growing in some way.

I think that this is the way things are going to continue to be … just like texting. Texting hasn't gone away and it's been here for a while. The instant communication, and now having Facebook on phones and mobile apps, I don't see that going away anytime soon.

[Social media] is trendy in some regards. The idea of the technology is good, but look at the longevity of MySpace. I mean, MySpace is sort of fading away. So that's an example of the trend of things and who knows what's going to happen to Facebook. Is it another Google? But is Google going to last? Is Facebook going to last? Who knows?

It's here to stay. It's in the emerging group of communication tools, actually a system of tools, and you know the question is how long till they evolve and how will they change. Facebook was obviously the leader in that, but Facebook has competition now and Google and other companies are beginning to compete more aggressively with Facebook so I don't think we've seen anything yet in terms of competition. Facebook's been taking all of the business, but they have problems. We are just beginning to see what's possible. Google + was just announced last week and so we will see more and more group features incorporated into higher education systems, portals, and other technology that we use.

The CIO at Dalton State College sees the need for it, but thinks it is driven predominately by the revenue it can generate:

> I think I saw that Facebook has overtaken Yahoo in terms of the advertising revenue generated. If I'm not mistaken, they are number one now. And there is a lot of money being made through advertising on social media and the fact that all of the adware stuff is just the lengths that people go to take over your computer and learn everything about you is all driven by money. But I understand there is a demand for social media. It's one of those things you can't avoid being in. You have to be a player of where the students are. I'm not particularly a fan of it myself, but I understand the reality.

One of the other interviewees thinks there is a high risk associated with using it and makes an important prediction:

> People run to the flash and glitter just like with any new technology without a prudent evaluation of the pros and cons and the consequences are not thought through very well. There will be some significant disappointments in the next year or two in which people are embarrassed or put at risk because of improper use of social media without the proper evaluation of that risk. I think once a university gets sued for it, I think we will move to a more mature level where it will kind of go through a trivial disillusionment where people may actually want to move away from it a little bit and then it will come back to be more main stream.

One of the reoccurring themes with the interviewees is the notion of "instant" communication. It appears to have value during situations that need immediate contact such as an emergency situation, but there is easily a point of overload with instant and constant routine communication as the CIO at Georgia Perimeter College points out:

> I think there is a point where you are bombarded with information from different sources that really interfere with your ability to do things effectively. I think it can create

> situations where you are not focused and you're darting around doing things with these products that started back with email in general. If you end up having your work agenda for the day driven by the email in your inbox, that means you are not managing your time, your email is managing your time. And the same thing can happen with bombardment with other social media. Frankly, the first time I tried [Twitter], I started getting tweets from my daughter and kids and that kind of thing, and finally I couldn't get my work done because they kept popping up on my desktop. So I said I'm going to shut that stuff back off. It's not that I'm old or archaic. It just that it's distracting. And it keeps you from focusing on what you are supposed to be doing. I think it happens to everybody. They somehow get absorbed into it. And in some cases they live in a virtual world and they don't have much of a reality that they deal with. So that is a risk.

Another theme that emerged is the idea that the type of communication that goes on with social media is very different from the way communication used to take place. There seems to be a lot more communication going on with the new social media and the quality and content of the communication are also different. One CIO notes:

> I can't really say it's a better form of communication, but it is more persistent and immediate. We see tweets about everything, we can watch any YouTube video, keep in touch with any colleague. But it's always there, so we can. But I don't know how much we're doing to communicate better with one another.

Another CIO commented on the seemingly irrelevant bits of information posted on social media sites:

> I don't care what my friend had for lunch. That's not important to me. Some people find those things important, but I don't and that's why I don't blog either. I mean if somebody wants to know what I do they can come and ask me. I'm old school.

Another said, "You've got plenty of folks who live by Facebook, but I could care less that Johnny had spaghetti for supper." However, the CIO at Clayton State University identified a potential benefit:

> When you tweet every minute, I would imagine that it is not relevant. However, if you are Warren Buffet or someone like that, it might be useful to find out what Warren is looking at in terms of companies to invest in. A lot of it is probably trivial, but some of it is not. If you are a public figure or someone who has a lot of control of billions of dollars in terms of investments and were tweeting, that would be an interesting thing perhaps to follow.

The idea of sharing one's every move or thought with potentially the entire world is foreign and somewhat scary to traditionalists, but is commonplace and normal to frequent users of social media, as the CIO from Armstrong Atlantic State University described:

> I think one of the ways we are comfortable is the one to one private communications, or at least what we think to be private. I think with someone who is sixteen, seventeen, eighteen, nineteen, what they are used to or comfortable with is something that doesn't have to be as private as you and I believe. So the feeling may be more comfortable with more people knowing more private information about them than you or I may be.

Social Media Usage

When asked about personal use of social networking, most of the technology leaders expressed that they used it very little. Five of the nine interviewees admitted to setting up a

LinkedIn account, which is primarily a professional social network versus a friends and family network. However, only three stated they have a Facebook account and used it somewhat regularly. Four indicated that they have setup a Facebook account to see how it worked and to be familiar with it, but did not use it regularly. Two claimed not to use Facebook at all. Three also had Twitter accounts, but none used it regularly. Only one person indicated that they used any type of social media in a work related context, and that was to tweet notes occasionally while at a conference.

One CIO said:

> I do limit myself [on using social media] primarily because I value my privacy. If I want to tell my kids what I'm doing, I'll either pick up the phone or, and I'm old school, send them snail mail. But that's it. We communicate but it's more convenient for me and them. I prefer the live communications as opposed to just reading what somebody has been doing.

The CIO from Fort Valley State University said:

> When I get home, the last thing I want to do is look at a computer! I think what it's got to be is like everything else that turns into an investment. I mean, if you want to get something good out of it, then you have got to put more time into it. Developing those online relationships is just as important as are personal relationships. There are too many things I have to do. Maybe if I had more time maybe that would make a difference in it, but I sort of doubt it.

Although most of the interviewee expressed that they did not use the many forms of social media available to them much in their personal life, one of the CIO summed up the responses from the others by saying:

> For me, I try to understand. I use Facebook. I've seen the excitement in it when someone wants to link to or connect to me and I do it. But when I want to communicate with someone, I pick up the phone or send an email so I'm still old style, but periodically I force myself once a month to go in and peek inside someone's window to see what is going on. I do it to make sure I am connected to what's going on. But I haven't fallen in love with it. I am on LinkedIn. I'm on Facebook. I have a Twitter account. I've yet to send out a tweet, but I connect with these things more from a perspective of understanding what is going on in the marketplace than from the perspective of I use these things to make my world better. When a parent asks about Facebook, I need to understand kind of what they are talking about. I don't.

However, it was expressed that although the technology leaders used social media very seldom, social media was used heavily in other areas on campus. These areas centered on communications with students including the admissions, Student Affairs, and public relations areas.

Excitement about Social Media

The interviewees were asked what, if anything, excited them about social media in higher education. When one of the CIOs was asked if he had anything that excited him, he said, "I hate to sound like this, but I don't." During the interview with one of the other CIOs he said, "Yeah, I don't know if I have anything to add to that." However, the remaining seven were in agreement

on two points of excitement; the reach it has to students and the potential it has for the future. One interviewee commented:

> Well, it's basically a way to literally break the bonds that keep you to a fixed conformity mode. You literally go out and do almost anything you want to with it. It really will foster innovation of how to use certain tools effectively. If we could get higher ed to work a little bit more to collaborate we might actually be able to come up with tools and actually one of these environments where we can share knowledge, you know, how we are doing things.

The CIO at the University of West Georgia said:

> For us, it's getting the information where you want it as opposed to you coming to our system, we're going to you. I think that's exciting if we can do it in a way that still makes it where we have enough access to the information to keep it long enough and guard it and not release confidential or sensitive information.

A third CIO also sees potential excitement:

> One thing that excites me is that people are communicating and they are talking and it is one way to get those that may have sat in their rooms by themselves connected to people. I think I would probably, as a shy person, much younger, I think social media may have connected me to other people. I don't know that as a fact or not but I just think it could be a way for people to connect to other people that may not be as comfortable connecting directly. And then it can help them make more formal connections after they made those online connections.

An exciting thing that can potentially help students outside of the classroom is illustrated by these comments from the Clayton State University CIO:

> [Only] half of learning is in the classroom…Social media has the potential to help students learn more who are outside the classroom. If you are a computer science major and you're taking a really tough course on highway design and you have a group project, you can use group tools [in social media] to work with your team to be better and learn the things you have difficulty learning. Maybe you are not that great at math but you're a great computer programmer, so you find out who's the math whiz and who do you hook up with to quickly learn what it is that you need to get through calculus 3. So the potential for social media tools and the group tools are to help students learn out of class. And they have the potential and we are beginning to see if you read what the University of Phoenix is doing to their online portal systems. They have put group features into it so that you can find out what your peers are doing in your courses that you are taking and hook up with them electronically or in person to learn.

An anecdotal story told by an interviewee illustrates the potential social media can have in the classroom:

> A professor literally took two computers and two projectors into the classroom. He'd be doing his presentation on one, but he had a student sitting at the other one literally learning a social media tool, I think it was Twitter, that allowed them all to see what comments each student was making about what the faculty was saying and was putting it up against a screen right next to the professor's screen so that he could see it too. And it was kind of interesting because rather than pushing it out of the room, he actually brought it into the room and said I want to be part of it too so I want to see where I stand. And that's a new kind of transparency.

Another excitement factor that surfaced was the idea that social media is very much consumer-centric:

> I like the fact that you can subscribe to the information you want to get information from, so it creates its own targeted distribution channels and you just connect from them if you want to. I think the whole idea of having a channel of communication that is going on other that what's directly happening in the classroom, is healthy.

Breaking down the barriers between faculty and students, engaging shy or other students who would not otherwise participate, and the potential to reach vast numbers of people at one time, such as an alumni base, were a few other potentially exciting aspects of social media expressed by the interviewees.

Concerns about Social Media

There were many concerns expressed about social media use by the interviewees. One that reoccurred in several of the interviews was the issue of permanency. Once something is tweeted or posted to Facebook, whether it was done accidently, in jest, under the influence, or during an altered emotional state, it is presented for all to see. Facebook posts and incriminating pictures can be removed but the damage may already have been done, especially if others re-tweet or re-post the messages or pictures. It that case, they can be launched into perpetuity as the CIO of Georgia State University explains:

> People can say things or do things in that environment that they can't retract and have to live with for the rest of their lives if they are negative things. And it's kind of an old adage; you never burn your bridges. People can do things or say things with that medium now that they can't retract. It's there forever.

Two other reoccurring concerns were the potential for viruses or malicious code and the fact that most people post too much personal information on social media sites. The combination of those two can have unfortunate results. The large volume of subscribers to popular social media sites such as Facebook makes it a high profile target for hackers to propagate viruses. Coupled with the fact that Facebook allows externally developed programs to easily be integrated into the site with very little vetting taking place, hackers can easily access the personal information users put in their profile through externally generated programs. When people place too much personally identifiable information on a site that is easily retrieved by a 3rd party application, the possibility of identity theft is significantly increased as illustrated by this CIO:

> People post way too much personal information. They post enough information that it is easy to steal their identity. If I know your date of birth, your social security number, and the city of your birth and your mother's maiden name, I can get credit. I can set up credit in your name that looks exactly like you. You can apply for credit cards. You can do all of that online. I can remotely set up accounts for credit cards under your name and start buying things. Then one day you are going to get a call from Sears in New York saying, "What about all of those plasma TV's you bought? We need you to start paying for those." It happens. It happens a lot.

Another CIO had this to say about privacy of information:

> I think privacy is important. We are just 'out' there. People are putting information out there in social media environments that I would not want out there. And I don't think they realize the ramifications of it. We need to help people clearly understand what this is about. I think we jump into it without completely understanding what it means or what it is.

A related issue identified by the interviewees was the idea of stalking. With people constantly updating their "status" in real time, including where they are and what they are doing, it makes it easy for a stalker to follow that person. The stalker can even be someone who is known and a trusted "friend" with access to even the protected information in a user's profile. Additionally, potential burglars could easily find out when it is safe to rob a house if the owner's status indicates that they are on vacation. One of the interviewees articulates this:

> If I am a burglar and I see you post, "Hey, I'm going on my cruise to the Caribbean," and I know you are going to be out of the country, I'd go over and rob your house. I'd take a truck, back it up, and take everything in it that's valuable. So people have to be careful in terms of their postings.

Another concern that surfaced during the interview sessions about using social media on campus was the fact that the information put on social media sites is not validated in any way. Anyone can post information to Facebook, even without it being truthful. The CIO at Armstrong Atlantic State University tells what happened recently at his institution:

> One time there was something that went out on a social media site about the potential of the campus closing. And the news organization was monitoring the site so they called to find out what time the campus was going to close. And that wasn't true and so when that snowball starts running downhill with misinformation, being able to stop it and correct it [is difficult]. So, it's the lack of control of the information that's going out and then how much it builds and what's it going to take to stop it. Because you want to try, or want it to fix itself. But when it gets to the point of its too big, it's too late. The thing that concerns me the most is the inaccuracy of the information and how much it sticks.

In addition to having little or no control over what gets put on social media sites, having little control over it once it is there is also of concern. Not having access to the data to back it up or maintain its integrity is a foreign concept to most technology leaders. One of the institutions' marketing and communications department spent many hours a day building a façade of the university online only to have it simply disappear:

> They called over here and were like, "Get my Facebook page back!" And we were like, "We can't." They said that they had almost 5,000 followers or something and the account just disappeared and I think they really thought that we could just call someone and make it come back, thinking we have that control and, of course, we don't.

Having a service that is important to the institution, but largely out of its own control was of concern to some of the interviewees, especially when used in an official capacity where there is student's data that is required to be part of the academic record and archived for a period of time.

Action for Social Media

The interviewees were asked what actions were they taking, or should they take, concerning social media. The most common action cited that should be taken was the protection of personally identifiable information, as well as student record data since it is protected under the Family Educational Rights and Privacy Act (FERPA). This federal law provides for the protection of student educational records and outlines the responsibilities education institutions have for safeguarding those records. If social media is used in an official capacity for the education of students, the institution has a responsibility to protect any PII or official student data, such as tests and grades, from being released to the public without the students consent; a seemingly impossible obligation. The CIO of Georgia State University had this to say about protection of information:

> We got to find a way to solve it. I mean you need to do the part where you do the DLT, the data loss prevention stuff. Because it is just like credit card numbers, social security numbers, all of those things you don't want those out where people have access to them. And again, I'm back to the responsibility that they have entrusted you in the care of that information, so it's your responsibility as safe guard. So yeah, this is huge.

The second most cited action that needs to take place is a training and awareness program. Most of the interviewees thought some sort of training program that would identify the risks and outline the safe and proper use of social media was a necessity. One interviewee said:

> I think there should be some formal training program of some kind, just to make them aware of the guidelines of how you use this tool because there are acceptable and unacceptable ways to use it. There are certain conditions and policies that you need to make sure that people are aware of and that they abide by them.

"People should be reminded of the flaws, the vulnerabilities, the risks that they take, and should use [social media] sites wisely," said one of the other interviewees. At the time of the interviews, none of the interviewees had policies specific to social media in place nor a training program providing specific instructions about the use of social media. However, several said that many of the current policies and trainings would cover some of the issues associated with social media. For example, there may be an existing policy on sexual harassment that would cover sexual harassment using social media so a separate policy would not be needed. However, one CIO didn't think it was his responsibility solely to protect data or train users:

> I see the internet space very similar to how we treat ourselves in the real world. When you have a young person, you try to teach them about drugs and all the various things you want to teach them about while growing up, which is basically good behavior. One of the

> things I see as lacking a little is good behavior practices on the internet and like you said doing the face to face test, being able to think maybe I shouldn't install this, maybe I don't want to be connected to this person, but just teaching those young people good behavior. Sometimes I thing we try to rely on technology to make all of these decisions for us. And I think that the technology really shouldn't make those decisions. I think people should make those decisions. And I think if we spend deliberate amounts of time trying to teach people how to make good decisions online, then I think a lot of the other issues that we think are really technical issues, which I don't know are really technical issues, I think those really begin to diminish. If everybody knew that we shouldn't respond to emails and give personal information online, all of this phishing stuff would go away and they would look for others ways, so there's a market for that stuff because everyone isn't aware that they shouldn't do that. So I see my role as reinforcing good behaviors that the parents already started, and not necessarily teaching all of the good behaviors.

In terms of specific actions technology leaders are doing for the protection of data, equipment, network resources, etc., none of the interviewees indicated that they were doing anything special outside the of the normal protection measures already in place at their campuses. All campuses in the University System of Georgia already have a network firewall in place that limits the inbound network traffic to known hosts and keeps out most malicious and undesirable attacks. In addition, most computers on the network are required to have an anti-virus program actively running on them so the threat of virus propagation is greatly mitigated.

Since social media sites are web-based and use the same protocol as all other web-based application, trying to monitor such sites for malicious activity or the transfer of FERPA protected

data becomes a monumental, if not impossible, task. Blocking such data or sites creates another set of problems because the use of social media sites may have legitimate educational content and is protected under Academic Freedom. The interviewees were give one last opportunity to express any thoughts about social media as it related to this research project. Below are final comments from some of the technology leaders:

> Obviously it is a big hit with the younger generations, now the older generations are adopting it and commercial companies are moving into it because it's not going away. And so if you look at advertising when there was only TV, now people are recording their shows and skipping the commercials, so they are exploring other ways to advertise and get their products out there to the public to encourage buying. This is just one of those ways. Now, all of the sudden, we have Facebook sites for everything in the world from Coca Cola to probably coke, the real stuff. So, that's what I'm saying, you can't get ahead of it, you just try to figure out what you need to do if it ever takes off. And they never really go away. And that's where a lot of concern is I think these days.

> I can't think of anything else other than to reinforce the fact that we don't know where it's going to go and there is no sense in trying to control it. And more of just trying to understand what's working and what's not working.

> I wish I was savvier than I am. I haven't taken the time to get involved in Facebook and some of the others. It would probably serve me well if I did, but by the same token, my days seem full enough as they are. When I go home in the evenings, I sure don't want to log onto the computer and mess around. I can appreciate what folks are doing on

> Facebook and I understand the reality is you got to be where your students and potential students are. That's just like any other business. If you aren't being seen then folks aren't paying attention to you. And part of it too, you're conspicuous in your absence if you're not playing.

> I think we can do some good things with social media. I think we do have to find the most effective ways to reach out to students to share information among administrative departments, faculty, and staff. But my only lingering fear is that by the time we figure it out, it'll be as old as MySpace or email and the student will reject it wholesale.

The findings from the questionnaire and interviews were very insightful. To be able to see the diverse opinions from CIOs of the different institutions that make up the USG was something that added tremendous value to this study. There were many similarities in responses across all of the institutions as well as disagreements among some from similar institutions. However, all agreed that social media is evolving and will continue to evolve into the foreseeable future and that it is probably not yet ready to take over as an official means of communication inside or outside of the classroom. Security is still the major concern and the lack of educational tools within most social media environments keeps it from rapid adoption by faculty and most institutions of higher education.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to examine the pedagogical use of social media as perceived by the technology leaders in the University System of Georgia. With social media becoming so prominent in the U.S. culture today, the use of it by students and faculty on college campuses for pedagogical purposes is increasing rapidly. Even though there are many benefits for using social media in this way, it is not without its problems. The technology leader on campus is most often charged with making sure those problems are mitigated to the extent possible and that it does not cause disruptions to others. To gain insight into what the technology leader thinks about the propagation of social media on campus as well as to determine what they are doing about it, this study examined the perceptions of technology leaders in the University System of Georgia. The primary research questions asked in this study were:

1. How do institutional technology leaders perceive the use of social media in higher education?
2. What are the perceived benefits and/or drawbacks of using social media in education?
3. What are technology leaders doing with respect to social media usage?

Discussion of Findings

After analyzing the general and demographic data of the participants from the questionnaire, it was discovered that some of the information was inconsistent with previous studies conducted on higher education technology leaders. Brown's (2006) study concluded that

the CIO role in higher education has evolved from a technical position holding a managerial role to an education and business executive assuming a technical post. Likewise, Penrod, Dolence, & Douglas (1990) found in their study that the technical route was the least travelled by CIOs. They found that almost half of the CIOs in their study reported having an administrative background and almost forty percent were from the academic ranks, leaving only thirteen percent that reported having a technical background. In this study, 20 of the 24 participants (83%) indicated that they had a technical background before becoming the top technology leader. Only one person had a pure academic background and only two had primarily a business background. The other one had a combination of academic and technical.

Another inconsistency between the CIOs in this study and the research literature is in the defined role of the CIO. Synott and Gruber (1981) identified nine roles of an effective CIO with one of the predominate roles being a strategic planner. A decade later, Penrod, Dolence, & Douglas (1990) explained that business viewed the CIO as the savior who was to align the worlds of business and technology and would participate in organizational strategy development, making them managerially oriented executives rather than technical managers. However, when asked about their roles as the top technology leader, only two of the interview participants in the current study indicated that their roles were strategic in nature. The remaining interviewees focused only on the operational aspects of their position leading this researcher to believe that operations and technical management was the largest and most important roles of the position. Interestingly still, the two that did identify strategic leadership as one of the preeminent roles of their position were not in the group of CIOs that reported to the president of their institution and held cabinet level positions. The roles described by most of the CIOs were operational like the roles Brown (2006) pointed out in his study of CIO roles including provider of classic IT

support, overseer of IT contracts, integrator, and business partner. They are also consistent with Carr's (2003) article about the operationalization of IT, instead of the strategic planner and futurist roles described by Synott and Gruber (1981). As the generic managerial roles defined by Mintzberg (1975) evolved into the more CIO-centric roles defined by Brown (2006), perhaps some of the strategic focus of the CIO position had been lost.

It is possible that these two inconsistencies are related, however. For a technology leader to work his or her way up through the technical ranks in an IT organization to finally get to the top spot may have an effect on the way they perceive their job duties and roles. It may be more difficult for a highly technical and operationally-focused individual to make the transition to a strategic leader when they reach the top position than it may be for someone with business background who might already be strategically focused. However, additional research and study would need to be conducted to determine if a relationship exists and if that relationship is causal. Although the subjects in this study may not be in perfect alignment with previous studies or with management theory in general, there is a trend in some areas to operationalize the IT organization because of its near ubiquitous state and remove the technology leader from the executive table. This controversial idea is still being argued, but has already happened in some prestigious universities across the country.

In terms of social media usage, the majority of the technology leaders in the USG said they did not use it regularly. In fact, most said they only set up an account to become familiar with how it works and the mechanics of its operation. Only a few used it somewhat regularly and it was mostly in their personal, not professional, life. Only two people agreed that using social media was an effective way to communicate with co-workers. In addition, some did not use social media at all and still others claimed that the last thing they wanted to do when they got

home was to get on the computer. Other than the couple of CIOs that used it somewhat regularly, the overall trend that came out of the findings was that CIOs did not use social media very much, especially for work-related activities.

The reason for the lack of usage by CIOs is probably due to the perception that it is not a valuable or mature tool to use for official work related communication. Even though many saw the benefits of communication, collaboration, and connectedness, none thought it was an effective replacement for email communications because of the lack of control over the delivery of messages and the lack of positive confirmation of delivery. Most of the CIOs viewed using social media as something that was extra or in addition to their normal duties and would require them to "make time" to devote it. However, an integral part of a CIOs job is to read and respond to email throughout the day and sometimes into the evening, even though the last thing they may want to do when they get home is "get on the computer." If social media were an official means of communication, it would not be something they would have to "make time" for, but would be a requirement.

Likewise, none of the CIOs I surveyed thought that social media could be an effective replacement for the learning management system currently deployed at the campus. Less than 40% of the CIOs agreed that social media was an effective way for faculty to communicate with students. However, when asked about the benefits of social media, most touted the excellent communication, collaboration, and pedagogical potential it had when integrated into the academic curriculum, which are the main core components of any LMS. The lack of assessment tools, integration with the existing student records system, and local control may be some of the contributing factors to the CIOs lack of confidence in social media as an effective academic tool.

They may also find it difficult to rely on a product they are not paying for and therefore have no guarantee of services like they would with another commercial product.

The majority of CIOs indicated that their institutions were “in the middle” in terms of technology adoption. They were neither “cutting edge” nor “laggards” when it came to the adoption and use of social media or any other technology. Although there were a few cited exceptions, this is consistent with the diffusion of innovations model first developed in the early 1900s to explain how technology was adopted over time. The study of diffusion of innovations began with Tarde’s (1903) book on *The Laws of Imitation*. However, a more concerted development of this approach occurred forty year later when Ryan and Gross (1943) published their results of the spread of hybrid-corn use among Iowa farmers. Their findings followed the typical s-curve model shown in Figure 1 where there are few early and late adopters with the majority of adopters concentrated in the middle.

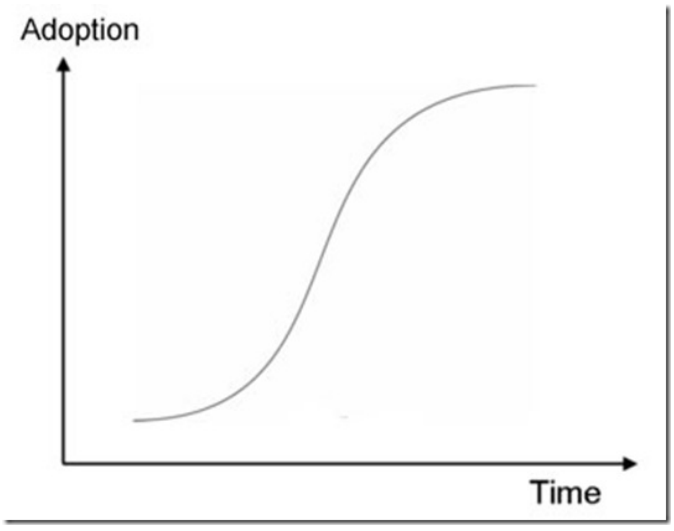

Figure 1: Diffusion of Innovation Model S-curve.

One thing that is undeniable is that with over 800 million users on Facebook alone, the reach of social media is pervasive. With that many people who are familiar with a particular environment, it will be hard for some entrepreneurs or other creative individuals not to capitalize on it, especially from an academic perspective, since the majority of users are in the traditional college-age group. Social media has become so entwined in our culture the adoption literature strongly suggests that it will only be a matter of time before it bridges the gap between the social and pedagogical use and emerges as a mainstream tool in the academic environment as it has in the social, non-academic environment.

All of the CIOs agreed that the world of social media is an evolving one. Perhaps in the future, it will evolve into a more mature, consistent, reliable, secure, and feature rich environment in which CIOs will feel comfortable using it as an official channel of communication and as a viable pedagogical tool that can replace costly email and LMS programs in use today. But as of now, this does not seem to be the case. Plus, there are still unresolved issues over security and privacy when using social media. An overwhelming majority of CIOs interviewed for this study (92%) had “concerns” over the use of social media on their campus. Until these concerns are addressed, it is unlikely that, at least from the CIO perspective, there will be much of a push to use social media as anything other than a technology playground.

Over 60% of the questionnaire respondents said that their institution had a full time person dedicated to information security on their campus. The remaining respondents indicated that although not an exclusive duty, someone was responsible for maintaining security on their campus either as a part time or an additional duty. However, when it came to social media, none of the interviewees said that they were taking any special security precautions related to social media outside of what is already being done for the general protection of the campus. That

means that either there are no effective tools available to monitor, detect, and mitigate security vulnerabilities related to social media or that what is already in place is adequate enough to combat anything caused by social media vulnerabilities.

One area that was consistent with Mintzberg's (1975) disseminator role was the idea of training end users about social media. Approximately 80% of respondents agreed that some form of education or training should be given to staff and students and 87% thought training should be provided to faculty, since they were the ones most likely to interact with students using social media. This training would help educate them on the proper use of social media and how to avoid common scams and vulnerabilities. However, none of the interviewees indicated that they had any form of established training setup for any group specific to social media, although some said it is or could be incorporated into other types of training. Perhaps this is because the threats associated with social media have not been exploited to the point that it has become a major problem. For example, if someone's personally identifiable information was stolen while using a social media site on campus, the victim might not even know. In this case, the CIO or security manager certainly would not know. But even if everyone was aware of what happened, if it was not disruptive to the network or others trying to do work, it would not be seen as a high priority, only as a learning experience for the victim.

Some of the concerns about social media expressed by the CIOs were well taken. The idea that when something is put on the Internet, it could potentially become a permanent part of cyber space is something that should get everybody's attention. There seems to be no second chances in this space and skeletons could follow someone potentially for a lifetime. Also, with the number of identity theft victims continuing to rise, the issue of providing too much personal information on social media sites was another major concern.

Perhaps some people do not understand the attraction behind social media because it is not within their normal comfort zone. Some of the interviewees dismissed the whole idea behind social networking because they did not see the value in the trivial posts that others sometimes make. They assume it has to be something profound or by someone who is very influential in order for it to be worthy of their time. However, I see social media as a combination of two much older behaviors. First of all, people have been writing in diaries for many years. The whole idea behind a diary is that it is all about the individual writing in it and they could express whatever they wanted, whether profound, trivial, intimate, or public. The author could choose to share the contents of the diary with whomever they wanted, whether it was nobody, a few close friends, or everybody that wanted to read it.

Secondly, when a person has a close, intimate relationship with someone such as a spouse, they often times share what others might think of as insignificant bits of information about themselves because the other person is genuinely interested in details of that person's life, whether profound or trifling. People who are close share information about themselves to each other which strengthens their relationship. I think social media has replicated those two ideals and morphed them into something more modern and acceptable in today's online environment. Younger generations who have grown-up using the Internet see social media as the diary of yesteryear although it may take someone in the older generations a while to feel comfortable with using online media in this way.

Recommendations

Social media is gaining in popularity with new users every day. It appears to be changing over time with new and updated features being added frequently. What it will look like in a few short years is anybody's guess, but as technology leaders become more comfortable with its

many benefits and as security issues are addressed, it is more likely that it will find its way into mainstream academic uses and possibly become the communications tool of choice.

The key to perpetuating social media into the future in the academic arena is not only to address the security and vulnerability concerns, but also to make it a useful tool that can replace existing similar tools such as email and Learning Management Systems. After that happens, social media can become an official communication channel and CIOs will be more likely to promote its use, as well as use it themselves.

One limitation of this study is the number of participants that were used. The questionnaire was sent to all 35 CIOs, but usable responses were received from only 24. A perfect response rate would have given a total system-wide perspective. Also a similar study could be made stronger if more time were available to interview a larger number of CIOs to gain additional in-depth perspectives. Although saturation did occur in most of the areas, there were others that could have benefitted from input by more CIOs. This study revealed a lot about the perceptions of a convenient sample of CIOs who were geographically located in Georgia. However, additional research is needed to determine if the perceptions discovered in this region are applicable in other regions and across the country. There are also other research opportunities available to see if perceptions transcend into private colleges and universities and other states that do not have a similar “system” of public institutions. In addition, findings from this study do not apply in general to all college and university CIOs; although it is possible that similar perceptions may be held by a larger group of CIO officials, findings herein reflect only the perceptions of a sample of officials from one state system and do not generalize to a wider population.

Since technology rapidly changes, including the social media environment, it would be interesting to repeat this study in a few years. Based on the CIO comments of social media not being fully developed and mature and therefore not very useful as a pedagogical tool, I would predict that a similar study would have a very different outcome in a few short years. I think social media could not only be accepted and used by CIOs as a primary communication tool, but also bridge the gap from a social pastime to pedagogical tool used very effectively in the classroom.

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APPENDICES

APPENDIX A: CAMPUS TECHNOLOGY LEADER QUESTIONNAIRE

You have been selected to participate in a study of social media usage in the University System of Georgia. The purpose of this research is to examine the campus technology leader's perceptions of the usage or potential usage of social media in higher education.
If you choose to participate, you will be asked to complete a brief questionnaire regarding your attitudes and perceptions. Your input will provide valuable information to this study. It is expected that this questionnaire will take no more than 10 minutes of your time. After the initial questionnaire, a subset of respondents will be selected for follow-up interviews either by phone or in person. The follow-up interview will take no longer than 1 hour. You can participate in both the questionnaire and follow-up interview, the questionnaire only, or neither one.

Your responses will NOT be anonymous as it is necessary to identify the individual for the follow-up interview and to identify the institution for better data analysis. All information will be available to the public. The results of this study will help to better understand the attitudes and perceptions of social media usage from the technology leader's viewpoint and by participating in this study, you will be able to see and compare those perceptions of other peer technology leaders. This research may be published in academic journals.

Participation is voluntary. You are under no obligation to participate and there is no penalty or loss of benefits to which you are otherwise entitled for not participating. You may quit at any time during the questionnaire or follow-up interview. There is no foreseeable risk associated with participating in any part of this study.

If you have any questions regarding this questionnaire, please contact Jeff Delaney at 912-358-4400 or email at delaneyj@uga.edu. Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

If you agree to be a participant in this study, please check the box below and proceed with the survey. Otherwise, close your browser window or navigate away from this page now.

[check box]: I agree to be a participant in this study.

[next button]

1. Are you the top technology leader at your institution? (If not, please skip to question 13.)
    a. Yes
    b. No
2. How long have you been in your current position?
    a. [text box]
3. Please indicate your primary experience before taking your current position.
    a. I have a technical background (technology, engineering, etc.)
    b. I have a business background (management, sales, marketing, etc.)
    c. I have an academic background (faculty, department head, dean, etc.)
    d. Other: Please specify [text box]
4. How many employees report directly to you (only full time employees, do not count part time or student workers)?
    a. [text box]
5. Does your institution have primarily a centralized or decentralized Information Technology organization (i.e. do colleges and/or schools within your institution have an independent Information Technology support staff that does not report to you)?
    a. Centralized
    b. Decentralized
    c. Comments: [comment box]
6. Does your institution have a Chief Information Security Officer (CISO) or equivalent that handles information security as a primary duty?
    a. Yes
    b. No

    c. I don’t know

7. If so, does that position report to you?
    a. Yes
    b. No
    c. n/a
8. If not, who handles information security at your institution?
    a. I handle it myself
    b. Someone on my staff, but not as a primary duty
    c. Someone else on campus not affiliated with me
    d. Nobody
    e. I don’t know
    f. n/a
    g. Comments: [comment box]
9. Do you currently teach, or have you taught in the past, for-credit courses while in your current position?
    a. Yes
    b. No
10. Concerning IT governance at you institution, how involved are you with setting campus-wide IT policy?
    a. Everything is coordinated through me and I make the final recommendation for IT policy creation.
    b. I have a large influence on IT policy but the final recommendation comes from a different body or committee.

c. I have the opportunity to provide input equal to that of other committee members and the final recommendation comes from the committee.

d. I have little to no input on IT policy.

e. Other: Please explain [text box]

11. Please indicate the extent to which you agree or disagree with the following statements about social media (Facebook, Twitter, LinkedIn, etc.)

strongly disagree	disagree	neutral	agree	strongly agree

a. I use social media on a regular basis.

b. I use social media in my personal life (non-work related).

c. I use social media for work related matters.

d. Social media is an effective way for me to communicate with co-workers.

e. Social media is an effective way for me to communicate with students.

f. Social media is an effective way for students and faculty to communicate.

g. I have concerns over security when using social media.

h. Social media should not be used for work or business.

i. Social media should not be used on campus.

j. There should be strict policy governing social media usage on campus.

k. There should be procedures and guidelines establishing proper usage of social media on campus.

l. Training for the safe and proper usage of social media should be provided to staff.

m. Training for the safe and proper usage of social media should be provided to faculty.

n. Training for the safe and proper usage of social media should be provided to students.

o. Social media should be used to replace our current Learning Management System for online courses.

p. Social media should be used to replace our current Learning Management System for technology-enhanced courses.

12. Please provide any comments you may have about social media and its usage on you campus:

    a. [comment box]

13. Please type in your name and institution in the boxes provided.

    a. Name: [text box]

    b. Institution: [text box]

14. What is your official title?

    a. [text box]

15. Would you be willing to participate in a follow-up telephone or in-person interview about social media usage at your institution?

    a. Yes

    b. No

16. If yes, please provide a phone number or email address where you would prefer to be contacted.

    a. [text box]

APPENDIX B: IRB APPROVAL FORM

The University of Georgia

Office of The Vice President for Research
DHHS Assurance ID No. : FWA00003901

Institutional Review Board
Human Subjects Office
612 Boyd GSRC
Athens, Georgia 30602-7411
(706) 542-3199
Fax: (706) 542-3360
www.ovpr.uga.edu/hso

APPROVAL FORM

Date Proposal Received: 2011-04-08 **Project Number:** 2011-10803-0

Name	Title	Dept/Phone	Address	Email
Dr. Libby V. Morris	PI	Institute of Higher Education Meigs Hall 706-542-7588		lvmorris@uga.edu
Mr. Jeff Delaney	CO	Higher Education Meigs Hall 912-547-4338		delaneyj@uga.edu

Title of Study: Technology Leader's Perceptions of Social Media

45 CFR 46 Category: Administrative 2
Parameters:
None;

Change(s) Required for Approval:
Revised Application;
Revised Consent Document(s);

Approved : 2011-04-20 Begin date : 2011-04-20 Expiration date : 2016-04-19

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs:

Funding Agency:

Your human subjects study has been approved.

Please be aware that it is your responsibility to inform the IRB:
. . . of any adverse events or unanticipated risks to the subjects or others within 24 to 72 hours;
. . . of any significant changes or additions to your study and obtain approval of them before they are put into effect;
. . . that you need to extend the approval period beyond the expiration date shown above;
. . . that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For additional information regarding your responsibilities as an investigtor refer to the IRB Guidelines.
Use the attached Researcher Request Form for requesting renewals, changes, or closures.
Keep this original approval form for your records.

Chairperson or Designee,
Institutional Review Board