Email, Instant Messaging, and Dependence Issues: The “Basics” for Communication and Need for Information Security

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Introduction

On my first day working at the Creative Corporation, the usual "first-day-on-the-job" things happened. I had to fill out tax forms and release documents. I met the managers and employees from the departments that I would be working with. I was given a desk and a cubicle area. I was issued an email account, was directed to set up my own instant message service with America Online. "This is how you will communicate with me and the rest of the company," stated my supervisor, Kitt Case. "You have a telephone, but we rely primarily on email and instant messaging here." Well of course they do, after all this is the 21st Century.

With the onset of the information age, organizations use communication technologies as a ubiquitous entity (Stair & Reynolds, 2001). In the industrial age of the 19th and 20th centuries, organizations relied on scientific management to construct themselves (Eisenberg & Goodall, 2004). Hierarchy, divisions of labor, and control of production and consumption were the key factors in organizing work and society. The industrial age was not a period where communication was viewed as an essential building block. Moving away from the industrial age and into the information age, where communication is seen as an essential foundation, there is much to learn about the concept of organizational communication. However, communication technologies today are an organizations weakest area in many respects. The onset of computer viruses and worms that attack what I refer to as the “basic” tools for interaction - email and instant messaging, have left the door wide open for security
breaches of all types. Largely, part of this issue lies with how the Internet and LANS were designed, and how “open” and trusted communication was emphasized in the early uses of adoption.

**Research Purpose & Method**

Today’s operating environment is riddled with security issues related to two important communication technologies: email and instant messaging services. This paper will examine the effects of new technologies on communication within organizations, specifically e-commerce organizations, with the issues surrounding security. In examining these affects, there are several questions that help to formulate the purposes of my research. What defines the issues of using these technologies? What is the role of the specific communication technology within these organizations? What are the security issues? The methodology for this writing will be the “case study” of an e-commerce organization, Creative. There are several ways to conduct qualitative research, such as histories, ethnography and rhetorical analysis. I choose the case study method as a preferred strategy because it helps to answer the “how” and “why” questions being posed in a research project (Yin, 1994) – similarly to this project’s questions. The Case study method also helps to focus on areas that have “real-life” context. Understanding the technologies that affect communication in organizations is certainly a present day, on-going phenomenon. Central to the methods of case study will be the understanding
of two of the relatively new communication media, emailing and instant messaging.

**Technology Use and Reason**

Creative, an e-commerce start-up company just three years old, develops invoicing and billing interface software. Organizations purchase and use the interface software to bill their customers and for invoicing to their suppliers. Online business transactions, whether business to customer or business to business, represents the "high-tech" development of business within the Internet world (Stair & Reynolds, 2001). Creative is a company that is helping to make e-commerce a reality through the billing software that they create. In being a high-tech organization, there are distinctions that set Creative apart from traditional (non high-tech) business organizations. In particular, these distinctions deal with how Creative, as an e-commerce organization, practices communication.

Traditional organizational communication has often been viewed as something that is a function or afterthought of doing work, as opposed to being how work is done (Nemec, 1999). As Eisenberg & Goodall (2004) sum up, traditional industrial organizations of the 19th and 20th centuries have relied heavily on scientific mechanisms to operate and manage people and materials – instead of communication. But as Nemec (1999) suggests, e-commerce organizations use communication to do work. Communication is the work of an e-commerce company. Creative creates software so organizations can send and
receive billing information further, faster than ever before. Today’s corporate environment relies on using communication technology to help create the service or product. Communication through technologies, such as email and instant messaging, are really the means to create the end product in e-commerce organizations.

Fundamentally, the distinction with how communication is done in an e-commerce organization rests with the invention of networking computers (Barnes & Greller, 1994) and the new communication technologies: email and instant messaging. These technologies were invented because of the need to communicate and interact on the Internet. The Internet being no more than millions of computers world wide that can connect to a "nonphysical zone" where electronic communication and information exchange can take place between computers and between people (Stair & Reynolds, 2001). While the Internet came into existence with the creation of the ARPANET project in 1969, a project started by the U.S Defense Department to network its military contractors and research agencies, its present state has been a result of the evolution of the last twenty five years. It really was not until the 1990’s that organizations started using the Internet to do business.

Now almost every successful organization is trying to do business electronically. Almost all medium to large organizations have their own website, and many are selling their services or products through the Internet. With the Internet proving to be a successful way to communicate globally, it seemed natural that organizations would attempt to network their own computers.
Many organizations (especially high-tech or e-commerce) now have their own private network, called a LAN or local area network. This networking connects every employee who has a computer to a server, where information can be retrieved or stored. Employees, or users who are part of this private network can access the information on servers, which simply put are databases. LAN's also provide a way for users to communicate with each other through email, or electronic mail.

**The Email Medium**

Getting back to my first-day-work anecdote at Creative, I am trying to make the point that communication technology such as email and instant messaging are the media of communication in e-commerce organizations. This creates an issue since these technologies were not originally designed to be security driven.

Many scholars in the communication field argue, as do I, that "work" is done through talk. With employees sitting in front of a computer, editing and manipulating graphic bits of information on an interface, there has to be a way to communicate with other employees. Being able to point and click on a button and open your email program and read a message or send a message has been one medium of communication for e-commerce organizations. Email has been the primary way of communicating between employees, suppliers and customers in the Internet world and e-commerce. As McDaniel (2000) so
eloquently puts it, "rather than take a pen to engraved stationery, we dash off a note on the keyboard and send it across the world in a heartbeat." Email has become the staple communication tool of the electronic information age. It is more widespread and cheaper than the telephone, bringing people and ideas together like never before (Berthoff, 2000). Email has changed the nature of what, when and how we do work (Barnes & Greller, 1994). We can work from home because we can communicate at any time, day or night by email. We can attach documents to our emails, enabling work to be done at almost any location that can support a laptop computer and modem.

Not surprisingly, employees at Creative all have email programs, we can see how much attention is placed on this medium. Creative employees spend about one to five and a half-hours of time using their email programs daily. Employees at Creative also reported that they receive somewhere between twenty-five and five hundred email messages per week. As Sheridan (2000) suggests, email has caused an information overload. With one estimate, some forty million workers worldwide generate about sixty billion messages a year. When compared to the amount of messages received to messages sent, we can see that there is a gap (Cook, 2005 and Appendix A). Creative employees send somewhere between ten to one hundred messages per week. I would suggest that the reason behind this gap is because employees are very selective about how to respond to the messages that they receive. Email messages are often sent for informational purposes that do not require a response. Responses to email messages may require further information that would best be done in a
different medium, such as face-to-face communication. However, as Sheridan (2000) points out, the problem with overloads of information is still relevant. Organization executives are now relying on their staffs to sort out, prioritize and direct messages to the appropriate person or department. Email communicates messages further and faster than ever before, but has increased the level of competition for the attention of a supervisor or fellow coworker.

While the amount of email messaging has certainly increased the time spent online, the content of an email message has particular importance as well. I stated earlier that email messaging was a medium for doing talk, the implication being that talk is really work. In e-commerce organizations, emails sent often contain attachments of documents. These attachments are sent back and forth between employees, who edit and reedit the information. Employees at Creative reported that they sent anywhere from two to thirty five attachments weekly (Cook, 2005 and Appendix A). I would have suggested that attachments to emails would be more numerous at Creative, if I had not surveyed the employees about other methods of document sharing. In the survey that was done, many Creative employees reported that they often save information on the local area network for other employees to access. Through document sharing of this kind, employees can spend less time opening up emails. The document that they need to work on is sitting on the network, waiting for the user to "open it up" in the appropriate application software.

Frequently attachments of a different kind are sent to users. These attachments are called forwards (Weisman, 1999). What started as chained
"forwards" to personal home computers has now successfully permeated the workplace. These forwards, which are jokes, amusing stories, anecdotes or images, are further examples of messages that compete for the attention of employees. But forwards can also arouse potential problems with their content. While seemingly innocent and harmless, forwards sometimes cross the line on being offensive or harassing. Many employees believe that their forwards are private and are not subject to the approval of the organization that they are working for. However, like office equipment, supplies and ideas (if you sign the non-disclosure release form) email messages belong to the organization. Obviously this implies that users should be careful about what messages they send and to whom. This ability provides an opening for malcontented users in an organization to divulge important and sensitive information, sometimes referred to as industrial espionage. This can also create legal problems when offensive messages are created and sent through and across networks.

Obviously email is an important communication tool in organizations like Creative. So what are the technical security risks involved with using this technology? Probably the largest issue deals with the ability to communicate to so many other computers and/or users. For example, an email forward can be sent directly or indirectly to hundreds of thousandths of users within moments, and can continue to “propagate” over a long period of time. Email messages that could contain viruses could be used to “attack” an organization, creating security breaches and possibly crippling production or services within the organization. These email viruses can spread whether or not the user opens
or views the contents of the email, depending on the virus and how it is written.

**The Instant Messaging Medium**

While email messages can be sent in a near instantaneous timeframe, they do not operate in real-time. That is, time as we know it in face-to-face talk. Although one of the fastest forms of communication so far, email may no longer be fast enough (Dalton & Wilder, 2000). There is a new way to communicate, similar to email, but faster and in real-time. This new medium is called instant messaging. It started as a consumer product about four years ago and has spread like wildfire to public and private organizations. A user can communicate with another person who is also using the instant message program. They can communicate through back and forth instantaneously and can start “chat sessions” with other users. As Deckmyn (1999) points out, this new medium is more collaborative than that of email. Because it is in real-time, people feel that their cyber conversations are as real as if they were talking face-to-face. Instant messaging also provides more contact for employees of organizations that use laptop computers that are constantly on the move (Dalton & Wilder, 1999).

Creative employees have taken full advantage of instant messaging. All of the employees have an instant messaging program, and many use the America Online instant messaging program because it seems the best fit for the organization. With the ability to hold cyber conversations in a small “pop-up”
window that can be moved anywhere on the computer screen, employees at Creative can freely communicate and collaborate with each other while working on a document or graphic interface (Deckmyn, 1999). Most Creative employees prefer instant messaging (Cook, 2005 and Appendix A) over the use of a telephone to communicate with coworkers. Because much of the work that an e-commerce organization does is through the use of a computer and through the Internet, having the instant messaging program provides a medium (more efficient than email, faster than the telephone) for doing talk. However, many of the same problematic issues that plague email are also present in instant messaging. Because of the ease and speed of instant messaging, users often write with haste and improper grammar. There is potential, like with email, to miscommunicate. Unlike email, there is better paraphrasing and dialogue because the communication is in real-time conversation. Any communication that seems apparently negative or misguided to a user can be clarified. In short, instant messaging is a better way to communicate in cyber space because there is feedback. As we all know, the ideal communication model presents opportunities for message senders to receive feedback. Instant messaging does just that.

Similar to email, the security risks are just as prevalent. Certainly industrial espionage and the potentials for damaging or offensive interaction between employees are potential issues. With the instant messaging service itself, we find that employees could use it to communicate with people outside of their work environment, offering the same productivity disabling issues and
distractions as private or personal telephone conversations. Lastly, nearly the same technical issues dealing with security exist. Since instant messaging is synchronous, as opposed to email being asynchronous, the potential for virus attacks poses a greater threat.

**Conclusion**

In examining the affects of new technologies on communication in organizations, we find that there are two specific technologies that have had the most effect. Those two are email and instant messaging. Email has become a media that has revolutionized the emphasis of work in organizations upon the using of communication. Similarly, instant messaging has changed the emphasis of the “doing of work” to using communication (Nemec, 1999). While email has been around longer, instant messaging is becoming more widespread in organizations because of its application in real-time.

With the invention of such technologies we now have organizations that use communication as the basis for doing work. These organizations are called e-commerce companies (Stair & Reynolds, 2001) and have come into existence with the onset of the new period that we call the information age (Eisenberg & Goodall, 2004). Because of the new technologies, we have had changes upon the cultures of these new organizations, specifically through communication behaviors (Adkins & Brashers, 1995). Along with the driving forces of technology, these workers have helped to create a new medium of verbal and written communication. These changes in communication are tied directly to
new technologies and can not be dismissed. Since the emphasis of this technology is placed upon “doing work” in an organization, the issues of security must be fore-front for the success and effectiveness of today’s work, government and infrastructure institutions. Organizations must place importance upon secure email and instant messaging systems and programs, while at the same time not hindering the creative and open interactions of users that surely benefits the organization – and allows the organization to function and exist. Policy and guidance by professional information technology leaders should lead this effort, as well as the continuing efforts by innovations of developers and entrepreneurs to create and design technologies that will make security effective yet not over imposing.
Appendix A
Uses of Technology Survey

Directions: Please respond to the following questions to the best of your ability.

1. Please list the kind(s) of email program(s) that you use on your personal computer.

2. Please estimate how many hours a day that you spend using your email program.

3. How many email messages do you receive weekly?

4. How many email messages do you send weekly?

5. Do you send/receive attachments of files/documents that you/other coworkers are working on? If so, how many files/documents per week are sent and or received?

6. Do you have an instant message service similar to AOL IM?

7. If you use an instant messaging program, do you spend more time communicating with coworkers or supervisors through IM or by telephone?

8. How much time do you spend (in hours) using an instant message program?

9. How often do you find yourself receiving a virus or other security threats through emails or instant messaging services?
References


