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An investigation of levels of frustration associated with spam e-mail messages

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An investigation of levels of frustration associated with spam e-mail messages

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CHAPTER 1. INTRODUCTION

The Internet is a new medium which is characterized by ease of entry, relatively low set-up costs, globalness, time independence, and interactivity (Berthon, Pitt, & Watson, 1996). Without a doubt, it is a wonderful creation that claims to bring people in different places together. Examined from a commercial angle, the Internet offers another way for companies to advertise and market their products or services unencumbered by the constraints of "traditional" media such as radio, television and newspapers. For instance, the World Wide Web (WWW) offers different formats to display advertising and different kinds of messages. Examples are banners, direct e-mail, and pop-up boxes that have become important marketing tools for today's electronic generation.

An impetus for the popularity of the Internet marketing is the growing number of people on-line and the ease of using the Internet. Web-based interpersonal interactions carry the potential for exposure to all manner of site-based advertising and promotional messages between one or more individuals on-line (Staffords, 2001). In other words, the more time people spend on the Internet, the greater the probability that they are exposed to Internet advertising. More exposure, however, does not guarantee that people will click on or view the advertising piece while on-line.

According to Berthon, Pitt and Watson (1996), a central dilemma confronting the Internet advertiser is how to turn surfers into interactors. Advertising on the Internet usually requires the user to click away from his current location to the advertising page. For this to occur, the consumer must be adequately interested in the product or sufficiently intrigued by the teaser (McDonald, 1997). The same is true of e-mail. Marketers also need to know how to turn e-

mail sorters to interactors. They need to attract e-mail recipients to read their information of products and services.

There were 82 million e-mail accounts in the US in 1998, and about 225 million people were able to send and receive e-mail worldwide in 1999 (Leonard, 1999). By 2006, the total number of e-mail massages sent daily is predicted to exceed 60 billion worldwide, up from 31 billion in 2002. Slightly more than half of these messages will be person-to-person or non-commercial e-mails (IDC, 2002). Further, many people have more than one e-mail account work, personal. Armstrong (2001) claimed that e-mail is more popular than the telephone was after its first 30 years of existence, and is by far the most widely used system on the Internet.

Undeniably, e-mailing is now a fixture of modern communication. Many people prefer it because it is a non-visual and non-auditory form of communication (Suler, 1998). It creates a psychological space in which pairs or people, or groups of people interact. As Leonard (1999) points out, e-mail is convenient, saves time, brings people closer to one another, and helps manage increasingly complex lives. But it is also inconvenient, wastes time, isolates people by reducing interpersonal contact, and introduces more complexity into already harried lives. For example, the famous ILOVEYOU virus infected more than 100,000 computer systems worldwide within a few hours of its release and tens of millions within days. The virus cost businesses an estimated $6.7 billion over the first five days in lost sales, and productivity (Lee & Anderson, 2001).

Businesses are planning to increase their e-mail advertising by 50 percent each year. For example, Doubleclick, a Web advertising company, reported their e-mail marketing business

net revenue for 2001 was $207 million, up from $203.4 million the year before. By 2005, e-mail advertising revenue is forecast to total $1.5 billion (Saunders, 2002), and the whole e-mail marketing is expected to balloon to a $7.3 billion (Perkins, 2002).

Legge (2001) claims that e-mail marketing is one of the most effective ways to stay in touch with customers and prospects on-line. Typical goals of using e-mail in marketing may include increasing open rates, improving conversion or sell-through of a particular product, acquiring new customers, or launching a new product or service (DiGuido, 2002). From marketers' point of view, e-mail can be effective as a direct marketing device, also called direct e-mail. Direct e-mail marketing is a platform for marketers to establish direct customer communications, offering in-depth targeting and economy unmatched by traditional direct mail campaigns. Marketers do not have to pay the high cost of printing and postage, and manage the laborious process involved. A marketer may spend about $0.05 to send an e-mail advertisement, compared to $0.25 to $3.00 to send a postal advertisement (Cullen, 2002). In addition, e-mail marketing has a response rate of 5 to 20 percent while traditional direct mail has only a 1 to 2 percent response rate (Perkins, 2002).

Spam

Though e-mail marketing brings benefits, it also poses a serious problem: spam (or unsolicited commercial e-mail). Spam is defined as " an e-mail message that the recipient—and only the recipient—deems inappropriate, unwanted, or no longer wanted for any reason" (Soltoff, 2002). According to Templeton (2002), the first e-mail spam was sent by DEC, a computer company, in 1978 through the Advanced Research Projects Agency Network (ARPANET). However, a host of leading e-mail marketing firms, advertisers and advertising

industry groups have said that the continuing growth of spam hurts the industry by dissuading consumers from opening commercial mail (Saunders, 2002). Many people think spam is generally harmful to e-mail users, especially pornographic or otherwise inappropriate spam content (Weiler, 2002).

Spam not only decreases consumers' confidence toward commercial e-mail and slows the network speed, but also burdens ISPs by occupying bandwidth, taking up space and requires staff time to manage (Samoriski, 1999). Some companies such as Hotmail and Yahoo! are currently providing the consumer with the option to identify mail as spam. After marking a piece of mail as spam, a recipient will no longer receive e-mail from the underlying address of the e-mail sender (Soltoff, 2002).

At present, Jupiter Research reported that the typical e-mail user received 2,257 pieces of "commercial e-mail" in 2002, 60 percent of them were unwanted spam and the rest from merchants that have been permitted by the e-mail user to contact (Cullen, 2002). This research also pointed out that every e-mail user gets 6.2 unsolicited items per day in their in-box. Brightmail, a spam fighting software maker, said the company anticipates spam accounted for 40 percent of all e-mail traffic, a dramatic rise from the eight percent it accounted for in 2001 (Morrissey, 2002). More specifically, according to research firm IDC, spam volume jumped 28 percent in North America alone, to 870 billion messages in 2002 (Gill, 2003). In a recent study, Jupiter estimates consumers will receive an average of 3900 spam messages a year by 2007 (Barnako, 2002).

Frustration

In the study by Oatley and Duncan (1994), they defined frustration as " thwarted, or desiring a goal that has been blocked or made unattainable by the action or inaction of another, or of the self." In regards to the Internet, besides frustration there is the additional level of complexity and confusion (Gazin, 2001). The real issue is the point at which spam became a serious problem for many Internet uses. Users know the frustration of an inbox clogged with unwanted correspondence from vendors of porn, cheap loans and anatomical enlargements (Lee & Anderson, 2001; The Economist, 2002). Brian (1999) predicted that spam is going to be worse if it is profitable for businesses to send a million advertisements for the sake of one sale.

Purpose of this study

Although previous researchers have already examined unsolicited commercial e-mail (Samoriski, 1999) and spam (Wright, Truman & Bolfing, 1999; Templeton, 2002), none of them have really taken a close look at the relationship between spam, e-mail subject lines and daily frustration. This study not only wants to examine what consumers believe is spam compared to direct e-mail, but also to determine to what degree consumers believe spam negatively influences their daily life. The third purpose is to see if frustration with spam can be explained by demographic characteristics of the receiver.

Results of this study will be useful to the Internet marketers who will decide on the appropriate use of e-mail to effectively market their brands. Also, publishers of e-mail newsletters may benefit from this study. They would like to know what kinds of e-mail subject lines that people consider spam and often delete immediately. E-mail newsletter publishers can avoid writing spam-like subject to get more positive response from recipients.

In sum, this study asks: What is spam and what is direct e-mail advertising? More specifically, what kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising? What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients? Do people experience frustration when they receive spam e-mail? If so, with what intensity? Which groups are more upset about spam? How frustrating are spam messages as they are perceived by participants?

CHAPTER 2. LITERATURE REVIEW

E- mail, or electronic mail, appeared with a program called MAILBOX in the 1960s (Kohl, 2000). In an earlier description of e-mail, Trudell et al. (1984) introduced it as a major communication medium that was a response to the inability of traditional delivery services to keep up with mail volume and the decreasing cost of new technologies. E-mail's primary purpose at that time was the delivery of information from one person to another in the shortest time. Fleishman (1983) claims that the electronic mail system is part of the trend toward the "paperless" office and the "checkless society." It has led to employees perceiving fewer interruptions in their daily activities and better control of their time (Caswell, 1988). Craine (2001) suggests that e-mails constitute a "corporate memory" of how an organization conducts its business; they provide evidence of corporate decisions and behavior. E-mail messages are testimony to an organization's functions, activities and transactions.

In fact, e-mail has not only trounced the traditional mail system, but also transformed global communication modes (Caswell, 1988). Vervest (1985) considered e-mail as more than just delivering mail items at the proper destination; it is a single stage in the total process of information handling. It is considered to be computer-assisted interpersonal communication with an extensive storage and forwarding capability (Townsend, 1984; Caswell, 1988). Blum and Litwack (1995) agree with this observation, stating that e-mail is a key communications product of the information age, which enables people to exchange revisable multimedia information and enhances the workflow. Scanning, imaging technology, speech recognition, and video capabilities have enhanced e-mail's usefulness to

individuals and businesses. Finally, e-mail makes possible real-time transaction processing, direct client-server database access, printing, and interactive file transfer.

Because e-mail was developed as a tool of commerce, its role in marketing has gradually expanded (Hespos, 2001). An online media company, Active Media, found that 43 percent of the 2,500 on-line shoppers agreed that e-mail was an important factor in their most recent purchase (Armstrong, 2001). As e-mail use burgeons, consumers will become more comfortable with accepting advertisements through their computers because familiarity and trust are enhanced (Saunders, 2002).

Armstrong (2001) suggests that e-mail is a potent advertising vehicle because it combines elements of interactivity and self-focused choice on or off the Internet. E-mail advertising in recent years has claimed phenomenally successful response rates. Although Internet users generally have negative attitudes toward Internet advertising, Mehta and Sivadas (1995) found that computer users were less averse to receiving targeted electronic communications from marketers. This led McCandlish (1996) to hypothesize that people treat e-mail advertising differently from Web advertising because they have different perceptions of them. McCandish (1996) likens the Web to a library. Web advertising bothers people, he says, because no one wants to read an advertisement before borrowing and reading a book from the library.

E-mail has many features. Among them are immediacy, the tendency to interrupt, the personal nature of its contents, perceptual closeness, and decreased monetary cost. In short, e-mail is personal, direct, and targeted (Rhodes, et al., 2001). Given these features, e-mails and websites differ considerably in perceptive closeness. E-mail is not a "place" people go to,

but rather a mode people switch "into." On the other hand, Trevino and Webster (1992) pointed out that e-mail, a kind of asynchronous communication, allows users to control interaction to a greater extent. Since users are freed from communicating in real time, they are released from the pressure to meet in limited time intervals typically allowed by face-to-face interaction (Walther, 1996), and able to complete and edit one's comments more mindfully and deliberatively (Hiemstra, 1982). For instance, users have the ability to quote parts or all of what their partner said in his previous message (Suler, 1998). Correspondingly, the lack of face-to-face cues in e-mail is easy to result in ambiguity.

Basically speaking, e-mail allows marketers to get in front of customers and prospects in a concrete and forceful way (eMarket, 2001). It is no small wonder then that according to Jupiter Communications (2000), the average number of commercial e-mail messages that US on-line consumers receive per year will jump from 40 in 1999 to more than 1,600 in 2005.

Many studies show that revenue from e-mail marketing is expected to climb dramatically in the next few years (eMarketer, 2001; Saunders, 2002). A survey of 1,000 Americans found that only one percent of Web surfers click on banner advertising – about half the success rate of direct mail advertising (Nowak, et al., 1999). However, a large portion of e-mail marketing growth is due to the high level of accuracy from opt-in e-mails, which recipients sign up for, that typically sees about a 3.2 percent click-through rate.

The Prospect for Spam

A negative aspect of e-mail involves "spam" (Strangelove & Bosley, 1994; Davidson, 1999). "Spamming" results in "e-mail overload" from companies people have never heard of before (Davey, 1999; Hespos, 2001), and it overloads network servers and costs money to

store (Overly, 1999; Marks, 2002). Generally speaking, a spam usually has three characteristics: it comes with a forged return address, it has deceiving headers, and it does not allow consumers a valid way to opt out (Olsen, 2001).

Actually, anyone can be a spammer if he or she has minimal knowledge about the Internet, a computer, a list of e-mail address and an Internet connection (Samoriski, 1999). Spammers use sophisticated software that scans newsgroups, corporate Websites, and other areas of the Internet for e-mail addresses to add to their mailing lists. Or the list can be generated from public directories, such as those provided by many universities to look up student e-mail addresses (Roberts, Feit, & Bly, 2000). Otherwise, they may buy a list of e-mail addresses from a list broker. Then they can send e-mail in bulk to sell products and services online.

Overly (1998) pointed out that there are two approaches to fight spam. The first approach is using a filtering software installed at the server or the firewall that uses a set of rules to identify and eliminate the spam e-mail. Second, most popular e-mail software can be programmed to automatically delete messages based on the same types of rules. In addition, the Federal Trade Commission (FTC, 2002) offers consumers a place to report spam e-mail by pursuing law enforcement against people who send deceptive spam.

Meanwhile, the FTC encourages consumers to forward spam to their Internet service providers (ISP) and alert them about the spam problems. Consumers can also send a complaint to the sender's ISP to let them cut off spammers who abuse their system. More than likely, if someone become known as a spammer, the ISP will set up blocks so that no e-mail from this spammer's domain can be delivered to their systems. A spammer's account

also might be terminated if the Internet provider receives complaints from other consumers (Roberts, Feit, & Bly, 2000).

However, due to the nature of spam as being less identifiable than viruses, any measure people take to block spam must make sure not to do something that would block legitimate e-mail (Gill, 2003). Some legitimate e-mail marketers would be upset if they are blacklisted as spammers (Washington, 2003). Goodwin (2003) claimed that the problem is that creators of those blacklists often make arbitrary decisions about whom they add the list. It is easy for legitimate address to be mistakenly added to a blacklist.

Spammers usually change their e-mail address and service providers in order to avoid being identified and filtered (Samoriski, 1999). For example, sometimes they send e-mails from what appears to be yourself (Kapadia, 2002). Another way they get around the filter is asking the recipient to send an e-mail to have them removed from the list only when recipient truly does the "remove" process. More e-mail is encouraged by confirming that the e-mail reached them (Levine, 2002; Neff, 2003).

The Prospect for Frustration

Because spammers frequently use false addresses, that render complaints useless, spam has created a large number of frustrated consumers with extremely negative attitudes toward spam (Wright, Truman & Bolfing, 1999; Brian, 1999; Bradner, 2002). It erodes consumer confidence and cause people to hide their e-mail addresses (Foster, 1999). Some critics believe spam is the latest incarnation of sales-directed e-mail, and have advised against blindly blasting out millions of messages to hit the few individuals interested in products (Haar, 1999).

Frustration usually results in anger. Tucker-Ladd (2000) observed that intensity of frustration will increase if the goal is highly desirable. There are several physiological responses that accompany frustration, including higher blood pressure, sweating, and increased energy.

Generally speaking, daily life can contribute to frustrations. For example, personal challenge to public administration may frustrate people because of downsizing, reduced budgets or institutional constraints in the organization (Heinzen, 1994). Researchers are making note of employee daily emotions (Oatley & Duncan, 1994; Tucker-Ladd, 2000). Infants and children also experience frustration. Stifter and Grant (1993) examined the contribution of infant characteristics and parental reaction to infant frustration. According to Haiman (2000), the ability to tolerate frustration has important implications for learning. Teachers and parents could use children's frustrations as opportunities to teach them coping skills (Katz, 1996; Stansbury & Sigman, 2000).

Dealing with computers also increases frustration levels due to slow data transmission, a computer virus (Brock, 1998; Nagai, 2002), or malfunctioning hardware (Fernandez, 1997). Orman (1996) pointed out that much of this frustration comes from expecting ourselves or computers to always function properly. Another example is Hudiburg's (1989a, 1992) studies about computer hassle, which means a stressor that comes from interactions with computers and computerized technology. He applied the Computer Hassles Scale to evaluate computer-related stress and found that the interaction with computer technology can be a source of stress to some people.

In a later study, Kraut et al. (1998) found that greater use of the Internet was associated with increases in depression. Furthermore, Gazin (2001) claimed that while the Internet can be a valuable resource, it can add an additional level of complexity and be a great source of confusion and frustration, especially when users are in a hurry to find something. A survey of United Kingdom (U.K.) Internet users (Adviser.com, 2001) had supported what Gazin stated. The group indicated that up to 71 percent of British Internet users have experienced Internet rage at some time because the amount of information available on the Internet continues to increase. Levels of frustration reach a peak when search engines return irrelevant search results.

Because on-line consumers have demonstrated little patience for untargeted e-mails (Gurian, 2001), state governments, such as those of Washington and California, passed an anti-spam law to protect citizens from junk e-mailers (Mariano, 2002). Twenty-six state laws regulating commercial e-mail were added to the books from 1999 to 2002 (Isaacson, 2003). Eight of these spam laws have the advertisement ("ADV") labeling requirement. Several suits are being litigated and others have resulted in small damage awards, which have been hard to collect. In order to protect consumers, California's attorney general filed the first state-led suit against a bulk-mail marketing firm, PW Marketing, which has sent millions of illegal unsolicited e-mails advertising for spamming (Ostrom, 2002). In this case, attorney's decision to take legal action was highly praised by anti-spam activists.

Rather than litigating against spam, thousands of anti-spam sites were built recently. Two of the examples are "Stop Junk Email", and "Fight spam on the Internet." Some experts

claimed that it reflects the frustration and anger expressed by a growing number of Internet users about spam (Pelline, 1996).

Suler (1999) pointed out that the more an underlying need has been frustrated, denied, or neglected, the more intense is the person's predisposition to seek fulfillment anywhere he or she can.

As such, this study asks:

RQ1: What is spam and what is direct e-mail advertising? More specifically, what kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising?

The most powerful of direct mail formats and instruments in traditional direct marketing is the letter (Griffin, 1993) because it is like a personal word from a friend. From the Internet marketer's point of view, one of the first aspects of an e-mail message that people view is the subject line. Although senders have control over other aspects of e-mail visible in the user's inbox (e.g. the sender, the length, an attachment, etc.), subject lines are the most flexible and intended to communicate to the recipient the content of the message (Rhodes, et al., 2001). In general, subject lines that offer value and are benefit-oriented, witty, and personalized generate greater open rates (DiGuido, 2002). According to Rhodes, et al. (2001), the subject line is the invitation because users are likely to decide whether or not to read the e-mail on the basis of subject line. Moreover, DiGuido found that customers tend to be more receptive to messages from the brands they know and trust.

Currently, there is a fine line between spam and direct e-mail, but the marketing industry

is trying to use legislation to distance it from spammers (Samoriski, 1999). For instance, many marketers use terms like "direct e-mail," "database," and "electronic" marketing to differentiate way they conduct business over the net compared to what spammers do. Furthermore, the Direct Marketing Association (DMA) claims that there is a distinct difference between spam and e-mail marketing. Spam is intended to be misleading and deceptive. The real company's name is never included. On the other hand, e-mail marketing is very clear, obvious and specific. It allows the consumer to opt out, which means that consumer can choose not to receive additional e-mail from a given company (Perkins, 2002).

Some points mentioned about direct e-mail writing in the Direct Marketing-approved Commercial Solicitations Online Guidelines were released last year (Perkins, 2002):

- E-mailed solicitations should disclose the sender's identity and the subject line should be clear, honest, and not misleading. Marketers' e-mail should also include specific contact information where customers can obtain service or information. The marketer's street address should be made available in the e-mail solicitation or by a link to the marketer's Website where consumers should also find the marketer's privacy policy.

- Each marketing e-mail must include a link or notice customers can use to request that the marketer not send future e-mailed solicitations.

Spam is similar to junk mail, which is basically direct mail that has been mistargeted (Nalimov & Garfield, 1983). People react to junk mail similarly to getting a wrong number on the telephone—a waste of time and money. Nalimov and Garfield (1983) stressed that

everyone expects to obtain useful information through the telephone, mailbox, or television, but occasional miscommunication might still occur.

RQ2: What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients?

According to MacPherson (2001), the subject line is the first opportunity not only to make an impression on readers, but also to convince the reader to continue. At the same time, recipients' filtering unwanted e-mail also based on subject line is not effective because subjects are forged (Neumann and Weinsten, 1997; Adam, 2002). People usually receive scam offers by e-mail, for example, chain letters, weigh loss claims, credit repair offers and adult entertainment (FTC, 2002). In most cases, one or more of the following characteristics of subject usually indicate the e-mail is spam and unworthy of recipient's time (Curtis, 2002):

- USE OF ALL CAPITAL LETTERS, (which is the equivalent of yelling)
- Multiple exclamation points, question marks, or other special characters,
- Single or multiple uses of dollar signs,
- Obscene or sexually oriented language,
- Promises of quick financial gains with little or no risk,
- Offers for free or low–cost consumer items,
- Promises of quick weight loss,
- Subject lines that start with "ADV (for advertisement):"

- Credit card offers for credit repair services.

One study (Rhodes, et al., 2001) showed that people responded much more positively to subject lines that were short.

RQ3: Do people experience frustration when they receive spam e-mail? If so, with what intensity?

Brian (1999) claimed that downloading e-mail is an act of frustration and extreme annoyance, and the irritation level increases with each additional spam. Some users are bombarded with so many messages that they cannot all be processed (Lee and Anderson, 2001). According to a recent survey conducted for Symantec Corp., the Internet security supporter, 65 percent of 1,000 respondents reported that they spend more than 10 minutes each day dealing with spam; 24 percent reported dealing with it for more than 20 minutes per day (Weiler, 2002). Another study found 60 percent of e-mail users deleted messages from unfamiliar sources immediately (Cullen, 2002).

RQ4: Which groups are more upset about spam?

Hudiburg, Brown and Jones (1993) observed that computer users' stress differed for business computer users and college students. Furthermore, the stress reactions in men were not shown up. This study also found that demographical difference, such as the gender, occupation or age, may be factors that affect people's frustration toward spam.

RQ5: How frustrating are spam messages as they are perceived by participants?

The subject line is a tiny microcosm unto itself (Suler, 1998). It is used to simply summarize or introduce the major idea contained in the body of the message. Most of the

time, spam messages do capture some amount of user attention because a recipient usually does not discard a message before reading or, at least, skimming it (Gopal, Walter & Tripathi, 2001).

The generally accepted rule in e-mail marketing is that subject lines should not be more than 45 characters long, which is about five or six words (Bellbey & Gedney, 2003). However, spammers will try to exploit the dynamics of a subject line in order to trick recipients into opening the message (Suler, 1998). These subjects may contain headings such as: "I know you'll like this" or "Get rid of your debt today." Spammers also continue to create ingenious ways to bypass e-mail filters by putting messages in the subject lines that make people think the mail is from a friend (Kapadia, 2002), or make it look as if the message came from the recipient (Schwartz & Garfinkel, 1998).

CHAPTER 3. METHODOLOGY

Design

To gather data for this study, Q methodology was applied. Q methodology was developed by William Stephenson in 1935 and is most often related to quantitative analysis because factor analysis is often applied to Q-sort data (Brown, 1980, 1993, 1996; Wolfe, 2000). The purpose of using Q methodology is to reveal subjective structures, attitudes, and perspectives from the standpoint of the person being observed (Brown, 1980; Waters & Deane, 1985; McKeown & Thomas, 1988; Wolfe, 2000). The basis of Q methodology is the Q-sort technique, which conventionally involves the rank-ordering of a set of statements according to the degree of agreement or disagreement (Brown, 1996). Essentially, Q-sort study participants are provided with attitude statements selected by the researcher based on content validity, variability, and differentiation among individuals (Prasad, 2001).

The Q-sort is a useful ranking procedure because it uses a forced-choice method, where one must rank all the descriptors in a pool, and each selection is affected by the other selections (Prasad, 2001). The sorting is interactive, and dynamic (Brown, 1980). Furthermore, since every person perceives the world differently, Q-sort uses these subjective viewpoints to construct typologies of different perspectives (Steelman & Maguire, 1999), examine and reach understandings about personal experience (McKeown & Thomas, 1988). On the other hand, Waters and Deane (1985) stated that the reliability of a Q-sort description increases when several sorts are averaged to obtain a composite Q-sort description.

After Stephenson introduced the Q-sort technique, it has been applied in many studies to find quantitative results about attitude statements. For example, it has been used as an

assessment of parenting behaviors and child-parent attachment (Lawton, et al., 1983; Schneider, Tardif & Atkinson, 2001), in measuring women's attachment processes in eating disorder and depression (Cole-Detke & Kobak, 1996), and an assessment of personality by novice evaluators (Whitlow, 1999), an instrument to measure the attitudes of physicians toward patients with HIV/AIDS (Prasad, 2001).

There are many examples of the use of Q-sorts in communication studies. For example, both of Micky (1995), and Popovich and Popovich (1996) used Q-Sorts in their public relations book and studies. Felkins, Chakiris and Chakiris (1993) pointed out that Q methodology can be used to assess organizational communication and image, management attitudes toward organizational communication and change, support teamwork, and develop strategic planning. An example of Q's use in marketing researches is Wolfe (2000) who applied Q methodology to investigate the customer orientation. Q methodology also provided a way for Lee and Anderson (2001) to identify the different types of Internet users and explore why some people do not use the Internet.

In this study, the Q-sort technique was used to investigate people's (1) preferences of advertising e-mail subject lines; (2) attitudes to spam and advertising e-mail subject lines; (3) levels of frustration on spam e-mail (4) and levels of frustration on spam e-mail subject lines. Besides the Q-Sort technique, a written survey was utilized to gather the information on demographics, Internet use, and e-mail use.

Sampling

In this study, the population sample for study participants was composed of people who work or study in the Greenlee School of Journalism and Communication, at Iowa State

University. Because a Q-methodology is less concerned with the ability to generalize the findings from the analysis, and usually uses smaller, well-sized samples to analyze variability within cases. And Q analysis does not yield statistically generalizable results. Instead, the results produce an in-depth portrait of the typologies of perspectives that prevail in a given situation (Steelman & Maguire, 1999). As such, this study gathered 40 participants from the sample population as a way to reflect how e-mail users in a university environment view e-mail spam.

Procedure

Q-Sorts. Applying Q-Sort technique here can help to determine perceptions of what is spam e-mail subject. Because the questions addressed different issue areas, different Q-samples will be created for each question.

Thirty advertising e-mail subject lines provided the Q-sample for question 1: *What kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising?* Participants ranked these items from "most interesting" to "least interesting." Thirty e-mail subject lines, which combine spam-like and advertising subjects, emerged from question 2: *What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients?* Participants were asked to distribute these statements from "most like spam" to "most unlike spam." Thirty events of daily frustration formed the basis of the Q-sample for question 3: *Do people have frustration when they receive spam e-mail? If so, with what intensity?* In this set of Q-Sort, participants placed statements from "highest frustration" to "lowest frustration." Thirty spam-like subject lines were used in the Q-sample from the question 5: *How frustrating are spam messages as they are perceived by participants?*

Participants were required to sort their responses from "most frustration" to "least frustration."

The participants began by reading a consent form for this study and were advised to freely move these descriptor cards until they are satisfied with their final placement. In many cases where Q-Sorts are done, participants are asked to place the statements in an inverted quasi-normal distribution. Placing the cards in the quasi-normal distribution encourages the respondents to consider the relationships among the statements more systematically (Steelman & Maguire, 1999).

The Q-set. Each descriptor card was printed on a 3x5-inch card for sorting has an assigned number to identify. The numbers are randomly assigned from one to 30. The source of the "statements" can vary greatly from actual short statements to pictures or images, sounds, bits of color, etc (McKeown & Thomas, 1988). However, the statements to be ranked by the participants here were derived from e-mails received through a Yahoo! e-mail account set up by the researcher for this study. The researcher created this account (isugreenlee@yahoo.com) on January 14th, 2003. After starting to use this account, the researcher registered to become a member of several websites, such as Amazon, eBay, CNET, Overstuck, Starbucks, and Priceline.com. In addition, subscribing to daily e-mail newsletters from The New York Times, and a weekly e-mail newsletter from CNET. The researcher agreed to receive promotional messages, like new products or special discounts, from these websites.

During the period of this study, the researcher used this e-mail account actively to purchase online, send electronic cards, and answer three online surveys. An average of five to

ten e-mail messages were received daily. A sample of subject lines was obtained by importing actual subject lines from the inbox of this account. In order to decide which e-mail is spam, the researcher used the characteristics of subject lines that Curtis (2002) discussed as recognized as unsolicited and unwanted e-mail. Again, subject line of spam e-mail has one or more of the following characteristics:

- Multiple exclamation points, question marks, or other special characters,
- Single or multiple uses of dollar signs,
- Obscene or sexually oriented language,
- Promises of quick financial gains with little or no risk,
- Offers for free or low–cost consumer items,
- Promises of quick weight loss,
- Subject lines that start with "ADV (for advertisement):"
- Credit card offers for credit repair services.

In addition to spam e-mails, advertising e-mail subject lines were gathered from the same e-mail account. For the purpose of the study, besides the e-mail newsletters and personal e-mail, e-mails that did not have any characteristics of spam would be categorized as advertising emails. Finally, 30 statements of daily frustration were generated from interviews with five people, who work or study in the Greenlee School, ISU.

Written Survey. Every participant was given a score sheet at the beginning of sorting.

This sheet provided participants a place to fill in their Q-Sort results and answer some questions about their background characteristics. For example, demographic questions may include options of sex and occupation. On the other hand, questions about the Internet use asked "how many hours do you spend on the Internet per week," "how many e-mails do you receive per day?" The information gathered in this part will help to compare the first Q-Sort results to determine which group is most upset about spam.

Data Analysis

This study used SPSS for statistical analysis, which includes correlations, and factor analysis. Variables in Q-method are that the people performing the Q-sorts, not Q-sample statements (McKeown & Thomas, 1988). Differences in scores between statements are assumed to reflect differences in the amount of importance attributed to them by the person. For instance, an item scored +5 is understood to be of more importance to the subject than an item scored +1 (Brown, 1980). Every item was scored in terms of its placement (piles 1-9) on the distribution (e.g., each of the two items in pile 9 receives a score of 9, each of the six items in pile 5 receives a score of 5, and so forth).

CHAPTER 4. RESULTS AND DISCUSSION

Description of the Sample

A total of 40 participants (four faculty, four staff, and 32 students) successfully sorted 120 statements on a nine-point scale during March 2003. The time for Q-sort construction varied across individuals and ranged from 15 minutes up to a full hour. Among these participants, twenty-two were female (55 percent), and eighteen (45 percent) were male. Twenty-eight (70 percent) participants were under 25 years of age. The person sample contained two racial groups: thirty-one Caucasians (77.5) and nine Asians (22.5). As to the level of the education, nineteen (47.5 percent) of forty participants have been educated "some college," while four participants (10 percent) were college graduates, and seventeen (42.5percent) had been in various completion stages of graduate work.

Participants were experienced Internet users. Twelve participants (60 percent) spent more than eleven hours on the Internet per week. Following with the rapid development of e-mail, there were 45 percent of participants that have used e-mail for more than seven years, and almost half of all sample (47.5 percent) had more than three e-mail accounts. Meanwhile, 65 percent of the 40 participants claimed that they have received less than 20 e-mails everyday. Furthermore, 55 percent participants mostly use the Internet for World Wide Web, while others (45 percent) used the Internet mainly for e-mail. Secondly, the participants reported using the Internet for e-mail (47.5 percent), World Wide Web (35 percent), and the Instant messenger (17.5 percent), such as MSN Messenger or Yahoo! Messenger. Twenty-seven participants (67.5 percent) replied that they have subscribed to e-mail newsletters, and almost half of them (44.4 percent) have subscribed to more than 4 e-mail newsletters. The most

popular kind of the e-mail newsletters they have subscribed to are news (25 percent), entertainment (17.5 percent) and sports (17.5 percent).

Factor analysis

Factor analysis was employed to detect potential relationships among the Q-sort items. In the factor analysis, the eigenvalues cutoff was 1.0, and varimax rotation was used.

Factor loadings were examined for the statements in each factor. The results of factor analysis in the sort 1 (see Table 1) showed that in most cases, however, there was only one item associated with each factor. Only three statements (statements 6, 18, 28), which are gift-like item grouped together. The most likely explanation is that the statements of 30 items are wide ranged.

The rotated component matrix of the sort 2 and 4 did not show up, because rotation failed to converge in 25 iterations (convergence=1.988E-04). On the other hand, the factor analysis of the sort 3 (see Table 2) has the similar results to the sort 1. The difference is that the sort 3 got two groups, and each group had two statements. One of the groups could be considered as computer problems, such as computer jammed (statement 7) and the Internet browser crashes when closing files (statement 14). The second factor set statements 13 and 27 together. However, it is not easy to find a common conception between "received an e-mail about products I would never buy (statement 13)" and "missed the favorite TV program (statement 27)." The only similarity probably is that both of them are talking about "liking." Take the statement 13 for an example, when people do not like some products, they would never buy them, or even want to read any relevant information of them.

Table 1. Rotated loadings of the sort one

Statements	Component									
	1	2	3	4	5	6	7	8	9	10
Q124	.81	*	*	*	*	*	*	*	*	*
Q116	-.72	*	*	*	*	*	*	*	*	*
Q104	-.70	*	*	*	*	*	*	*	*	*
Q130	-.59	*	*	*	*	*	*	*	*	*
Q108	*	-.72	*	*	*	*	*	*	*	*
Q107	*	.67	*	*	*	*	*	*	*	*
Q115	*	-.66	*	*	*	*	*	*	*	*
Q113	*	-.62	*	*	*	*	*	*	*	*
Q127	*	.58	*	*	*	*	*	*	*	*
Q106	*	*	.83	*	*	*	*	*	*	*
Q105	*	*	-.68	*	*	*	*	*	*	*
Q118	*	*	.62	*	*	*	*	*	*	*
Q128	*	*	.62	*	*	*	*	*	*	*
Q109	*	*	*	*	*	*	*	*	*	*
Q101	*	*	*	.72	*	*	*	*	*	*
Q120	*	*	*	-.68	*	*	*	*	*	*
Q102	*	*	*	-.55	*	*	*	*	*	*
Q117	*	*	*	*	.79	*	*	*	*	*
Q112	*	*	*	*	-.70	*	*	*	*	*
Q110	*	*	*	*	*	.80	*	*	*	*
Q122	*	*	*	*	*	-.54	*	*	*	*
Q111	*	*	*	*	*	-.51	*	*	*	*
Q119	*	*	*	*	*	*	-.85	*	*	*
Q129	*	*	*	*	*	*	.75	*	*	*
Q123	*	*	*	*	*	*	*	.77	*	*
Q125	*	*	*	*	*	*	*	-.75	*	*
Q103	*	*	*	*	*	*	*	*	.84	*
Q114	*	*	*	*	*	*	*	*	*	-.85
Q121	*	*	*	*	*	*	*	*	*	*
Q126	*	*	*	*	*	*	*	*	*	*

NOTE: The * indicates that the number is between 0.50 and –0.50
Rotation Method: Varimax with Kaiser Normalization.

Table 2. Rotated loadings of the sort three

Statements	Components										
	1	2	3	4	5	6	7	8	9	10	11
Q310	.83	*	*	*	*	*	*	*	*	*	*
Q324	-.75	*	*	*	*	*	*	*	*	*	*
Q315	-.67	*	*	*	*	*	*	*	*	*	*
Q317	-.58	*	*	*	*	*	*	*	*	*	*
Q307	*	.82	*	*	*	*	*	*	*	*	*
Q314	*	.78	*	*	*	*	*	*	*	*	*
Q321	*	-.52	*	*	*	*	*	*	*	*	*
Q328	*	-.51	*	*	*	*	*	*	*	*	*
Q316	*	*	-.85	*	*	*	*	*	*	*	*
Q312	*	*	.82	*	*	*	*	*	*	*	*
Q313	*	*	*	.73	*	*	*	*	*	*	*
Q327	*	*	*	.68	*	*	*	*	*	*	*
Q322	*	*	*	*	*	*	*	*	*	*	*
Q305	*	*	*	*	-.80	*	*	*	*	*	*
Q301	*	*	*	*	.75	*	*	*	*	*	*
Q319	*	*	*	*	.56	*	*	*	*	*	*
Q309	*	*	*	*	*	*	*	*	*	*	*
Q304	*	*	*	*	*	-.83	*	*	*	*	*
Q302	*	*	*	*	*	.67	*	*	*	*	*
Q318	*	*	*	*	*	*	.80	*	*	*	*
Q311	*	*	*	*	*	*	-.53	*	*	*	*
Q308	*	*	*	*	*	*	*	*	*	*	*
Q320	*	*	*	*	*	*	*	*	*	*	*
Q329	*	*	*	*	*	*	*	.81	*	*	*
Q323	*	*	*	*	*	*	*	.66	*	*	*
Q306	*	*	*	*	*	*	*	*	-.83	*	*
Q303	*	*	*	*	*	*	*	*	-.66	*	*
Q325	*	*	*	*	*	*	*	*	*	-.81	*
Q330	*	*	*	*	*	*	*	*	*	.58	*
Q326	*	*	*	*	*	*	*	*	*	*	-.91

NOTE: The * indicates that the number is between 0.50 and –0.50
Rotation Method: Varimax with Kaiser Normalization.

Results

RQ1: What is spam and what is direct e-mail advertising? More specifically, what kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising?

Table 3 lists the 10 most characteristic statements of the sort 1, their means and standard deviation. As indicated, participants were generally most interested in travel information (statements 26, 21, 17, and 27). Especially statement 26 (mean=7.35), which is the most interesting statement ranked by forty participants. The table also showed that participants were attracted to those subject lines that have free food offered by the famous chain restaurant in the city (statement 11, mean=6.75), sales of digital products (statements 16, 5, 23) and computer supplies (statement 20, mean=5.33).

Table 3. Descriptive statistics of the sort one (Most characteristics)

Statements (Advertising subjects)	*Mean*	*Standard Deviation*
(26) Low Fare Alert: Deals from Des Moines, IA	7.35	1.93
(21) Cheap Trips Airfares – Best Price Guaranteed	6.78	1.33
(11) Catch for the day—Free seafood at Red Lobster	6.75	1.81
(17) Save on spring travel with Northwest Airlines	6.55	1.60
(16) Valentines Nikon Sale – save 77% +1500 Miles	6.53	1.59
(05) Vivitar Digital Camera, Under $100!	5.93	1.70
(08) Clearance: Up to 85% offer + free shipping	5.88	1.44
(23) Save an Extra 20% on MGM DVDs!	5.45	1.48
(20) Printer Ink – Up To 80 Percent Off Retail	5.33	1.77
(27) 2 ways to rent a car for less	5.30	1.57

NOTE: Statements were ranked on a nine point scale from 1 = *least interesting* to 9 = *most interesting*.

Table 4 lists the ten least interesting statements in the sort 1. As is apparent, participants disliked statements about something they would never buy (statement 7, mean=2.83), they do

not need recently (statements 12, 22, and 6), or they had no idea what the statement is talking about (statements 10 and 9). All of these statements' mean scores are below 4.50. The least interesting statement participants ranked is statement 7, and its mean is only 2.83.

Table 4. Descriptive statistics of the sort one (Least characteristics)

Statements (Advertising subjects)	*Mean*	*Standard Deviation*
(12) Get recipe with the Electronic BARMASTER!	4.48	1.69
(22) Save $10 on Contact Lenses And Solution	4.45	1.72
(06) Fresh flowers from our growers to your valentine's door.	4.35	1.37
(10) Why Type When You Can Talk	4.23	1.33
(18) Dozen Roses Only $39.99 Plus a Free Box of Chocolates!	4.20	1.29
(14) Huge Markdowns on Women's Fashion! Save up to 93%	4.00	2.31
(13) 14 Day Free Trial - Streaming Real – Time Portfolio Tracker	3.85	1.79
(02) Sears Siding: Free estimate & save $500*	3.73	1.33
(09) (Your name) – For the Love of Deals	3.58	1.36
(07) The New OxyGenics Shower Head	2.83	1.45

NOTE: Statements were ranked on a nine point scale from 1 = *least interesting* to 9 = *most interesting*.

RQ2: What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients?

There were 15 advertising subject lines and 15 spam subject lines sorted in the sort two. Table 5 indicates the ten most like spam statements, and their means and standard deviations. Out of the 30 mixed statements, participants felt that e-mail with sexually language (statement 15, 1, 30, 9) were most like spam. Among these statements, the statement 15 (mean=7.50) was represented as the most strongly like spam. As shown in Table 5,

participants thought some subject lines with special characters (statement 27, mean=6.60), quick financial gains (statements 7, mean=6.98), and credit card offers (statement 3, mean=5.85) as spam messages, too.

Table 5. Descriptive statistics of the sort two (Most characteristics)

Statements (Advertising and spam subjects)	*Mean*	*Standard Deviation*
(15) Bizarre animal sex	7.50	1.30
(01) @@@ viagra online -	7.30	0.99
(30) Hot Shannon Elizabeth uncovered	7.13	1.62
(07) tricky 12345 – Want Prizes?	6.98	1.13
(27) ?Gain large Riches fifty %percent Greeting plus(?	6.60	1.46
(09) Free Adult DVDs Get up to 12 FREE Today	6.55	1.66
(24) Reduce Your Debt FAST	5.95	1.38
(22) (Your name), Lose up to 10 lbs in 30 days	5.90	1.63
(03) (Your name), Your FREE Card has ARRIVED	5.85	1.58
(14) $ Visa $	5.50	1.32

NOTE: Statements were ranked on a nine point scale from 1 = *most unlike spam* to 9 = *most like spam.*

There are ten statements which are the most unlike spam of the sort two in Table 6. Participants responded more positively to statements that free seafood offer (statement 2), digital products (statements 19, 29, and 26), or gift-like items (statements20, 25, and 13). These ten statements' mean scores are below 4.18, and the lowest mean is 3.20 (statement 2).

Table 6. Descriptive statistics of the sort two (Least characteristics)

Statements (Advertising and spam subjects)	*Mean*	*Standard Deviation*
(20) Fresh flowers from our growers to your valentine's door.	4.18	1.15
(25) The Freshest Coffee and a $50 Gift!	4.05	1.18
(19) Toshiba 3.2 MegaPixel with LCD On Sale!	4.00	1.77

Table 6. (Continued)

Statements (Advertising and spam subjects)	*Mean*	*Standard Deviation*
(29) New Norton SystemWorks 2003 Pro Best Price	4.00	1.80
(16) World's First hand-powered charger for cell phones	3.93	1.14
(21) 2 ways to rent a car for less	3.90	1.48
(23) Save 50% on Audio book Today	3.73	1.20
(26) Valentines Nikon Sale – save 77% + 1500 Miles	3.73	1.28
(13) Great Gift Ideas for Valentine's Day	3.50	1.50
(02) Catch of the day—Free seafood at Red Lobster	3.20	1.74

NOTE: Statements were ranked on a nine point scale from 1 = *most unlike spam* to 9 = *most like spam.*

RQ3: Do people have frustration when they receive spam e-mail? If so, with what intensity?

The ten most characteristic statements of the sort three are presented in Table 7. The group was asked to rank thirty daily frustration events, which includes three spam relevant statements:

(12) Got an indecent and offensive e-mail message

(13) Got an e-mail about products I'd never buy

(28) Some friends forwarded useless or chain e-mails

Clearly, participants' most characteristic statement reflected that they felt greatly frustration when they had to talk to rude people (statement 26, mean=6.43). The second highest frustration event (mean=6.25) was that they feel tired, but could not go to sleep (statement 23). A number of computer problems also were included in the top-ten list. More specifically, not only the computer jamming (statement 14, mean=5.85) caused participant's frustration, but also the Internet browser crashing (statement 14, mean=5.85), or that documents could not be recognized by computers (statement 9, mean=5.80).

Table 7. Descriptive statistics of the sort three (Most characteristics)

Statements (Frustration events)	*Mean*	*Std. Deviation*
(26) Have to talk to rude people	6.43	1.66
(23) When I am really tired, and I can't go to sleep	6.25	1.93
(22) I am in a hurry and there isn't any gas in my car	6.18	1.57
(08) Left my favorite stuff and I can't find it	5.95	1.57
(07) My computer jammed and I have to restart it	5.93	1.65
(14) Internet browser crashes when closing e-mail attachments	5.85	1.00
(03) Forgot something at home and have to go back to get it	5.83	1.55
(09) Try to open a doc, but computer can't recognize it	5.80	1.64
(11) A pop-up ad jammed & froze my browser	5.80	1.47
(24) Roommate always makes noise loudly	5.80	1.60

NOTE: Statements were ranked on a nine point scale from 1 = *lowest frustration* to 9 = *highest frustration.*

Tables 8 tells of the ten least characteristic daily frustration events. As to three spam relevant statements (statements 12. 13, 28), these participants did not feel a lot of frustration on them. In fact, two of the spam relevant statements (statements 28 and 13) are ranked low, and their mean scores are 4.53 and 3.92. On the other hand, missing the favorite TV program (statement27, mean=3.15) or the local weather forecast (statement 2, mean=2.50) caused the lowest frustration to participants.

Table 8. Descriptive statistics of the sort three (Least characteristics)

Statements (Frustration events)	*Mean*	*Standard Deviation*
(28) Some friends forwarded useless or chain e-mails	4.53	1.28
(06) Checked mailbox at home and found many junk mails	4.23	1.56
(29) Some friends' e-mail inboxes are full, so I get lots of return messages from their e-mail system	4.08	1.38
(01) Miss a phone call	4.00	1.28

Table 8. (Continued)

Statements (Frustration events)	*Mean*	*Standard Deviation*
(04) Fire alarm rang and got to run out of the building	3.98	1.61
(13) Got an e-mail about products I'd never buy	3.92	1.67
(21) When I got a wonderful gift idea for someone and somebody else already thought of it & bought it	3.88	1.73
(25) Phone calls in the morning	3.55	2.05
(27) Missed the favorite TV program, and have to wait one more week	3.15	1.70
(02) Missed the local weather forecast	2.50	1.54

NOTE: Statements were ranked on a nine point scale from 1 = *lowest frustration* to 9 = *highest frustration.*

To investigate how much different the thirty statements of frustration have to be to show significance, the pair-wised t-test analysis was applied. The result is revealed in Table 9, which shows that the differences between the most characteristic statement (statement 26, mean=6.43) and others are not significant until it compared to the 14th statement (statement 19, mean=5.58).

Table 9. Paired sample test of the sort three (The confidence interval of the difference is 95%)

	Paired Difference			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
Stat. 18 (12th) | Stat. 26 (1st)	-.675	2.303	.364	-1.854	39	.071
Stat. 15 (13th) | Stat. 26 (1st)	-.750	2.362	.373	-2.009	39	.052
Stat. 19 (14th) | Stat. 26 (1st)	-.850	2.282	.361	-2.356	39	.024
Stat. 20 (15th) | Stat. 26 (1st)	-1.050	2.837	.449	-2.341	39	.024

RQ4: Which groups are more upset about spam?

In Table 10, participants were distinguished by sex in the need for comparing their frustration toward spam. There were 22 female and 18 male participants. As indicated by their responses, the largest difference is the statement 16 (difference=1.55). The difference of statements 17 (difference=1.45) and 9 (difference=1.35) are slightly less than statement 16.

Table 10. Different frustration between female and male (Difference>0.50)

Rank		Statements	Female Mean	Male Mean	Difference
1	#16	Cell phone ringing in class, or movie theater	4.45	6.00	1.55
2	#17	Received a telemarketing call	4.55	6.00	1.45
3	#09	Try to open a document, but my computer can't recognize it	6.41	5.06	1.35
4	#19	Put something in safe place and forget where I put it	6.05	5.00	1.05
5	#08	Left my favorite stuff and when I went back, I can't find it	6.36	5.44	0.92
6	#01	Miss a phone call	4.32	3.61	0.71
7	#29	Some friends' e-mail inboxes are full, so I get lots of return messages from their e-mail systems	3.77	4.44	0.67
8	#05	Vending machine ate my money and I got nothing	5.45	6.11	0.66
9	#23	When I am really tired, and I can't go to sleep	6.55	5.89	0.66
10	#25	Phone calls in the morning	3.27	3.89	0.63
11	#17	Received a telemarketing call	6.00	5.44	0.56
12	#12	Received an e-mail message that I think was indecent and offensive	5.05	4.50	0.55

NOTE: The scores were constructed by averaging the scores assigned to the items by each of the sorters.

Table 11 indicates the different levels of frustration between the older (12 participants who are above 26 years old) and the younger group (28 participants who are below 25 years

old). In this table, the older group gave statement 17 a score 6.58 whereas the younger group scored it only 4.61, the difference is 1.97. The older group also placed emphases on the statements 16 (difference=16), and 20 (difference=1.49), which the younger group did not feel frustration on them so badly. About receiving spam-like messages (statement12, difference=0.9), the younger group seems to be more upset than the older group.

Table 11. Different frustration between two age groups (Difference>0.50)

Rank		Statements	Under 25 Mean	Above 26 Mean	Difference
1	#17	Received a telemarketing call	4.61	6.58	1.97
2	#16	Cell phone ringing in class, or movie theater	4.61	6.42	1.81
3	#20	When I am trying to call someone on the phone and they are on the Internet for hours and I only get a busy signal	4.93	6.42	1.49
4	#30	Missed the CyRide in the morning, and had to wait for the next one	4.96	3.58	1.38
5	#10	When I logged in e-mail newsletter, I forgot password and have to ask again	4.25	5.33	1.08
6	#27	Missed the favorite TV program this week, and have to wait one more week	2.86	3.83	0.97
7	#12	Received an e-mail message that I think was indecent and offensive	5.07	4.80	0.90
8	#08	Left my favorite stuff and when I went back, I can't find it	6.21	5.33	0.88
9	#24	Roommate always makes noise loudly	6.04	5.25	0.79
10	#22	I am in a hurry to get somewhere and there isn't any gas in my car	6.39	5.67	0.72
11	#18	People who aren't on time for appointments	5.96	5.25	0.71
12	#06	Checked the mailbox at home and found many junk mails	4.39	3.83	0.56
13	#25	Phone calls in the morning	3.39	3.92	0.53
14	#28	Some friends always forward useless and chain e-mails to me	4.68	4.17	0.51

NOTE: The scores were constructed by averaging the scores assigned to the items by each of the sorters.

Table 12 summarizes the differences between the faculty-staff (8 participants), and student (32 participants) group. On statement 17 (difference=1.97), two groups had the largest difference of frustration. Basically, the student group responded more negatively to statements 17, 16 (difference=1.81), 24 (difference=1.63), and 5 (difference=1.25) than faculty-staff did. In addition, the faculty-staff group showed lower frustration on receiving indecent and offensive e-mail messages (statement 12, difference=1.31) than the other group.

Table 12. Different frustration between two occupation groups (Difference>0.50)

Rank		Statements	Faculty & Staff Mean	Students Mean	Difference
1	#17	Received a telemarketing call	4.61	6.58	1.97
2	#16	Cell phone ringing in class, or movie theater	4.61	6.42	1.81
3	#24	Roommate always makes noise loudly	4.50	6.13	1.63
4	#10	When I logged in e-mail newsletter, I forgot password and have to ask again	5.75	4.28	1.47
5	#30	Missed the CyRide in the morning, and had to wait for the next one	3.38	4.84	1.46
6	#12	Received an e-mail message that I think was indecent and offensive	3.75	5.06	1.31
7	#05	Vending machine ate my money and I got nothing	4.75	6.00	1.25
8	#23	When I am really tired, and I can't go to sleep	5.25	6.50	1.25
9	#04	Fire alarm rang and we got to run out of the building in 15 minutes	3.00	4.22	1.22
10	#20	When I am trying to call someone on the phone and they are on the Internet for hours and I only get a busy signal	6.25	5.16	1.09
11	#22	I am in a hurry to get somewhere and there isn't any gas in my car	5.38	6.38	1.00
12	#27	Missed the favorite TV program this week, and have to wait one more week	3.75	3.00	0.75

Table 12. (Continued)

Rank		Statements	Faculty & Staff Mean	Students Mean	Difference
13	#15	Roommate's alarm clock goes off 5 times every morning	5.13	5.81	0.68
14	#03	Forgot something at home and have to go back to get it	5.38	5.94	0.56

NOTE: The scores were constructed by averaging the scores assigned to the items by each of the sorters.

Table 13 indicates that participants of Caucasian group and Asian group feel things in the different ways. 31 Caucasian participants responded more negatively to statements 3, 17, 28, 9, 18 and 16 and were more likely to be satisfied with statements 7, 4, 25, 2, and so forth. Two spam relevant events: statements 12 and 28 are also shown in Table 13. As the table reflects, the Caucasian felt more frustration on receiving forwarded e-mails from friends (statement 28, difference=0.96) whereas the Asian felt higher frustration on receiving indecent and offensive e-mails (statement 12, difference=0.83).

Table 13. Different frustration between two racial groups (Difference>0.50)

Rank		Statements	The Caucasian Mean	The Asian Mean	Difference
1	#03	Forgot something at home and have to go back to get it	6.16	4.67	1.49
2	#07	My computer jammed and I have to restart it	5.61	7.00	1.39
3	#04	Fire alarm rang and we got to run out of the building in 15 minutes	3.68	5.00	1.32
4	#25	Phone calls in the morning	3.26	4.56	1.30
5	#02	Miss the local weather forecast and need to wait more 10 minutes to get it	2.77	1.56	1.21
6	#17	Received a telemarketing call	5.45	4.33	1.12
7	#28	Some friends always forward useless or chain e-mails to me	4.74	3.78	0.96

Table 13. (Continued)

Rank		Statements	The Caucasian Mean	The Asian Mean	Difference
8	#20	When I am trying to call someone on the phone and they are on the Internet for hours and I only get a busy signal	5.16	6.11	0.95
9	#16	Cell phone ringing in class, or movie theater	5.35	4.44	0.91
10	#12	Received an e-mail message that I think was indecent and offensive	4.61	5.44	0.83
11	#24	Roommate always makes noise loudly	5.61	6.44	0.83
12	#09	Try to open a document, but my computer can't recognize it	5.97	5.22	0.75
13	#30	Missed the CyRide in the morning, and had to wait for the next one	4.39	5.11	0.72
14	#15	Roommate's alarm clock goes off 5 times every morning	5.55	6.11	0.56
15	#21	When I thought I had a wonderful gift idea for someone and somebody else already thought of it.... and bought it	4.00	4.44	0.56
16	#18	People who aren't on time for appointments	5.87	5.33	0.54

NOTE: The scores were constructed by averaging the scores assigned to the items by each of the sorters.

RQ5: How frustrating are spam messages as they are perceived by participants?

Table 14 shows the most characteristic statements of the sort four. Participants felt the highest frustration when they received statement 23 (mean=7.40), which is an obviously and typical pornographic e-mail subject line. Not only statement 23 caused frustration, but also statements 11 (mean=6.75), 9 (mean=6.63), and 16 (mean=6.45) made participants feel the higher frustration than any other kinds of spam subject lines. Statements with some special characters (statement 14 and 6), or question marks (statement 4, mean=5.40) are also in the top-ten list.

Table 14. Descriptive statistics of the sort four (Most characteristics)

Statements (Spam subjects)	*Mean*	*Std. Deviation*
(23) Bizarre animal sex	7.40	1.91
(11) Hot Celebs Baring It All!	6.75	1.72
(09) Fwd: My pics	6.63	2.05
(16) Hot Shannon Elizabeth uncovered	6.45	1.54
(12) I know you'll like this	6.10	1.52
(13) You're in Serious Trouble – It's a Proven Fact	6.00	1.81
(14) @@@ viagra online -	5.90	1.57
(06) You Can Receive Cash Grants-Free qjpfez	5.70	1.07
(20) (Your name), Do you want $82,000 in less than 2 months?	5.50	2.13
(04) ?Gain large Riches fifty %percent Greeting plus(?	5.40	1.53

NOTE: Statements were ranked on a nine point scale from 1 = *least frustration* to 9 = *most frustration.*

The statements represents in the Table 15 means the least characteristic ones of the sort four. Participants ranked statement 27 (mean=3.00) as the least among thirty statements. In the meantime, providing free stuff, such as statements 21 (mean=3.23) and 1 (mean=3.18) did not frustrate participants as bad as those credit card offers, like statements 5 (mean=4.55) and 7 (4.38).

Table 15. Descriptive statistics of the sort four (Least characteristics)

Statements (Spam subjects)	*Mean*	*Std. Deviation*
(05) Is your Credit Score keeping your dreams on hold?	4.55	1.43
(03) (Your name)—Register to WIN this vacation!	3.93	1.72
(18) Where should we ship your new phone?	4.50	1.30
(08) (Your name), Lose up to 10 lbs in 30 days	4.48	1.47
(07) You* Quality for a Platinum Card	4.38	1.37
(02) Start Looking Better Today	3.93	1.72
(29) ADV: Compare Auto Insurance Rates: SAVE TODAY!	3.68	1.67

Table 13. (Continued)

Statements (Spam subjects)	*Mean*	*Std. Deviation*
(21) Free Computer Training	3.23	1.51
(01) Free college scholarship money	3.18	1.78
(27) Earn Cash For Completing Movie Surveys	3.00	1.96

NOTE: Statements were ranked on a nine point scale from 1 = *least frustration* to 9 = *most frustration.*

Discussion

RQ1: What is spam and what is direct e-mail advertising? More specifically, what kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising?

According to the results mentioned above, it seems that participants were not interested about all kinds of promotional information or discounts messages. What they were interested in depends on their personal needs at present. Such findings showed up that high prices, (i.e. airline tickets and digital cameras), well-known brand products (i.e. Red Lobster, and Nikon) could intrigue most participants. In the meantime, the group of participants might be categorized as a high-tech, and travel group. They were willing to open and read some e-mail messages which are relevant to these kinds of products. In fact, some participants viewed all of the statements in Table 3 as spam, except for a few products they are interested in.

All participants are mindful of their own needs, no matter when they did the sorting or dealt with e-mails in their daily life. E-mail messages with famous brand names usually are easier for them to recognize and open. Otherwise, subject lines are supposed to be benefit-oriented. Tell recipients what kinds of advantages they could have from e-mail messages directly instead of making them guess or trying to surprise them.

RQ2: What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients?

Most of the participants represented that they would just delete more than half of statements in Table 5 without opening and reading. Some participants reported that they would never open items between pile three and pile nine, where the most like spam item was placed.

The results also pointed out that pornographic language, such as "sex," "Hot," or "Adult," was the most recognizable characteristic of spam. Further, multiple question marks or other strange characters in the subject line made participants think those e-mail messages were also spam. A few participants believed that e-mail messages with these subject lines were useless, and deleted right away. Another finding was that using the personal mark in the subject line did not help to avoid being the spam. When recipients go through e-mail subject lines quickly, the personal remark may catch recipients' attentions for a while. However, after recipients continued to read the promotional information followed by their names, they would figure out what this message means. On the other hand, participants represented more positively to subject lines with capital letters, free item or credit card offers.

However, the statement that participants highly disagreed with in Table 5 did not mean they were interested in very much. For example, they rank statement 13 as the second unlike spam in the sort 2, but they ranked it as the 16^{th} interesting item in the sort 1.

RQ3: Do people have frustration when they receive spam e-mail? If so, with what intensity?

There is no doubt that participants indeed felt frustration when they received spam messages in their daily life. But one of the interesting findings is that people always complain

about receiving spam, but the frustration degree of it is less than a computer jammed, or getting a telemarketing call. Probably it is because of the frequency. Participants could have gotten spam many times a day, but their computers have not had problems so frequently.

The second possible answer to this finding is that e-mail is not entirely like the telemarketing call, which consumers have to communicate with unknown salesmen in person. People can handle these spam messages in private without the need to talk to someone they are not interested. Receiving a spam message is not similar to a computer jamming, either. When a computer jammes the person may lose a document that they had made but not saved yet, or be forced to break off what they were doing. E-mail is an asynchronous communication so that users can decide and control what time they want to put those spam into the trash box. Comparing to other daily events, the ability of control seems to be a reason for the lower level of frustration brought by receiving spam.

Among three spam relevant events, participants were not frustrated much when they got an e-mail about products they would never buy. Furthermore, they experienced more frustration from indecent and offensive e-mail messages than chain or useless e-mail, which were forwarded by friends.

RQ4: Which groups are more upset about spam?

Based on the results of the sort 3, participants with differing demographic backgrounds showed different levels of frustration. As previously shown in Table 10, female and male had a slight difference of frustration on receiving spam (statement 12, difference=0.55). This finding indicated that female was frustrated slightly more from receiving indecent and offensive e-mails than male was. Forty participants also revealed that there were differences between older and younger groups on receiving indecent e-mails, and those forwarded chain

e-mails from friends. It seems that the younger group experienced higher frustration on receiving spam e-mail messages than the older one.

According to participants' most/least characteristic statements, the student group was frustrated more than those who are faculty or staff in the Greenlee School. If comparing between the racial groups in Table 13, it is hard to say which group was more frustrated. The reason is that the Caucasian group felt higher frustration on receiving friends' forwarded useless e-mails, but they felt less frustration on receiving indecent and offensive e-mails than the Asian group. Besides, the differences of these two statements (statement 28, difference=0.96; statement 12, difference=0.83) are very close, too.

For the result, those that are female, younger, and student participants in this study are more upset about spam messages. However, there was only a slight distinction between the groups.

RQ5: How frustrating are spam messages as they are perceived by participants?

According to Table 14 and 15, participants responded that pornographic e-mail subject lines made them feel extremely frustrated. Even if a subject line, such as "I know you'll like this," only with a hint of sexual content could cause participants to be uncomfortable. On the other hand, a threatening subject line (i.e. You're in Serious Trouble) also made participants feel not well. The same observation could be applied to a subject line that makes recipients think the mail is from a friend (i.e. Fwd: My pics).

From most participants' perspectives, those subject lines with free items offers (i.e. Free Computer Training, or Free college scholarship money) made them experience little frustration. Besides, participants did not react very negatively about the subject line with the advertisement label (i.e. "ADV") .

CHAPTER 5. CONCLUSIONS

In the context of the research in this thesis, Q-method was proposed as a tool for measuring how people feel about various kinds of e-mail subject lines. During the Q-sort construction, some participants reported that they thought the task is interesting and shared their experiences about dealing with the spam e-mail messages.

Findings from the research are insightful about people's perceptions e-mail subject lines from personal perspectives. The research provides an interesting insight into the attitudes of participants toward differing what kind of e-mail message they want to read. Before deleting an e-mail, people have their own judgments of what message is nothing but junk, and what is useful and acceptable. Dealing with an e-mail message is like a personal and subjective process. After all, one person's spam could be another's "ham" (Rennie, 2003).

Since e-mail has become a useful and interactive tool for marketing on-line, the Internet marketers should carefully plan and promote their products or services in an appropriate way rather than sending a grand number of spam messages to thousands people. Targeting a potential high quality segment of audiences is important and necessary. In the commercial prospecting, the physical impact of the e-mail must be higher to compete for the decision maker's attention. Subject line is the vital element to create about the contents of e-mail before it is opened. Hence, marketers should use the limited space of the subject line well to let recipients know some important cues, such as what is the brand name, and how much discount the recipient could have. They need to avoid writing the subject line in an ambiguous or threatening way, because recipients do not like to guess or be threatened.

Secondly, the findings contribute to how people perceive the spam. As has been pointed out, everyone agreed that receiving spam becomes one resource of the frustration in the daily life, and believed it is a very serious problem. But the truth is that although spam indeed caused frustration, its level was much lower than some other daily situations people run into. It seems like people have gotten used to receiving spam e-mail messages, and viewed it as a part of life, so they did not rank it high. Over all, people believe that spam e-mail messages do not influence their life too negatively.

Based on the results obtained in this study, the levels of frustration between different demographic groups are not so obvious. If focusing on spam subject lines, the resource of the frustration is mostly from pornographic e-mail message. Personalized e-mail, such as recipient's name was included in the subject line, could not guarantee that recipients would be tricked and open e-mail right away. Recipients have learned to scan through the subject lines quickly, and they have known that seeing their names on the subject lines did not mean these messages are from some people they are familiar. The name is not the key measurement to decide an e-mail is whether or not a spam message. In fact, information after the name matters.

Limitations and Suggestions to the Future Study

The Q-sort process can be a long and tedious one when dealing with greater numbers of cards. In this study, participants spent about 25 to 30 minutes to rank 120 descriptor cards. The researcher observed that some participants ranked the last set faster than they ranked the previous sets. The sorting is time-consuming for participants, and they can become frustrated and want to finish the sorting as soon as possible. Future researchers may think about making

a comfortable environment for participants to do sorting, or allow them finishing the sorting in two days. On the other hand, participants might want to show that they are normal in front of the researcher so they would hide their inner thoughts on some statements. For example, some participants probably were interested in or curious about pornographic spam subject lines, but they still sorted them as the most frustration subject lines. As such, future researchers who also apply the Q-sort could try to set a private space for participants to do sorting, or let participants record the scores by themselves.

The second limitation is that everyone does not have the same chance to experience all statements of frustration events listed in Table 3. For example, faculty and staff do not have a roommate now, so they would not encounter a situation such as "Roommate's clock goes off 5 times per morning" (statement 15 of sort 3), and they have to try to imagine what it feels like and then rank statements based on their imagination. Another suggestion is that since people work or study in the university are different from people from other walks of life, future study could be done to find additional types of participants.

Since this study put emphasis on e-mail subject lines, researchers in the future may examine other elements of an e-mail message. For example, they could investigate the sender lines and see if there is any difference or how differently people will react to different kind of senders. Sometimes recipients get e-mail messages, which look like they send to themselves because their names were shown as the sender. However, it is another trick that spammers use to make recipients open e-mail messages.

APPENDIX A. Q-SAMPLES

Table 1. Q-sample one (Advertising e-mail subject lines)

1	Save 50% on Audio book Today
2	Sears Siding: Free estimate & save $500*
3	World's First hand-powered charger for cell phones
4	New Norton SystemWorks 2003 Pro Best Price
5	Vivitar Digital Camera After Christmas Sale, Under $100!
6	Fresh flowers from our growers to your valentine's door.
7	The New OxyGenics Shower Head
8	Polartec Clearance: Up to 85% offer retail plus free shipping
9	(Your name) – For the Love of Deals
10	Why Type When You Can Talk
11	Catch of the day—Free seafood at Red Lobster
12	Get any drink recipe in seconds with the Electronic BARMASTER!
13	14 Day Free Trial - Streaming Real – Time Portfolio Tracker
14	Huge Markdowns on Women's Fashion! Save up to 93%
15	At Starbucks? get it, just the way you like it!
16	Valentines Nikon Sale – save 77% + 1500 Miles
17	Save on spring travel with Northwest Airlines
18	Dozen Roses Only $39.99 Plus a Free Box of Chocolates!
19	New car for $500 – Valentine's special
20	Printer Ink – Up To 80 Percent Off Retail
21	CheapTrips Airfares – Best Price Guraranted
22	Save $10 on Contact Lenses And Solution
23	Save an Extra 20% on MGM DVDs!
24	Hot New Music Videos and Photos!
25	Great Gift Ideas for Valentine's Day
26	Low Fare Alert: Deals from Des Moines, IA

Table 1 (Continued)

27	2 ways to rent a car for less
28	The Freshest Coffee and a $50 Gift!
29	The Big Home Event @ Overstock.com
30	Toshiba 3.2 MegaPixel with LCD On Sale!

Table 2. Q-sample two (Advertising and spam e-mail subject lines)

1	@@@ viagra online -
2	Catch of the day—Free seafood at Red Lobster
3	(Your name), Your FREE Card has ARRIVED
4	The Big Home Event @ Overstock.com
5	New car for $500 – Valentine's special
6	Save $10 on Contact Lenses And Solution
7	tricky 12345 – Want Prizes?
8	Sears Siding: Free estimate & save $500*
9	Free Adult DVDs Get up to 12 FREE Today
10	Printer Ink – Up To 80 Percent Off Retail
11	You* Quality for a Platinum Card
12	Free Computer Training
13	Great Gift Ideas for Valentine's Day
14	$ Visa $
15	Bizarre animal sex
16	World's First hand-powered charger for cell phones
17	Free college scholarship money
18	Where should we ship your new phone?
19	Toshiba 3.2 MegaPixel with LCD On Sale!
20	Fresh flowers from our growers to your valentine's door.
21	2 ways to rent a car for le
22	(Your name), Lose up to 10 lbs in 30 days
23	Save 50% on Audio book Today
24	Reduce Your Debt FAST

Table 2 (Continued)

25	The Freshest Coffee and a $50 Gift!
26	Valentines Nikon Sale – save 77% + 1500 Miles
27	?Gain large Riches fifty %percent Greeting plus(?
28	ADV: Compare Auto Insurance Rates: SAVE TODAY!
29	New Norton SystemWorks 2003 Pro Best Price
30	Hot Shannon Elizabeth uncovered

Table 3. Q-sample three (Daily frustration events)

1	Miss a phone call
2	Miss the local weather forecast and need to wait more 10 minutes to get it
3	Forgot something at home and have to go back to get it
4	Fire alarm rang and we got to run out of the building in 15 minutes
5	Vending machine ate my money and I got nothing
6	Checked the mailbox at home and found many junk mails
7	My computer jammed and I have to restart it
8	Left my favorite stuff and when I went back, I can't find it
9	Try to open a document, but my computer can't recognize it
10	When I logged in e-mail newsletter, I forgot password and have to ask again
11	A pop-up advertising jammed and caused my browser to freeze
12	Received an e-mail message that I think was indecent and offensive
13	Received an e-mail message about products I would never buy
14	Internet browser crashes when closing e-mail attachments
15	Roommate's alarm clock goes off 5 times every morning
16	Cell phone ringing in class, or movie theater
17	Received a telemarketing call
18	People who aren't on time for appointments
19	Put something in safe place and forget where I put it
20	When I am trying to call someone on the phone and they are on the Internet for hours and I only get a busy signal

Table 3 (Continued)

21	When I thought I had a wonderful gift idea for someone and somebody else already thought of it.... and bought it
22	I am in a hurry to get somewhere and there isn't any gas in my car
23	When I am really tired, and I can't go to sleep
24	Roommate always makes noise loudly
25	Phone calls in the morning
26	Have to talk to rude people
27	Missed the favorite TV program this week, and have to wait one more week
28	Some friends always forward useless or chain e-mails to me
29	Some friends' e-mail inboxes are full, so I get lots of return messages from their e-mail systems
30	Missed the CyRide in the morning, and had to wait for the next one

Table 4. Q-sample four (Spam e-mail subject lines)

1	Free college scholarship money
2	Start Looking Better Today
3	(Your name)—Register to WIN this vacation!
4	?Gain large Riches fifty %percent Greeting plus(?
5	Is your Credit Score keeping your dreams on hold?
6	You Can Receive Cash Grants-Free qjpfez
7	You* Quality for a Platinum Card
8	(Your name), Lose up to 10 lbs in 30 days
9	Fwd: My pics
10	$ Visa $
11	Hot Celebs Baring It All!
12	I know you'll like this
13	You're in Serious Trouble – It's a Proven Fact
14	@@@ viagra online -
15	Free Adult DVDs Get up to 12 FREE Today

Table 4 (Continued)

16	Hot Shannon Elizabeth uncovered
17	(Your name), your $5000 credit line was approved
18	Where should we ship your new phone?
19	Reduce Your Debt FAST
20	(Your name), Do you want $82,000 in less than 2 months?
21	Free Computer Training
22	-save thousands-
23	Bizarre animal sex
24	tricky 12345 – Want Prizes?
25	RE: Re-establish Your Credit
26	Urgent Lost Money Notification
27	Earn Cash For Completing Movie Surveys

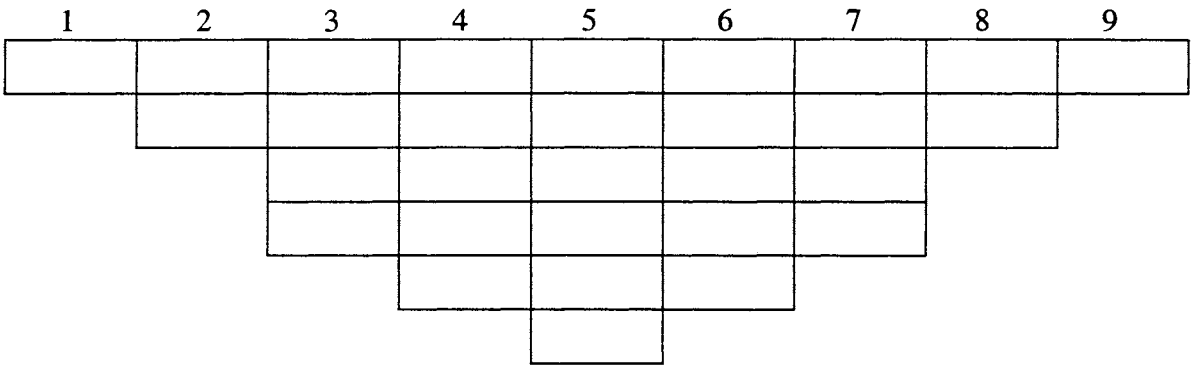
APPENDIX B. SCORE AND ANSWER SHEET

I. Distribution & Score

RQ1: What kinds of e-mail subjects are more recognizable and useful to consumers as direct e-mail advertising?

Least interesting — Most interesting

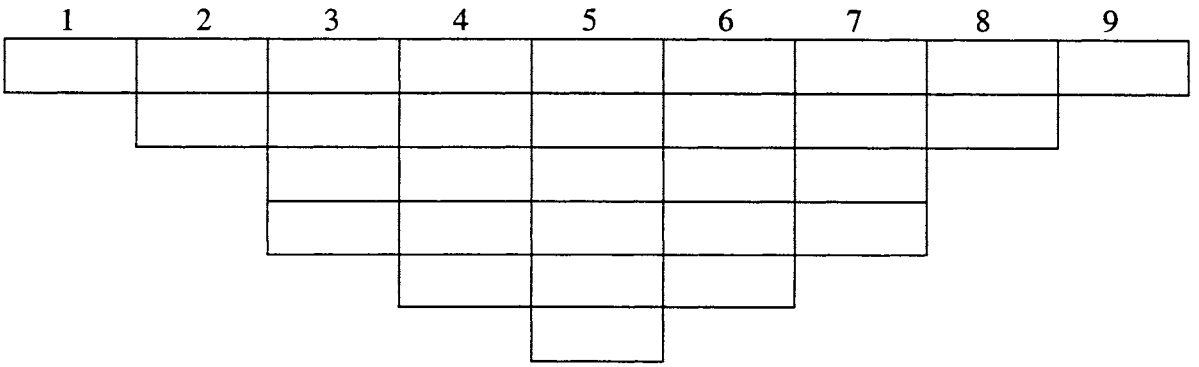
1 2 3 4 5 6 7 8 9



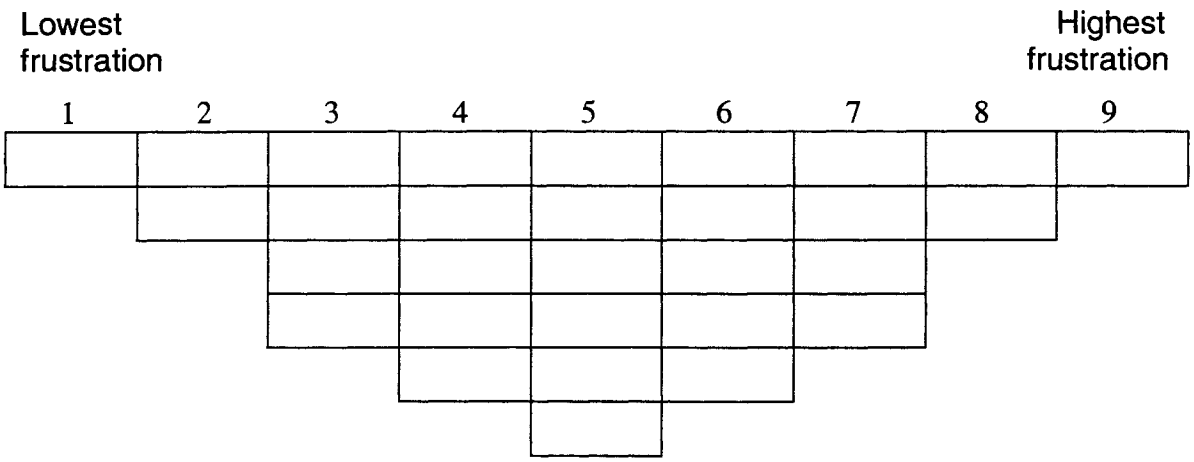
RQ2: What kinds of spam subjects are more recognizable as undesirable and to be avoided by recipients?

Most unlike spam — Most like spam

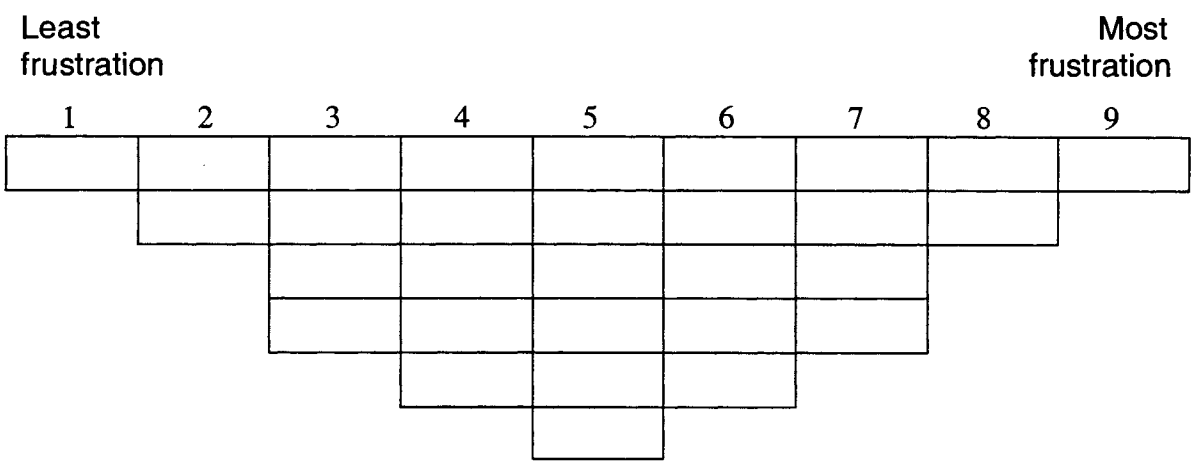
1 2 3 4 5 6 7 8 9



RQ3: Do people have frustration when they receive spam e-mail? If so, with what intensity?



RQ5: How frustrating are spam messages as they are perceived by participants?



II. Internet & E-mail Use

Please check the appropriate square.

1. How many hours per week do you spend on the Internet?

☐ Less than an hour ☐ 1-5 hours ☐ 6-10 hours
☐ 11-15 hours ☐ 16-20 hours ☐ More than 20 hours

2. How many years have you used e-mail?

☐ Less than a year ☐ 1-3 years ☐ 4-6 years ☐ 7-9 years
☐ More than 10 years

3. How many e-mails do you receive per day?

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20
☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40 ☐ More than 40

4. What function of the Internet do you use mostly? (Check ONLY ONE)

☐ FTP ☐ E-mail ☐ World Wide Web ☐ Chat ☐ News ☐ Telnet
☐ Instant messenger (e.g. ICQ, MSN messenger) ☐ Download
☐ Streaming audio over the Internet (Real Audio, etc.) ☐ Internet phone
☐ Streaming video over the Internet ☐ Internet fax
☐ Video conferencing over the Internet (NetMeeting, etc.) ☐ Others

5. What function of the Internet do you use secondly? (Check ONLY ONE)

☐ FTP ☐ E-mail ☐ World Wide Web ☐ Chat ☐ News ☐ Telnet
☐ Instant messenger (e.g. ICQ, MSN messenger) ☐ Download
☐ Streaming audio over the Internet (Real Audio, etc.) ☐ Internet phone
☐ Streaming video over the Internet ☐ Internet fax
☐ Video conferencing over the Internet (NetMeeting, etc.) ☐ Others

6. How many e-mail accounts do you have?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ More than 6

7. Do you subscribe any e-mail newsletter?

☐ Yes ☐ No **(If you answer No, please go to Part III)**

8. If so, how many e-mail newsletters do you subscribe to?

☐ 0 ☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ 10-12

☐ 13-15 ☐ 16-18 ☐ 19-21 ☐ More than 22

9. What kind of e-mail newsletters do you subscribe to?

☐ News ☐ Technology information ☐ Entertainment ☐ Financial/Business

☐ Health/Medical ☐ Art/Cultural ☐ Sports ☐ Reading

☐ Shopping information ☐ Others

III. Demographics

10. Your age range is:

☐ Below 20 ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40

☐ 41-45 ☐ 46-50 ☐ 51-55 ☐ Over 56

11. Your gender is:

☐ Female ☐ Male

12. Your racial group is:

☐ African American ☐ Asian American ☐ Caucasian

☐ Native American ☐ Hispanic ☐ Others

13. Your education background is:

☐ Less than high school ☐ Some high school ☐ High school graduate

☐ Some college ☐ College graduate ☐ Graduate work

14. Your family income is:

☐ Under $20,000 ☐ $20,001 to $30,000 ☐ $30,001 to 40,000

☐ $40,001 to $50,000 ☐ $50,001 to $60,000 ☐ $60,001 to 70,000

☐ $70,001 to $80,000 ☐ $80,001 and above

15. Your marital status is:

☐ Married ☐ Single

☐ Divorced ☐ Widowed

16. Your occupation is:

☐ Faculty ☐ Staff ☐ Student

Thank you very much for your participation!

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