

THESIS

THE CONTINUED ADOPTION OF TELECOMMUTING BY
TECHNICAL WRITERS:
EVALUATING THE IMPACT OF ECONOMIC RECESSION AND
THE EVENTS OF SEPTEMBER 11, 2001

Submitted by
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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY BRUCE THOMAS HALLMARK ENTITLED THE CONTINUED ADOPTION OF TELECOMMUTING BY TECHNICAL WRITERS: EVALUATING THE IMPACT OF ECONOMIC RECESSION AND THE EVENTS OF SEPTEMBER 11, 2001 BE ACCEPTED AS FULFILLING, IN PART, REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

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Abstract

This study gathered information, through in-depth interviews with eight technical writers, about the perceived attributes of telecommuting. Rogers' diffusion of innovation theory provided a model for understanding the process by which innovations (e.g., technologies, ideas, and practices—such as telecommuting) are adopted or rejected. Participants were asked 34 questions about the five perceived attributes of innovations (relative advantage, compatibility, complexity, trialability, and observability) as they related to telecommuting. The effects of the U.S. economic recession, which began in 2001 and hit the high-technology industry especially hard, and the terrorist attacks of September 11, 2001, were also looked at as factors that could influence the continued adoption of telecommuting.

Based on the results of the interviews, participants reported all relative advantages (e.g., more time with family, flexible work schedule) and disadvantages (e.g., social isolation, over working) identified in the literature review, in addition to network connectivity problems, which seven participants routinely encountered when working off-site. Telecommuting was reported by participants to be widely compatible with the cultures of their companies, it addressed many personal needs of participants (e.g., higher productivity, personal flexibility), and participants said their work was valued equally with that of their coworkers. Participants reported that the complexity of telecommuting was low, the trialability was high, and observability was enhanced by participants who occasionally switched the days they telecommuted, maintained good communication with coworkers and supervisors, and who produced quality work products.

The desirability of telecommuting was not affected by economic factors, and the majority of participants were not concerned about workplace terrorism in the United States. When deciding whether to continue telecommuting, participants indicated that neither the economy nor reactions to September 11, 2001, were factors used by them or their employers.

Participants unanimously believed that telecommuting had substantially more benefits than working full time in their primary offices, and they saw it as a viable way to balance the demands of their personal and professional lives. Access to the same range of work options enjoyed by regular employees was reported by the two contract or temporary workers in the study. But regardless of employment status, formal agreements or work contracts did not govern most telecommuting arrangements, which is an oversight that could easily leave both parties vulnerable to a host of problems. This informal approach potentially relegates telecommuting to the status of a work style rather than a legitimate business strategy. Recommendations for further study are included.

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Acknowledgements

This has been a long process. It started when I began my second semester of graduate school in the spring of 1997. In one form or another, “thesis” has been a constant in my life for much longer than I ever thought possible or imagined it could be. It represents more than the researching and writing of one proposal, or two, but rather three, and just as many committee chairs.

In the past seven years, a lot has changed in my life: I bought a house, got married, built and moved into a new home, and became the father of two wonderful boys. Other than having children, the event that changed my life the most was my mother’s death in January 2000. She, along with my father, obtained Master’s degrees from the University of Illinois at Champagne-Urbana in the late 1950s. She conducted some of the first cooking experiments with microwave ovens, and unlike my father, wrote a thesis as part of her requirements. She knew from experience that this could be a trying ordeal, and more than a year before her death she told me, “Don’t let them frustrate you and stop you from getting the degree you went there to get.” Her words became a guidepost, an instruction, and a promise that I needed to fulfill for both of us. I finally did.

I believe that very few of us accomplish big tasks without the love, support, and assistance of others. I couldn’t have done this without the following people. I want to express my sincere appreciation to:

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After seven long years of having this project be a part of my life, I'm happy to finally finish it, to shed this burden, and move on. For a long time, the password on my home computer has been "thesis." Now I can change it to something that doesn't prod me with the looming threat of failure and doesn't represent unfinished business.

I want a new word; something liberating and joyful, like "freedom."

Bruce Thomas Hallmark, Summer 2004

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I. Introduction

Alvin Toffler (1970), a sociologist and author, said “the single most anti-productive thing we do is to ship millions of workers back and forth across the landscape” (p. 68). In response to this and other economic realities, businesses around the world have increasingly embraced telecommuting in the past 25 years. Advances in technology have made telecommuting a popular option for employees, especially during the past 10 years (Beasley & Lomo-David, 2000; U.S. Dept. of Commerce, 2002). To better accommodate working at home, some homebuilders have begun offering expanded home offices and computer network wiring through out their houses (Gordon, 2002). These trends may be gaining momentum as the United States contends with its first economic recession in a decade, and as Americans search for answers and alternatives in the aftermath of the terrorist attacks on September 11, 2001, in New York City and Washington, D.C.

Following September 11, hundreds of businesses with offices in the World Trade Centers were forced to set up remote worksites just to stay in business (Hulme, 2001). Many companies with large offices in high rise buildings in major U.S. cities have assessed their exposure to possible terrorist attacks and developed business-continuity plans (Hulme, 2001), while others attempt to comfort anxious employees, some of whom have had panic attacks when entering tall buildings (Kistner, 2001). Although economic recessions are not new, America after September 11 clearly is. The social, political, and

cultural impact of these two events could reshape the future of business in the United States.

The economic boom of the 1990s was largely the result of tremendous growth in the technology sector of the market (U.S. Dept. of Commerce, 2002). In what is widely referred to as the “new economy” or the “Internet economy,” information itself is typically the commodity, and businesses are increasingly challenged to develop strategies that define clear paths to profitability and longevity among shifting business models and new competition (Tedeschi, 2000). Technological advances and a tight labor market have compelled companies to offer telecommuting as an incentive to skilled employees who want more flexible schedules and time with their families (Spillman & Markham, 1997; Flack, 1999). Consequently, the number of employees telecommuting has been steadily increasing during the past 10 years (Beasley & Lomo-David, 2000; U.S. Dept. of Commerce, 2002). In the United States alone, an estimated 21 million people telecommuted in 2001, and by 2005, that number is expected to climb to 35 million (Cahners In-Stat Group, 2001).

Although ample evidence suggests that the benefits of telecommuting outweigh the costs, the actual practice of telecommuting has grown more slowly than some predictions estimated that it would (Ellison, 2000; Clark, 1998; Gray & Pontell, 1996). The combined effects of the economic recession and the events of September 11 could slow the rate of adoption even further or, conversely, dramatically increase it. The impact on telecommuting, especially for technical writers, is unknown.

This study focuses on technical writers in Northern Colorado who telecommute and seeks to answer two fundamental questions: Is telecommuting continuing to be adopted by technical writers in the wake of the recent economic recession that hit the

high-technology industry especially hard? And, is telecommuting continuing to be adopted by technical writers in a post-September 11 environment awash with new fears and concerns about workplace safety? Rogers' diffusion of innovation theory provides a relevant context within which to study the factors that influence the adoption and continued use of innovations such as telecommuting.

II. Literature Review

The body of literature on telecommuting is growing and spans a number of subject areas including technology in the workplace and home, organizational management, and social science (specifically, changes in the structure of both society and the American family). This broad range of subjects has produced a diverse array of telecommuting literature that runs the gamut from scholarly research to how to set up a home office (Ellison, 2000). To adequately begin the process of framing and clarifying the issues, a few terms first need to be defined.

Term Definitions

Markel (1996) defines *technical communicators* as people who “write documents, including manuals, proposals, reports, sales literature, letters, journals, articles, and speeches (p. 2).” He goes on to say that “many technical communicators still call themselves *technical writers* (or *tech writers*), even though the term *technical communicator* more accurately reflects the increasing importance of graphics and the use of other media, such as on-line documentation (p. 2).” Admittedly, the term *technical communicator* is more accurate, but in this study, I use the term *technical writer* because it is still more widely accepted.

Jack Nilles (widely considered the father of telecommuting), coined the term *telecommute* to describe the use of telecommuting technology to replace commuting to

and from a central office (Nilles, Carlson, Gray & Hanneman, 1976). The impetus for his research was the oil embargo and subsequent gasoline shortage in the U.S. in the mid-1970s. A similar term, *telework*, originated in Europe (Johnson, 1997), and is often used interchangeably in the literature. Other terms cited in the literature to describe telecommuting include remote working, flexible working, home-based working and virtual office arrangement (Ellison, 2000; Clark & Olfman, 1999, Gray & Pontell, 1996; Hobbs & Armstrong, 1998). In this study, the term *telecommute* (with suffixes “ing” and “ed”) is used because the term is familiar to Americans and this study is being conducted in the United States.

Any discussion of telecommuting that indiscriminately uses the term *office* will quickly disintegrate into confusion. For the purposes of this study, the company office is referred to as the *primary office*, and the location from which the employee telecommutes is referred to as the *remote worksite*. One can argue that if a telecommuter spends a majority of his or her workday at home, that location is the primary office. However, not all telecommuters spend a majority of their workweek at a remote worksite, and insofar as employees rely on communication with the primary office to perform their jobs, the company office is the primary office.

Telecommuting can be defined many ways largely because what constitutes telecommuting varies widely. Most definitions state or imply that office work brought home and completed after hours (often referred to as *spillover*) does not qualify as telecommuting, even if telecommunication technology is involved. Gray, Hodson, and Gordon (1995) define telecommuting as “a flexible way of working which covers a wide range of work activities, all of which entail working remotely from an employer, or from a traditional place of work, for a significant proportion of work time . . . and always

involves using telecommunications to keep the remote employer and employee in contact with each other” (p. 2). Johnson (1997) defines telecommuting as a work arrangement in which “workers who do not spend all their time at home, but have some physical access, one, two or three days a week to the organization” (p. 4). Mokhtarian and Soloman (1994) define telecommuting as “using telecommunications technology to work at home . . . instead of commuting to a conventional work place at the conventional time” (p. 749). Ellis and Webster (1999) define it as “the practice of working at some remote location via the use of telecommunications equipment and a personal computer” (p. 92).

The aforementioned definitions of telecommuting have some degree of merit, though the following definition provides the most useful parameters for framing this ubiquitous work option. Beasley and Lomo-David (2000) define telecommuting as “a work arrangement in which an employee [either full or part time] performs at least some of his or her computing responsibilities at home or some other location other than his or her regular office” (p. 113). This definition collectively identifies the essential elements of telecommuting; however, in my study, I have broadened this definition slightly to include contractors or temporary workers. Contract workers are a common and growing segment of today’s work force (Bureau of Labor Statistics, 1999), and, other than receiving their paychecks from a different source, many are extended the same work options as full- and part-time employees such as participation in telecommuting programs (Melchionno, 1999).

The type of work performed often determines whether an individual can telecommute. Jobs that have a high level of *telecommutability* include technical writers, web developers, medical transcriptionists, software programmers, and auditors (Corbitt, 2001; Mariani, 2000; Woody, 1997; Griffith, 1995). Beyond the job types that lend

themselves to telecommuting, research suggests that individuals who telecommute need various personality traits and work habits to be successful. Some of these characteristics include self-discipline, the ability to work independently and cope with social isolation, time management skills, trustworthiness, good communication skills, and computer skills (Swink, 2001; Hobbs & Armstrong, 1998; Griffith, 1995).

The Technologies Required

This study addresses the factors influencing the diffusion of telecommuting. Telecommunication technologies have made telecommuting a reality for an increasing number of occupations including technical writers (Johnson, 1997). The technologies that make remote working possible influence adoption. Given the scope of communication technologies, however, it would be virtually impossible to describe all of these technologies or to outline the almost infinite configurations in which they can be connected to perform work remotely. The purpose here is to provide a simple overview of the most commonly used equipment.

At its most basic, telecommuting requires telecommunications equipment: a personal computer, telephone line, modem, and a software application that permits work to be performed and data to be transmitted electronically. Employees also stay connected to the primary office via telephone, e-mail and voice mail. Wireless and satellite technologies permit employees to use pagers and cell phones, and to connect to computer networks at the primary office and the Internet/World Wide Web.

The terms *Internet* and the *World Wide Web* (or *WWW*) are often used throughout the literature without clear definitions. The Internet is essentially a computer network (Gleeson, 1998). The WWW is a tool or technology that uses hypertext links (both

within and between documents) and hypermedia (graphics, sound, video, etc.) displayed via a browser to provide universal access to information stored on computers (Berners-Lee, 1991). The computer network and its interface have become integrated to such an extent that the technical distinction between them is increasingly unimportant. The two terms are often used interchangeably in articles, research papers, books, magazines, and the general public. However, I differentiate between these terms when necessary based on the definitions presented above.

Though not a technology, *telecenters* are satellite offices shared by more than one employer (Mariani, 2000). These offices permit employees to connect to their primary offices using a variety of telecommunications equipment, some of which individual employees may not otherwise have access to.

The telecommunication technologies that make remote work possible are constantly changing. In 1965, Gordon Moore, co-founder and former CEO of Intel, predicted that the power and complexity of integrated circuits [which determine the processing speed of computers] would double every eighteen months, and with each iteration, the cost of the circuits would be cut in half. This statement became known as Moore's Law and has proven to be fairly accurate (McCain & Jukes, 2001). This rapid rate of development is arguably as impressive as many of the technologies that make telecommuting possible.

Focusing on Employees

Telecommuting presents new challenges to the traditional work model of most companies, that is, employees traveling to a central location to perform their work each day of the workweek. Most innovations have both perceived and real advantages and

disadvantages for the members of a population or society (Rogers, 1995). In the case of telecommuting, the advantages and disadvantages are shared between employees and employers.

This study focuses on the diffusion of telecommuting among employees and their current perceptions of it. The decision to study these issues as they relate to employees rather than in the context of the employee/employer relationship is based on the fact that participation in most telecommuting arrangements is voluntary (Bernardino, 1996). Clearly, the need for employers to permit telecommuting is a prerequisite, but whether employees choose to participate and why is more predictive of the success of this work option. Although definitional and methodological issues make determining the actual number of telecommuters difficult (Ellison, 2000), the advantages and disadvantages reported by individuals who telecommute appear to transcend specific professions or occupational tasks. This is further evidence that the issues for telecommuters can be studied apart from their employers.

Advantages to Employees

Discussed below are the advantages most commonly reported by telecommuters. Most studies tend to view the advantages of telecommuting for employees as collectively increasing productivity and schedule flexibility, and reducing stress while being more environmentally friendly (Clark, 1998; Gray et al., 1995).

More Time with Family

Generally speaking, less time spent at the primary office and commuting to and from it gives employees more time with their families. According to a recent survey, a

majority of computing professionals telecommute so they can spend more time at home with their families and improve their work environments (Beasley & Lomo-David, 2000). A survey by the International Telework Association and Council (1999) indicated that 60 percent of telecommuters are between the ages of 30 and 49, which corresponds with the national trend toward older ages for marriage and childbearing (Hernandez, 2002). The importance of time with family is especially evident considering that many couples would turn down promotions to avoid creating additional work/family conflicts (Kugelmass, 1995).

Flexible Work Schedule

Research indicates that having the freedom to balance personal and professional life is crucial for high job satisfaction. Having a more flexible schedule permits telecommuters to integrate work with personal responsibilities such as childcare (Ellis & Webster, 1999; Kamath, 1999; Hobbs & Armstrong, 1998). The ability to work from home is an especially important factor for dual-career couples who need to balance professional and personal responsibilities (Carter, 1997). With both parents working, the commingling of family and work demands is unavoidable. Given the same workload as other employees, employees with more perceived job flexibility can better balance the demands of work and family (Hill, Hawkins, Ferris & Weitzman, 2001).

Control over Work Environment

Studies have shown that avoiding interruptions and other distractions that occur at most primary offices is an important factor for many telecommuters (Spillman & Markham, 1997). Beyond the ability to work undisturbed, “controlling” one’s

environment can take many forms from setting the temperature to a desired level to avoiding difficult coworkers (Beasley & Lomo-David, 2000). People who work at home also report substantial increases in productivity and work quality (Davis & Polonko, 2001; Cree, 1998; Gray et al, 1993), and employers are largely motivated to offer telecommuting programs to attract qualified employees and to increase individual productivity rather than to reduce costs (Bernardino, 1996). The opportunity for higher productivity by workers who telecommute is made possible by several factors including saved commute time, greater ability to manage the type and frequency of interruptions, and the freedom to concentrate on work during hours of higher energy and focus (such as early morning or late night) (Ellison, 2000).

Reduced Travel Time

According to Mariani (2000), most telecommuters in the United States work from home (as opposed to satellite offices). By doing so, they significantly reduce the amount of time they spend engaged in work-related travel. Even if telecommuters visit their primary office weekly or occasionally use a satellite office, their overall commute time is still reduced. Less driving reduces transportation costs, improves air quality, and helps to alleviate traffic congestion (U.S. Dept. of Commerce, 2002).

Increased Job Satisfaction

Telecommuting research indicates that high job satisfaction is a major reason for individuals to continue telecommuting, and the aforementioned advantages work synergistically to increase job satisfaction among telecommuters (Cree, 1998). According to Reese (2000), a recent survey indicated that employees who felt their

company supported their need to balance professional and personal responsibilities by offering alternative work arrangements (including telecommuting and flexible hours) reported being more satisfied with their jobs than did employees who did not feel supported. The survey also revealed that more men than women had, at some point in their careers, looked for another job because of difficulty balancing their work and family life. This latter finding shows that the need for work/family balance is not just an issue for women. Workers of both genders who spend more time telecommuting (as opposed to working in the primary office) report more perceived flexibility and more job satisfaction (Cree, 1998).

Disadvantages to Employees

Discussed below are the disadvantages most commonly reported by telecommuters. These disadvantages are generally believed to decrease productivity of employees and increase stress.

Social Isolation

According to Griffith (1995), “almost every telecommuter . . . describes social isolation as one of the most difficult parts of the job” (p.22). Other studies report that telecommuters who work at home can experience low self-esteem, feelings of alienation and lack of support, as well as being “out of the loop” with their coworkers (Hobbs & Armstrong, 1998; Spillman & Markham, 1997). Some research indicates that the effects of isolation are predominantly psychological and often have a negative impact on employees’ relationships with their family and spouse. And, working at home can be

especially difficult for people with compulsive disorders such as overeating or drinking (Gurstein, 2001).

Overworking

The inability for some telecommuters to impose a schedule on their workday can lead to a blurring of the distinction between their professional and personal lives.

According to Gurstein (2001), “career priorities tend to supercede personal ones, and [telecommuters] are more likely to overwork.” (p. 74). When the distinction between work and leisure time gets blurred, the result is often reduced job satisfaction (U.S. Dept. of Commerce, 2002). Many employees are periodically overworked, but even when it’s “crunch time” employees need to identify an end to their workday and work week. By not doing so, they subject themselves to being overworked.

Perceived Loss of Status

Because telecommuters do not work full time in the primary office, many feel “career-isolated” because of missed opportunities for interaction and growth, and that their remote work arrangement lacks a professional image (Gurstein, 2001). Reduced or lost promotional opportunities are, in fact, potential consequences of telecommuting (Johnson, 1997) and concerns about the loss of status extend outside the workplace to family and friends (Hobbs & Armstrong, 1998). Some studies report that telecommuters are often not recognized as “real workers” because their workday and workplace do not conform to that of traditional workers. As a result, workers can feel that they are perceived by employers, family, friends, and even neighbors as not really working (Gurstein, 2001).

III. Concepts and Variables

Diffusion of Innovation Theory

Rogers' diffusion of innovation theory offers a theoretical framework in which to understand the adoption of telecommuting by technical writers. This theory is comprised of many elements and sub-elements that outline the many factors involved in diffusion of innovations. As such, a brief overview of the main components of this theory is in order, accompanied by the necessary term definitions.

Diffusion theory provides a model for understanding the process by which innovations (technologies, ideas, practices, etc.) are adopted or rejected. According to Rogers, "diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995, p. 5).

Dissemination of a new idea can be planned or spontaneous. In either case, the diffusion process is not instantaneous, and not all members of a social system adopt innovations at the same time. Rather, an individual or group evaluates a new idea, and over time and through a series of actions, decides whether to adopt a new alternative to practices previously in existence. Rogers refers to this process as the *innovation-decision process*, which he defines as having five main stages or phases. An individual or group passes "1) from the first knowledge of an innovation, 2) to forming an attitude toward the innovation, 3) to a decision to adopt or reject [it], 4) to implementation of the new idea, and 5) to confirmation of this decision" (Rogers, 1995, p. 161).

Rogers defines an innovation as “an idea, practice, or object that is perceived as new by an individual or [group],” but he goes on to state that “it matters little . . . whether or not an idea is objectively new as measured by the lapse of time since its first use or discovery” because an individual or group may know about “an innovation for some time but [have] not yet developed a favorable or unfavorable attitude toward it, nor have adopted or rejected it” (p. 11). For example, telecommuting is not a new idea, but people’s attitudes about it likely change depending on a range of factors, including personal and business requirements. Furthermore, if an innovation is adopted, it can later be rejected. Rogers terms this discontinuance. A previously rejected innovation can also be readopted.

Diffusion research has tended to focus on the decision to adopt or reject innovations as independent from other innovations. In reality, many innovations are interdependent, and the experiences individuals or groups have with one innovation influence their view of the next (Rogers, 1995). The interrelatedness of innovations is clearly evident in telecommuting in which telephones, computers, modems, e-mail, and so on, not only need to be adopted, but integrated with each other to permit individuals to telecommute.

Another important aspect of adoption is time. Rogers defines the rate of adoption as “the relative speed with which an innovation is adopted by members of a social system” (Rogers, 1995, p. 22). For example, the increased rate of adoption of personal computers in America is undoubtedly related to the growing public awareness of the Internet, and the expanded access to, and use of, computers in schools, homes and businesses (Rogers, 1996). Rate of adoption is often measured by the number of individuals who adopt an innovation within a given time period. For example,

telecommuting began in the United States during the 1970s as a response to the Clean Air Act of 1970 (Harler, 1997) and as a way to reduce high transportation costs caused by the energy crisis (Lupton & Haynes, 2000). By 1992, about 2.4 million employees were telecommuting (Bernardino, 1996), and by 2001, that number had increased to an estimated 21 million people (Cahners In-Stat Group, 2001).

Perceived Attributes of Innovations

The following perceived attributes of innovations determine whether an innovation is adopted (and at what rate) or rejected: relative advantage, compatibility, complexity, trailability, and observability (Rogers, 1995). How the attributes of an innovation are perceived over time also determine whether its use is continued. In this study, all five of the attributes are independent variables affecting the continued adoption (a dependent variable) of telecommuting as an alternative work arrangement. The interview questions address each one of these attributes:

Relative advantage is “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 1995, p. 212). This attribute is often viewed in terms of economic profitability such as low initial cost, the immediacy of the reward, and the savings in time and effort. Based on past studies, individuals who telecommute enjoy several relative advantages over the traditional work arrangement including more time with family, more flexible work hours, control over the work environment, and increased job satisfaction.

Compatibility is “the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 1995, p. 224). Innovations that are perceived to be more compatible with the lives and

needs of individuals or groups, as well as with previous adopted innovations, are generally easier to adopt. Conversely, if an innovation is viewed as incompatible, it is more likely to be rejected or its rate of adoption inhibited. A technology's compatibility can also be influenced by company culture. For example, some companies believe telecommuting is too costly to implement and are resistant to making the management changes it requires (Lupton & Haynes, 2000).

Complexity is “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 1995, p. 242). Generally speaking, more complex innovations are adopted more slowly. The technologies required to telecommute can vary widely, but most technologies have an inherent degree of complexity and require some training to use. Furthermore, remote access to a computer system creates a host of security concerns that require information technology (IT) managers to install firewalls and other anti-virus software (Hulme, 2001). This additional security, and the accompanying technical support it requires, adds to the complexity of telecommuting.

Trialability is “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 1995, p. 243). Innovations that can be used with only minimal amounts of time and money tend to be adopted more quickly than innovations that require a substantial commitment of resources. In the case of telecommuting, the incremental invention and adoption of individual technologies (such as phones and computers) made possible the innovation of telecommuting as we know it today. However, the start-up costs associated with a formal telecommuting program, which include the establishment of policies and procedures, the retraining of managers to supervise and support telecommuters, the retraining of telecommuters and coworkers to

work effectively without face-to-face contact on a daily basis, as well as expenditures for telecommunications equipment, are all factors that influence the willingness and ability of employers to offer telecommuting (Mariani, 2000; Bernardino, 1996). In so far as less formalized (structured) programs have fewer start-up costs, employees can experiment more easily with telecommuting. In either case, employees who reject telecommuting can usually return to a more traditional work arrangement, although the setup costs for a remote office are generally a lost investment (Shellenbarger, 1994). A decision to reject or discontinue using an innovation does not preclude its adoption at some future time.

Observability is “the degree to which the results of an innovation are visible to others” (Rogers, 1995, p. 244). If the benefits of adopting an innovation are easy to see, then the likelihood the innovation will be adopted increases. By its very nature telecommuting (i.e., working from a remote location) telecommuting decreases supervisory control through observation (also referred to as “line of sight” management), thereby increasing the need for performance measures (Swink, 2001). However, if “observing” by managers takes the form of detailed reporting by telecommuters of their activities, most any gains in productivity will be eliminated as well (Ellison, 2000). Managers and coworkers can best “observe” the productivity of telecommuters by using progress reports, and by focusing on the “quality, quantity and timeliness of the work” (Johnson, 1997, p. 6).

Generally speaking, Rogers believes that “innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations” (Rogers, 1995, p. 16).

Adoption of Innovations

Rogers defines adoption as “a decision to make full use of a new idea as the best course of action available” (Rogers, 1995, p. 21). The decision to adopt (and to continue using) telecommuting as an alternative work arrangement is the dependent variable in this study, and for the participants, it was a decision they made regardless of whether they were currently telecommuting or had done so in the past four years.

Rogers also categorizes the members of a social system based on the rate at which they adopt a new innovation, and those categories can be distributed along the now-famous S-shaped curve. The five-adopter categories are innovators, early adopters, early majority, late majority, and laggards (Rogers, 1995). One can reasonably assume that businesses and employees who have embraced telecommuting are spread among the five-adopter types, in part, because they have different perceptions about the attributes of telecommuting. However, this study sought to determine if technical writers perceive telecommuting as benefiting them, which was predictive of their decision to continue or discontinue their adoption of this innovation.

Although the technical writers I plan to interview have already adopted telecommuting, the decision to do so did not rest solely with them. Employees or contractor workers and supervisors jointly decide which work options are most beneficial (Pontell, Gray, Marcus & Westfall, 1996 as cited in Clark, 1998). If either party rejects a work option, it will unlikely be adopted. The attributes of telecommuting perceived by companies differ, to varying extents, from those perceived by employees (Bernardino, 1996). But company officials are generally reluctant to disclose business practices and strategies, including the terms and conditions of alternate work options. Therefore, this

study focuses on employees, specifically technical writers, who were willing to discuss adoption issues related to telecommuting.

Additionally, when individuals and organizations engage in the five-stage innovation-decision process, the decision to adopt an innovation may be reevaluated during the confirmation stage of the process. During this stage, the continued use of an innovation may be determined not only by the introduction of other innovations but also by changes in the social system.

The Social System

Societies are comprised of a variety of components or systems including economic, social, political, cultural, etc. These systems are interrelated. The social system is a fundamental component of Rogers' diffusion of innovation theory. Diffusion occurs within a social system, which Rogers (1995) defines as "a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, [and] organizations" (p. 23). Based on this definition, technical writers constitute a group within a social system.

Furthermore, social systems are dynamic, and are thus able to change in response to internal and external factors. Social systems have structure that provides a degree of stability and predictability to human behavior, thereby reducing uncertainty. Social structure can facilitate or inhibit the diffusion of innovations, but innovations, whether adopted or not, cause social change (Rogers, 1995). This study focuses on the effects that the economy and a political event have had on the diffusion of telecommuting among technical writers in the American social system.

Economic Recession and the Events of September 11, 2001

The recent recession in the U.S. economy and the events of September 11, 2001, are two factors that may impact the continued diffusion of telecommuting among technical writers in the American social system.

In the past decade, most economists agree that technology has played a significant role in increasing worker productivity, which is a measure of economic viability (Mitchell, 2002). Robert M. Solow, a professor at MIT and 1987 Noble Laureate in economics, remarked in early 2000 that he would “feel better about the endurance of the productivity improvement [of the 1990s] after it survives its first recession” (U.S. Dept. of Commerce, 2002). A recession is defined as “the decline in real gross national product measured at an annual rate occurring for two consecutive 3-month [quarters]” (Hyman, 1989). According to the Federal Reserve Board (2002), capital expenditures for high technology started to decline in March 2000, as did stock prices. By the third quarter of 2001, the United States had entered an economic recession. According to a recent survey conducted by the Rocky Mountain Chapter of the Society for Technical Communication (2001), 71 percent of technical writers work in the high technology industries of telecommunications, or computer hardware or software development. Technical writers, in particular, are being affected by the downturn in the technology sector.

The second factor that may impact the continued diffusion of telecommuting among technical writers is the events of September 11, 2001, during which a group of terrorists flew hijacked airplanes into the World Trade Center towers in New York City and into the Pentagon in Washington, D.C. (Kleinfield, 2001). The actual number of people killed and missing is not certain, but the current death toll is 3,012 people (Florio, 2002; Washington Post, 2002). For more than twenty years, the U.S. Government and

military have occasionally been targets of terrorism in various places around the world. But never have civilians, in their places of business, on American soil been so viciously attacked as they were on September 11. Among the many outcomes of that day was an immediate and widespread concern about workplace safety.

Before the Committee on Budget on January 24, 2002, Federal Reserve Chairman Allen Greenspan said in his state of the economy address that the current “recession was exacerbated by the terrorist attacks on September 11” (Federal Reserve Board, 2002). The Bureau of Economic Analysis (2002) and the U.S. Bureau of Labor Statistics (2002a) have both reported the economic effects of the terrorist attacks as well. However, disentangling the economic effects of the recession from the impact of September 11 is difficult at best. At this time, consequences of the attacks—other than concerns about workplace safety—appear to be largely indistinguishable from effects of economic recession.

One of the effects has been an increase in the number of workers laid off. According to the U.S. Bureau of Labor Statistics (2002b), unemployment reached 6.0 percent in April 2002, a seven and one-half year high. In Colorado, the unemployment rate reached an eight-year high in February 2002 of 5.7 percent or about 138,000 workers (U.S. Bureau of Labor Statistics, 2002c). Another effect is heightened security in office buildings, mass transit systems, airports, computer networks, and so on, which will almost certainly cause a decline in worker productivity and costs taxpayers millions of dollars in the months and years to come (R. G. Dederick, personal communication, March 14, 2002). These effects, in combination with a more cautious, risk-averse business environment, could either facilitate or inhibit the continuing diffusion of telecommuting among technical writers.

The Diffusion of Telecommuting

The combined occurrence of economic recession and the events of September 11 have created a business environment in which the perceived attributes of telecommuting by employees (or their companies) are not predictable. Uncertainty about the effects of the economic recession on the technology sector of the market and political uncertainty about future terrorist attacks could either facilitate or inhibit the diffusion of telecommuting among technical writers.

Technical writers who telecommute may be very committed to telecommuting after September 11. Heightened concerns about workplace safety may now be perceived by employees as a significant advantage of telecommuting. Employees may perceive the advantages identified in the literature (such as more time with family, greater productivity, lower job stress, etc.) as having even greater importance since the terrorist attacks. Companies may begin or continue existing telecommuting programs for these reasons or as a part of a strategic plan to decentralize their workforce to make the company less susceptible to terrorist attacks.

Protecting personnel and assets could provide companies the kind of motivation necessary to integrate telecommuting into their daily business practices, thus minimizing most compatibility or complexity issues. As recession spurs companies to lay off workers, the jobs of telecommuters may be spared because they don't require expensive primary office space on a full-time basis. Others employees could also observe the positive effects that telecommuting have on their coworkers and possibly participate in an expanded telecommuting program on a trial basis. These conditions, and perhaps others not discussed, would tend to facilitate the diffusion of telecommuting among technical writers.

Conversely, technical writers who telecommute may want to stop telecommuting to spend more face-to-face time with coworkers because of increased feelings of isolation after September 11. Reduced job satisfaction, higher stress and lower productivity could be consequences of a heightened sense of isolation. Telecommuters may also feel compelled to spend more time in the primary office to enhance personal relationships with their supervisors as a hedge against an impersonal layoff. In these scenarios, technical writers could perceive telecommuting as having few relative advantages compared to a traditional work arrangement.

In light of the recession and the sharp decreases in the demand for high technology equipment, technical writers who telecommute may simply lose their jobs along with many others. Fewer telecommuters reduce opportunities for observability. For those employees who remain employed, companies may require longer work hours to compensate for a reduced workforce and an increased workload, thereby causing employees to be overworked. With higher unemployment rates, companies may discontinue offering alternative work options, such as telecommuting, as a benefit to recruit and retain qualified employees. Smaller, leaner companies may need to centralize their workforce to reduce costs, and may be unable to start telecommuting programs on a trial basis because of limitations on time and resources. Other companies may terminate existing telecommuting programs based on the perception that they are too complex for existing IT staff to manage or are incompatible with a simpler business model. These conditions, and perhaps others not discussed, would tend to inhibit the diffusion of telecommuting among technical writers.

Research Questions

The research questions this study sought to answer are listed below. Interview questions regarding the perceived attributes of an innovation (relative advantage, complexity, and so on) and the advantages/disadvantages found in my literature review were used to answer research question 1. Interview questions regarding the impact of the economic recession and the events of September 11, 2001, were used to answer research questions 2 and 3.

Research Question 1: Do technical writers who are telecommuting or have telecommuted in the past four years have a positive perception of telecommuting as measured by the perceived attributes of telecommuting?

Research Question 2: How has the economic recession, which hit the high technology industry especially hard, affected the extent to which technical writers are telecommuting or have been telecommuting in the past four years?

Research Question 3: How have the terrorist attacks on September 11, 2001, affected the perceived attributes of telecommuting among technical writers who telecommute or have telecommuted in the past four years?

IV. Methodology

Design Overview

Data was collected through one-on-one, in-person interviews with technical writers from a local writers' group and a regional chapter of a national writers' organization, who were currently telecommuting or who had telecommuted in the past four years. I interviewed eight individuals. I solicited participants for my study by e-mail, but before scheduling interviews, I screened prospective participants using a brief telephone survey to verify they fit the criteria of my study. Before gathering data, I pretested the questionnaire on one participant.

The in-person or personal interview was chosen as the principal data collection method because it is better for addressing complex issues than are other survey instruments (Babbie, 1995). The economic recession and the events of September 11 have changed our society; the latter catastrophe has most certainly changed its structure. According to Rogers (1995), "there have been relatively few studies of how the social or communication structure affects the diffusion and adoption of innovations in a [social] system. It is rather tricky business to untangle the effects of a system's structure on diffusion, independent from the effects of the characteristics of individuals [who] make up the system" (p. 25). By conducting personal interviews with technical writers, that is, the individuals impacted by the economic recession and the events of September 11, I collected a broader range of data to more accurately identify the factors and perceptions that are facilitating or inhibiting the diffusion of telecommuting.

In addition to the aforementioned advantages, personal interviews have several advantages over self-administered surveys, among them is the ability to target the most appropriate people to interview (Babbie, 1995). Some studies using self-administered surveys to investigate telecommuting issues have incorporated data from individuals who have never telecommuted (Khalifa & Etezadi, 1997; Lomo-David, 1999). Additionally, interview surveys help guard against participant confusion and misinterpretation with questionnaire items, and tend to increase the number of questions answered because the interviewer can clarify confusing questions for participants (Dillman, 2000). When necessary, the interviewer can also probe for more complete answers (Babbie, 1995). For these reasons, the interview survey format was the most appropriate for achieving the research goals of this study.

Two of the more common disadvantages to interview surveys are higher costs and more time spent collecting data (Babbie, 1995). Higher costs usually take the form of time spent attempting to schedule interviews, the time and expense of traveling to and from interviews, missed interview appointments, making callbacks, and so on (Wimmer & Dominick, 1997). However, conducting telephone screenings of participants and scheduling interviews helped mitigate both of these disadvantages.

All survey methods (self-administered, telephone or personal interview) are limited by the fact that they collect self-reported data of either past actions or potential future actions (Babbie, 1995). The willingness of participants to accurately convey personal information is a confounding variable (Zimmerman & Muraski, 1995), which poses uncontrolled threats to validity. This is especially true when collecting data using in-person interviews; however, to help encourage honest answers, I ensured participant

confidentiality. Additionally, I did not ask sensitive or controversial questions, which further helped to bolster honest responses.

To capitalize on the advantages of interviewing and minimize its limitations, I applied the “tailored design method” (Dillman, 2000) when contacting and interacting with participants. This survey methodology is especially helpful when researchers are developing survey instruments and learning correct procedures. Dillman bases his survey techniques on social exchange theory. The fundamental premise of this theory is that actions of individuals are motivated by the anticipated reciprocity of these actions by others (Blau, 1964). To encourage respondents to complete surveys, three elements of this theory are critical: increasing rewards, reducing social costs and establishing trust, which take different forms depending on the survey situation. Increasing rewards may include showing respect to participants, making survey questions interesting, and giving financial or material incentives. Reducing social costs may take the form of making survey participation as convenient as possible, asking for only minimal personal information, and making questions appear short and easy to answer. Establishing trust can involve giving participants a token of appreciation in advance of completing the survey, extolling the importance of the survey, and having the survey sponsored by a legitimate organization.

According to Dillman, the objective of the tailored design method is to develop “survey procedures that create respondent trust and perceptions of increased rewards and reduced costs for being a respondent that take into account features of the survey situation, and that have as their goal the overall reduction of survey error” (p. 4). The “survey situation” is the aggregate of critical differences between the survey populations (such as education level and the need for incentives) and the content of the survey,

including its length and the importance or saliency of question topics. Efforts to reduce survey error include avoiding sampling and coverage errors by adopting standardized practices and procedures, and designing surveys and questions to avoid measurement and non-response errors. Designing surveys that are more compatible with the potential respondents and the information sought improves the likelihood of obtaining a higher and more accurate response rate.

The personal interview survey instrument consisted of 34 questions designed to measure the variables described under “Concepts and Variables” above, and to collect limited demographic data. The survey was created in accordance with questionnaire design guidelines suggested by Dillman (2000). Conducting interviews using a survey questionnaire increases the reliability of the data collected because each participant is asked the same questions in the same order. The interview survey (Addendum A) is composed of 34 questions, most of which are open-ended. Open-ended questions tend to provide more comprehensive answers than do closed-ended questions, which limit responses by asking participants to choose an answer from a predefined list (Zimmerman & Muraski, 1995). Most questions used in this study were based on survey questions used in previous studies of telecommuting issues, which helped increase their validity and reduce measurement error. And finally, requesting answers from all participants to each survey question reduces non-response error and further improves both the reliability and validity of the data collected (Babbie, 1995).

Participants

I solicited volunteers for interviews from two groups of technical writers. The first group was a local writers’ group, and the second was a regional chapter of a national

writers' organization. Both groups were comprised mostly of technical writers. These two groups, and their appropriateness for this study, can be better understood with some brief background information.

The national writers' organization was founded over 50 years ago. Worldwide it has more than 25,000 members that included documentation specialists (such as technical writers, editors, and illustrators), instructional designers, usability and human-factors professionals, Web designers and developers, and translators.

The regional chapter has more than 600 members, most of whom are employed throughout the Colorado Front Range. In addition to monthly meetings and a bimonthly newsletter, the chapter offers special interests groups, seminars and workshops; a regional salary survey conducted annually; an extensive website; and an electronic mailing list. I have been a member of this chapter since 1996.

An editor and freelance writer started the local writers' group in 1999; later, it became officially sponsored by the regional chapter of the national writers' organization. The format of the monthly meetings is similar to the chapter meetings, which include one hour of networking over sandwiches followed by a presentation. Examples of topics include the use of FrameMaker, an overview of single-source applications, the importance of usability, job-hunting strategies, and the use of graphics.

Participation in the group is free, and group meetings rely heavily on attendees to volunteer meeting locations and give presentations. Attendees include technical writers, copywriters, editors, freelancers, and professors and students from Colorado State University. In the fall of 2000, the group began using a listserv to notify members of meeting times and locations, announce job openings, facilitate discussions, and to

disseminate professional news. The listserv included the e-mail addresses of about 80 people, some of whom are currently telecommuting or have done so in the past two years.

I first solicited volunteers for interviews from the local writers' group, but was unable to obtain an adequate number for my study. I then solicited volunteers from the regional chapter of the national writers' organization who resided in either Larimer or Boulder Counties. I chose Boulder County as a backup source for participants because of its geographic proximity to Larimer County (it is the first county south along the front range), and, because of the number of high technology businesses in Boulder County, a significant number chapter members reside there. Because neither of these counties produced enough volunteers, I expanded my study to include the counties of Adams, Arapahoe, Denver, Douglas, Jefferson, and Weld.

Procedures

To solicit volunteers for my study, I first sent an e-mail message (see Addendum A) to the mailing list (or listserv) for the local writers' group. The e-mail message provided a brief overview of my study and requested the participation of individuals who were currently telecommuting or who had telecommuted within the past two years. Because I was unable to recruit 9 to 15 volunteers from the writers' group (that is, 8 to 13 interviews and one to two pretests), I then sent a second e-mail message to the mailing list for the regional chapter of the national writers' organization. That e-mail message was similar to the first one; it provided a brief overview of my study and requested the participation of individuals who were currently telecommuting or who had telecommuted within the past two years, but this message requested volunteers who resided in either Larimer or Boulder Counties.

My second e-mail message did not net enough volunteers either, so I sent a second version of my original e-mail message to the mailing list for the local writers' group, but I increased the timeframe for past telecommuting experience to four years. That message did not produce enough participants. I then expanded my study to include the counties of Adams, Arapahoe, Denver, Douglas, Jefferson, and Weld, and sent an e-mail message to the regional chapter of the national writers' organization mailing list that increased the timeframe for past telecommuting experience to four years and expanded the geographic region. With these four e-mail efforts, I was able to recruit eight participants for my study.

As stated in the e-mail message, I contacted volunteers by telephone and conducted a brief telephone survey (see Addendum A) to verify they fit the criteria of my study and to gather some preliminary information about them. I also confirmed by phone that each volunteer was willing to have his or her interview tape recorded for the purpose of transcription. Although I was prepared to simply take notes by hand if necessary, no participants declined to be tape recorded. I then scheduled one-hour interviews with each participant at a various locations including home offices, primary offices, and restaurants. Each interview was preceded by a brief explanation of my study. Before beginning the interviews, all participants were given two copies of the consent form. I asked them to read and sign one of the consent forms, which they returned to me, and then I started the tape recorder and the interview.

The interview questions were asked using a 34-question survey (see Addendum A). In addition to gathering basic demographic information (such as age, gender, work history, etc.), survey questions addressed the study variables, specifically, the impact of the economic recession and the attacks of September 11 on their perceptions of the

attributes of telecommuting (relative advantage, compatibility and complexity, and so on), and their expectations for continued work. After each interview I asked for permission to contact participants if I needed to obtain additional information or clarify any answers.

I pretested my survey instrument on one participant. Pretesting a survey instrument is vital if researchers want to ensure its reliability, that is, be certain it is consistently measuring the variables being studied (Dillman, 2000; Wimmer & Dominick, 1997). During the pretest interview, I asked the participant for comments about the wording of questions, and whether any questions should be omitted or added. Based on the feedback I received, I made was able to include the pretest data in my results because no substantial changes were made to the 34 questions based on the pretest.

Data Analysis

After completing data collection, I transcribed the audiotape from each interview. When participants provided clear and concise answers, I transcribed their words verbatim. When necessary, however, I summarized their answers to address each question while accurately representing their responses. Summarizing data is necessary for two reasons. First, the purpose of each personal interview is to obtain key information rather than to measure or analyze the totality of each participant's response. Second, although I asked each participant the same interview questions in the same order, certain participants expounded on their answers to previously asked questions while answering other questions. This occurred naturally and when I was probing for

clarification during the interview. In these cases, organizing and clarifying participants' responses highlighted the key information this study sought to gather.

In the discussion of results, I report on the answers given by all participants to each survey question, and in my conclusions I summarized my findings and used participant responses to answer my research questions. Where relevant, I also discussed other findings not sought as part of this study.

V. Results

I conducted eight interviews, one of which was a pretest. The pretest data is included in this analysis because no substantial changes were made to the 34 questions based on the pretest. Only minor edits were made to improve some questions' readability when read aloud and to ask questions in the correct tense (present or past) as they related to each participant's job status. For example, I asked, "*Do* your coworkers in the primary office? . . ." of participants who were currently telecommuting, and "*Did* your coworkers in the primary office? . . ." of participants who were no longer telecommuting or who were no longer employed by, or working for, the company with which they had telecommuted.

The following interview data are presented in the order in which they were collected, which was, in part, derived from Rogers' (1995) ordering of perceived attributes of innovations. Many of the interview questions built on each other and I want to preserve certain logical progressions in thought and responses. Complete transcripts of the interviews are in Addendum B. Additionally, to maintain the anonymity of participants in this study, actual company names and office locations have been replaced with the terms such as "[The Company]" and "[The Primary Office]."

Background

I began the interviews with each of the eight participants by gathering some demographic information, as well as basic information regarding their employment and

telecommuting experiences. A summary of the data collected in Questions 1 through 10 are as follows:

- Six were female, two were male.
- Five resided in Larimer County, two in Boulder County, and one in Jefferson County.
- All were technical writers.
- Six were employed by the company for which they telecommuted; only two telecommuted while working as contractors.
- Five worked full time in their primary offices before beginning to telecommute, and three began telecommuting (either full or part time) upon being hired.
- Collectively the participants produced end user and training documentation (manuals and online Help, or web-based), technical marketing materials, and internal communications (such as operating guidelines and administrative procedures).
- All participants worked for high-technology companies (both large and small) or for high-technology divisions within large corporations.
- The number of employees working within the participants' companies or primary offices varied widely from as few as 20 to 100 employees, to larger facilities with between 200 and 500 employees. One participant reported working at a facility with 1,300 people.
- Half of the participants were telecommuting when this data was collected. The other half had telecommuted for a period of time ranging from one month to four or more years.

- The amount of experience varied widely among participants ranging from two to 20 years, with the mean being 11.75 and the median being 11.5 years.
- Length of employment with the company for which they telecommuted ranged from two and 20 years. The mean was 6.3 years; the median was 4.5 years.
- Length of time spent telecommuting with the company for which they worked ranged from as little as one month to five years. The mean and median were 2.5 years.
- The number of days per week spent telecommuting ranged from less than one per week to all five for full-time telecommuters. The mean was 1.7 days per week; the median was two days per week.

Perceived Attributes of Telecommuting

As discussed in my literature review, the following perceived attributes of innovations help determine whether an innovation is adopted (and at what rate) or rejected: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995). Over time, how the attributes of an innovation are perceived also helps determine whether its use is continued.

The second part of the interview questionnaire included a series of questions that addressed all five of the attributes as they relate to the adoption or continued use of telecommuting as an alternative work arrangement.

Relative Advantage

Interview questions 11 through 14 addressed the relative advantages of telecommuting. As defined in my literature review, *relative advantage* is “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 1995, p. 212). This attribute is often viewed in terms of economic profitability such as low initial cost, the immediacy of the reward, and the savings in time and effort. Based on past studies, individuals who telecommute enjoy several relative advantages over the traditional work arrangement including more time with family, more flexible work hours, control over the work environment, and increased job satisfaction.

Q11. What are the advantages or benefits that you receive by telecommuting?

Participants reported every advantage cited in my literature review including flexible work schedule, control over work environment, reduced travel time, and increased job satisfaction.

Flexible work schedule for the purpose of attending to personal activities was the most cited advantage followed closely by having focused, uninterrupted time to work, and time saved by not having to commute. As one participant said, “I save a drive of 45 minutes into town and back, and I also found that I was a lot more productive, especially with specific tasks that I would choose to work on at home. I was more productive because I had fewer distractions.” And another participant had a similar take on the advantages: “I’m an average woman and it takes me about an hour and a half [to get ready in the morning] plus the drive to the office. So, telecommuting either gives you more time to work, which means less overtime in the office, or it gives you more time for your home, depending on the workload.”

One participant valued his one day of telecommuting a week because it allowed him to help his wife home school their son, but he also acknowledged that he liked “fewer interruptions and a quieter work environment.”

The second part of this question was: Are there any advantages or benefits that you expected to receive from telecommuting that you have not received? Only one participant answered “yes” to this question and indicated she expected to be more productive but instead was less productivity largely due to a slow and erratic network connection.

Q12. What are the disadvantages to telecommuting that you experience?

Participants reported all of the disadvantages discussed in my literature review including social isolation, overworking, and perceived loss of status. As discussed in my literature review, *social isolation* is feeling alienated from coworkers and not supported by them and/or the company. *Overworking* is the inability for some telecommuters to impose a schedule on their workday, which can lead to a blurring of the distinction between their professional and personal lives. And *perceived loss of status* is the perception by some telecommuters that their remote work arrangements lack the same professional image enjoyed by their coworkers in the primary office (Gurstein, 2001). This perception may be reinforced by reduced or lost promotional opportunities, which are potential consequences of telecommuting (Johnson, 1997).

No participant reported experiencing any serious degree of the cited disadvantages, although feeling and coping with being “out of the loop” was mentioned by three participants. One participant who telecommutes full time said, “People who

work in the office are not as aware of you and don't always think of you first to do something, so I think I tend to be left out of certain things.”

Managerial resistance to telecommuting was cited by another participant as a significant disadvantage. She thoroughly enjoyed her job until she got a new manager who was opposed to telecommuting, and because of a company policy that leaves alternative work options to “managers’ discretion,” she was eventually barred from telecommuting. Her dissatisfaction is expressed in the following comment:

If you weren't in the office they didn't feel like you were working. And I experienced almost more of the watching over the shoulder—the control. When you're in the office you take an hour lunch. You go to the bathroom. You go get coffee. But, what I experienced [while telecommuting] was that if I didn't answer my phone or my e-mail, and then called back, it was questioned as to where I was. Do you want details? You know, so I found that quite demeaning. . . . And another disadvantage is . . . the success or failure [of telecommuting] wasn't measured by productivity.

The most widespread disadvantage reported by seven of the participants was a range of network connectivity problems including a lack of external access to company intranets or networks, and a lack of late model computer equipment and printers coupled with slow network or LAN connections. One participant said, “I had some difficulty with Internet access. I live up in the mountains and I have a satellite connection and it was touch and go, it wasn't all that great.” One other participant stated, “One real disadvantage is the speed of my connection to the network; that's a major problem. . . .

It's just slow and that's partly because I don't invest in a high-speed Internet connection.”

And a third participant expressed her angst as follows:

My company expects me to have a home ISP or a cable to do VPN [virtual private network], to have a high-speed connection. I don't have that . . . and I only have one telephone line. So I have to do a dial-up connection and I have no second phone line, so if I have to make a call while I'm online, I have to use my own cell phone to talk to the people. It's a pain in the butt.

The second part of this question was: Are there any disadvantages that you expected to experience from telecommuting that you have not experienced? Although most participants answered “no,” one participant cited concerns about social isolation that did not materialize: “I thought it would be much harder to relate to people than it has been. I communicate with a lot of my team members on a regular basis by phone and e-mail, and I don't feel as isolated as I thought I would. But it does take extra effort.” Another participant, who is a contractor, expressed a concern about a perceived loss of status that never occurred:

I thought that the way people perceived my value to the company would suffer from working outside, but it didn't seem to be the case. But I was always careful to check in with people and let them know where I was, and they could always get hold of me, and that seems to have avoided any problems. . . . It's all perceptions; a game of perceptions.

Q13. Does telecommuting increase or decrease your satisfaction with your job?

Seven out of eight participants said telecommuting had increased their job satisfaction.

When answering the second part of the question (If it has increased, please describe how. If it has decreased, please describe why.), most participants cited the relative advantages of telecommuting. One participant said, “Saving the time commuting, not being out in traffic, not being out on icy roads. It gives you a lot more free time just because you are not commuting. I like the flexibility.” Another simply said, “Telecommuting makes me a lot happier as an employee,” and a third stated unequivocally that “Every technical writer should telecommute.”

The only dissenter indicated that her job satisfaction as it related to telecommuting “depended on the circumstances.” More specifically, she liked the flexibility of telecommuting from home several times a month primarily for weather-related reasons and to accommodate her personal schedule. But her job satisfaction would decrease significantly if her company required her to telecommute full-time. Not only would she be required to give up her office (i.e., cubicle), but she would also lose interaction with her coworkers, which she needs and values greatly.

Q14. Given the advantages you mentioned earlier, do you feel that telecommuting is a better option for you than working full-time in the primary office?

Why or why not? All participants indicated that the advantages of telecommuting outweighed full-time work in the primary office. Most participants tended to restate the advantages such as, “Having that flexibility to be able to work in some of those personal things. Telecommuting helped me balance that.” But one participant focused on workplace dynamics:

It gives me uninterrupted time. But I think it needs to be a mixture. I think working at home all the time would be a disadvantage because we have some contractors who work at home all the time and they just don't know what's going on a lot of times, and it's difficult to get them up to speed on things sometime.

It could be argued that this question was leading and may have yielded more diverse responses had it been worded as "Given the advantages *and disadvantages* you mentioned earlier. . . ." However, the data as a whole indicates that participants generally had positive experiences regarding telecommuting, so it is unlikely this question influenced their responses.

Compatibility

Interview questions 15 through 18 addressed the compatibility of telecommuting. As defined in my literature review, *compatibility* is "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (Rogers, 1995, p. 224). Innovations that are perceived to be more compatible with the lives and needs of individuals or groups, as well as with previous adopted innovations, are generally easier to adopt. Conversely, if an innovation is viewed as incompatible, it is more likely to be rejected or its rate of adoption inhibited. A technology's compatibility can also be influenced by company culture. For example, some companies believe telecommuting is too costly to implement and are resistant to making the management changes it requires (Lupton & Haynes, 2000).

Q15. Do you feel your company's culture supports alternative approaches to work, such as telecommuting? Why or why not? Six participants answered "yes" to this question, one said "mostly," and one said "no." Not surprisingly, company culture varied, as did the perceptions of telecommuting and the degree to which it had been implemented. Participant answers ranged from "keeping that flexibility in [the job] keeps the employees happy. You keep the employees happy you keep them productive," to "[the adoption of telecommuting] has been slow. I wouldn't say they heartily embrace it to the hilt but they are open to it."

The one dissenting participant said, "The company culture doesn't [support telecommuting]. My supervisor's culture does. . . . I'm not saying that there aren't other supervisors here that wouldn't support it, but it's not a company-culture thing." This answer clearly suggests that this employee's perception of the company's culture was influenced, if not largely determined by, her immediate supervisor, who played a crucial role in allowing her to telecommute.

Contractors also appear to be affected by company culture even though they lack the status of employees. Based on the following comment from one contractor, "line of sight" management and security were both issues influenced by company culture.

There's always a prejudice against [telecommuting]. I think that people, well managers in particular, are a little concerned about somebody not being right there where they can see what they're doing. Until you've proven yourself it's very difficult for them to accept that you might be more productive, or as productive, at home but once you've been able to prove yourself I think they realize that. At this company, the culture is not quite as security

conscious as the company I was with previously. At [that company] they wanted to carefully guard all of their secrets and that was why they wouldn't let me work at home.

Q16. What needs or problems did you or your employer have that telecommuting was intended to address? And did telecommuting successfully address those needs or problems? Seven participants listed several items that telecommuting addressed including achieving higher productivity, personal flexibility and convenience, avoiding long commutes, and reducing office space, all of which telecommuting had successfully addressed. The participant who mentioned reduced office space liked telecommuting from home but believed her company viewed it as primarily a benefit to them, not to employees: "I'm sure that my boss's directive was his people would work from home, they call it virtual office, isn't that cute? I think it's all a real estate thing. So his department wasn't taking up space."

The only dissenter was a full-time telecommuter who felt the question didn't apply to her situation: "They were looking for people to really fit into their team and it didn't matter if I was on site or telecommuting. It wasn't that they were specifically looking for telecommuters."

Q17. Do your coworkers in the primary office believe that you work just as hard as they do? Why or why not? Seven participants answered "yes" to this question, and their responses covered the spectrum from, "Most of them told me I worked harder than they did," to "I think they assume the best, but I think there's some skepticism." The one dissenter said, "I don't think anybody cares one way or the other. I don't think there's an issue."

Two participants emphasized their productivity as evidence of hard work, as well as good communication as ways to reassure coworkers:

I [went] out of my way to make sure they understood what I was doing. I think if I had been sort of shyly working away the way a lot of people do in their cubicles they might not have perceived me as working as much as they were. . . . We'd exchange some e-mail, and just as a matter of course, I would try to contact at least one person during the time that I was working from home to make sure that they knew where I was so they knew they could contact me. They seldom really needed to but, you know, it was just warm fuzzies.

Q18. Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other employees who telecommute? (For example, teleconferencing you into meetings or directing other employees to address your questions, whether by e-mail or telephone, as quickly as possible)? If so, what accommodations were made? Five participants answered “yes” to this question; three answered “no.” The most often mentioned accommodation was being teleconferenced into meetings. Because teleconferencing was cited as an example in the question, this question appears to have been unintentionally leading.

The five participants who regularly teleconferenced into meetings indicated that it worked well for them. “I teleconference into a lot of meetings . . . and people have been very accepting of that and open to it.” One participant did state that her company had guidelines for communicating with coworkers: “We’re very much a remote-distant

company. We teleconferenced a lot . . . we have corporate rules, and our rules on telecommuting were that if there was a meeting scheduled that was local that you needed to attend you were to switch your days, which was never a problem.”

The three participants who stated that no accommodations were made all arranged the days they telecommuted to avoid known scheduling conflicts or they simply changed their telecommuting days when a conflict arose.

Complexity

Interview questions 19 through 21 addressed the complexity of telecommuting. As defined in my literature review, *complexity* is “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 1995, p. 242). Generally speaking, more complex innovations are adopted more slowly. The technologies required to telecommute can vary widely, but most technologies have an inherent degree of complexity and require some training to use. Furthermore, remote access to a computer system creates a host of security concerns that require information technology (IT) managers to install firewalls and other anti-virus software (Hulme, 2001). This additional security, and the accompanying technical support it requires, adds to the complexity of telecommuting.

Q19. Did you require or receive additional technical training when you began telecommuting? All participants answered “no” to this question. The unanimous response was a bit of a surprise because establishing remote network connectivity can be challenging. Only one participant indicated that “telecommuting training” was even offered by her employer (but did so when responding to question 24). And the focus of

that training appeared to be more on how to manage yourself when working remotely rather than on technical issues: “You could even take a class on [telecommuting]. I didn’t think I needed it. You know, maybe if you’re 21 years old and you don’t have a lot of work experience it’s different.” This question did not address the availability of training, which might have elicited more responses.

Q20. Do you feel you need more, less, or about the same level of technical or IT support as employees who work in the primary office? In contrast to the previous question, this question garnered a range of responses. Five participants said “same,” two said “less,” and one said “more.” The participants who reported needing the “same” level of technical or IT support generally viewed themselves as having the same kinds of IT problems at the office as at home or that the number of problems was about the same. As one participant said, “I have a few more problems with remote connectivity, but then I don’t have problems with their network printers, so it kind of evens out in the end.”

The one participant who said she needed “more” support, made the following comment: “When I’m telecommuting there are always problems. I mean, just doing connectivity, sometimes it breaks. . . . It’s more volatile from home . . . and it’s also more frustrating when it goes down because it takes longer to fix.”

Perhaps not surprisingly, the two participants who stated they need “less” support were both contractors. “Because it was my own equipment and I was responsible for it myself, [the Company] didn’t have to deal with it. . . . I’m pretty independent that way.” The second contractor offered a similar comment: “I really was on my own. It was my personal PC and because I was a contractor [the Company] wouldn’t have fixed it. . . . I was responsible for my own stuff.”

Q21. Has your company implemented additional security measures—such as installing security software (i.e., a firewall) on its host computer system—to maintain the confidentiality of information transmitted to and from employees who telecommute?

Half the participants answered “yes” to this question, and the other half answered “no,” but based on their comments, both answers essentially meant the same thing. That is, participants were either answering (as expressed in my own words): “Yes, we have security software but it wasn’t installed for telecommuters specifically,” or “No additional security measures have been taken; we already have them in place, and they weren’t installed for telecommuters specifically.”

Security issues related to contractor workers would seem to be an obvious concern for companies, but both contractors acknowledged lax security surrounding the work they did. “Because I have a cable modem, I had firewall software myself. But . . . there was never any discussion, like nobody asked me, ‘Okay, so you’re sending e-mails back and forth?’ I would even sometimes e-mail myself files, which, gosh, maybe I shouldn’t have done.” The other contractor made a similar observation: “[Until recently] it was just e-mail, open e-mail, so that was a bit of a [security] problem; when I started using the portable hard drive that at least made that process a little bit more secure.” These comments indicate that security holes may exist with contractors.

Trialability

Interview questions 22 through 24 addressed the trialability of telecommuting. As defined in my literature review, *trialability* is “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 1995, p. 243). Innovations that can be used with only minimal amounts of time and money tend to be adopted more quickly

than innovations that require a substantial commitment of resources. In the case of telecommuting, the incremental invention and adoption of individual technologies (such as phones and computers) made possible the innovation of telecommuting as we know it today. The start-up costs associated with a formal telecommuting program can be significant and influence the willingness and ability of employers to offer telecommuting. Start-up costs might include, for example, the establishment of policies and procedures, the retraining of managers to supervise and support telecommuters, the retraining of telecommuters and coworkers to work effectively without face-to-face contact on a daily basis, as well as expenditures for telecommunications equipment (Mariani, 2000; Bernardino, 1996). By contrast, informal telecommuting programs may be little more than a verbal agreement with an employer that a certain employee can work from home one or two days per week. Informal programs have fewer start-up costs, which more easily permits employers and employees to experiment with telecommuting. A decision to reject or discontinue using an innovation does not preclude its adoption at some future time.

Q22. In the past two years, have you or your company purchased additional computer equipment that is required for you to telecommute? Half of the participants answered this question “yes.” With the exception of a portable hard drive purchased by one of the contractors, companies had purchased additional equipment including printers, fax machines, and additional phone lines.

Q23. Do you feel you can stop telecommuting anytime you want to? Why or why not? Seven of the eight participants said they could stop telecommuting anytime

they wanted to because it was a voluntary work option. If they chose to stop, they could simply return to full-time work in the primary office. However, one of the seven participants, a full-time telecommuter, said she could stop but “not without moving to one of several other states. But I’m sure the company wouldn’t have a problem with [me not telecommuting]. I’m not barred from an office.” So even though she had the option to stop, the consequences were much greater for her.

The one participant who answered “no” was also hired as a full-time telecommuter but would have lost her job had she stopped telecommuting.

Q24. Does your company’s telecommuting program have a *formal* structure that governs all employees who telecommute or is telecommuting performed *informally* with little if any structure? Five participants, including both contractors, indicated that their telecommuting arrangements were informal, having few agreed upon conditions or guidelines. Considering the limited obligation contractors have to the companies for which they work, I was surprised that their telecommuting activities were not closely monitored by way of a formal program.

Although three participants stated that their telecommuting arrangements were formal, this formality appeared to encompass either common sense guidelines (such as the need to still give the company a full day’s work) or technology requirements (such as the system requirements and configurations needed to perform one’s job). The one participant of these three whose company had a program with genuine structure was largely unfamiliar with it:

There’s probably a formal procedure, probably a formal policy out there, I just haven’t seen it. We do have a data security policy and

all that stuff but I don't know if it's specifically for telecommuters or not, or if it's just for everybody. But I think what they've done is update all of the requirements, all of the policies, to include telecommuting because enough people do it.

Observability

Interview questions 25 through 27 addressed the observability of telecommuting. As defined in my literature review, *observability* is “the degree to which the results of an innovation are visible to others” (Rogers, 1995, p. 244). If the benefits of adopting an innovation are easy to see, then the likelihood the innovation will be adopted increases. By its very nature telecommuting (i.e., working from a remote location) decreases supervisory control through observation (also referred to as “line of sight” management), thereby increasing the need for performance measures (Swink, 2001). However, if “observing” by managers takes the form of detailed reporting by telecommuters of their activities, most any gains in productivity will be eliminated as well (Ellison, 2000). Managers and coworkers can best “observe” the productivity of telecommuters by using progress reports, and by focusing on the “quality, quantity and timeliness of the work” (Johnson, 1997, p. 6).

Q25. Do you feel that some of the time you spend in the primary office is required as visual confirmation to management and coworkers that you are a “real” employee? Why or why not? Half the participants answered “yes” to this question, and the other half answered “no.” The four participants who said visual confirmation was required offered sound reasons for acknowledging it: “I do make a point of switching the days [I telecommute] enough to occasionally show up in person, and that’s purely to have

my face be present. . . . It's bridge building." Another participant's response acknowledged the need to maintain relationships to be effective: "We're talking about perceptions. I probably could have been out of the office more often, but if they don't know who you are, or, when new people come in you don't meet them, then you don't have access to them as easily." The participant who was eventually barred from telecommuting due to her manager's opposition to it, viewed visual confirmation in a different light: "It's the perception of working, I mean, for us telecommuting was working, but for my manager the perception was it was not working. . . . There were major control issues, and it's too bad."

Not surprisingly, two of the four the participants who said visual confirmation was not required were full-time telecommuters, but this comment about the dispersion of traditional teams provides additional insights: "In my case [visual confirmation] doesn't matter because my manager is off site anyway. My manager is in St. Louis. I've been on a virtual team for a long time. So, it makes no difference."

Q26. On days that you telecommute, how does your immediate supervisor or manager measure your productivity? Is the same measure applied to your coworkers in the primary office? Four participants said their productivity, and that of their coworkers in the primary office, was not measured (or monitored) in any way. Two of those participants were the contractors, which is ironic because companies often bring in contractors to perform a specific task or group of tasks and productivity is usually an important aspect of the work. One of the contractors said, "In terms of [management] being able to tell the difference between how productive I was on site and off site, I don't

think they really paid much attention to that. They respected my observation that I was more productive off site but they weren't actually out trying to measure it."

Of the four participants who acknowledged having their productivity measured, only one participant said a "status report" (presumably created by management) was used to measure performance. Most of these participants indicated that measurements of productivity were made by clients and/or by team peer reviews, not by managers or supervisors. This was also true of their coworkers in the primary office. As one participant said, "I guess [my productivity is evaluated] mainly through feedback from my team members and my clients, and it's definitely not on a daily basis. I mean I may not talk to my immediate manager, weeks could go by and I may not talk to my immediate manager just because we are so project oriented."

Q27. Do you feel your immediate supervisor or manager values your work as much as that of employees working full-time in the primary office? Why or why not?

Seven participants felt their work was equally valued with that of their office mates. But "value" was generally interpreted to mean "work product," as one participant's answer illustrates: "Get the work done and make the client happy, and as long as you do that you're okay."

The participant who answered "no" had a manager who was opposed to having workers telecommute, and that opposition persisted despite the proven benefits of telecommuting: "When we did our year-end stats, we had increased our productivity. Which was really sad; [losing the option to telecommute] was hard, it was really hard."

The Effects of Economic Recession on Telecommuting

Interview questions 28 through 30 inquired about the impact that the recent U.S. economic recession had on technical writers who telecommute. As defined in my literature review, diffusion occurs within a *social system*, which is comprised of a variety of interrelated components including economic, social, political, cultural, etc. Social systems can facilitate or inhibit the diffusion of innovations (Rogers, 1995), and technical writers constitute a group within a social system. The economic recession, which began in the third quarter of 2001, heavily impacted the technology sector (Federal Reserve Board, 2002). Because a significant percentage of technical writers work in that sector, the economic recession has created a business environment in which the perceived attributes of telecommuting by employees (or their companies) are not predictable. Uncertainty about the effects of the economic recession could either facilitate or inhibit the diffusion of telecommuting among technical writers.

Q28. In the wake of the current economic recession, has your workload increased, decreased or stayed about the same? Three participants indicated their workload had increased and that increase appeared to be directly related to the economy. Two of those three participants were the contractors, one of whom said, “[The Company] is in a constant state of reorganization so they would just keep shuffling things. And it was interesting, when reorgs and layoffs came, I [as a contract employee] was the only one that got more stuff.” The other contract employee made a similar comment: “I think maybe a little bit more work was coming my way because [The Company was] reluctant to bring somebody on full time, you know, as opposed to a contractor, so they had a lot of contract work.”

Two participants said their workload decreased, and the decrease appeared to be directly related to the economy. One of those two participants said, “It’s decreased, but it is decreased for the whole company not just for the remote workers.” Two participants said their workload had stayed about the same. Only one participant, speaking to fluctuations in business, said her workload had increased, decreased, *and* stayed about the same. “It depends on the year. I mean, it’s gone up and down and all over the place. . . . I think it’s just life.”

Q29. Do you feel *your employer* is more or less inclined to have you telecommute given the economic recession? Why or why not? Only one participant answered “yes” to this question, and said, “Even more so because [telecommuting] saved costs on real estate.” That is to say if employees require less space, by sharing cubicles or by telecommuting, companies can reduce the amount of office space they need, thereby saving money.

The other seven participants said they saw no connection between their company’s desire to have them telecommute and the economic recession. This lack of connection was expressed in comments such as “It’s not really a factor.” “I don’t think [my telecommuting is] affected, because from the company’s point of view it’s not more expensive to have telecommuters.” And, “If I were telecommuting right now, the economics would not have an impact. They don’t do it for cube sharing or anything like that.”

Q30. Do you feel more or less inclined to telecommute given the economic recession? Why or why not? Six participants indicated that they didn’t think the economy was a factor in their decision to telecommute. Most participants cited personal

reasons for telecommuting, such as: “I think it was a personal choice. I’d rather work from home and I kind of like setting up my home office; I can have a nicer environment there. I can watch the deer out of the window, which I can’t do at work.”

The one participant who said she was more inclined to telecommute given the economic recession cited the personal cost savings, especially on a wardrobe for the office, as the reason. “I didn’t have commuting costs, I didn’t have to put gas in the car very often, I could wear any old sloppy clothes.”

One participant said she was neither more nor less inclined: “It’s crossed my mind that the more [physically] remote you are, of course, the more vulnerable I think that you are. But I don’t think I’m remote enough to worry about it. If I lose my job, that’s not going to be reason why.”

The Effects of the Events of September 11, 2001 on Telecommuting

Interview questions 31 through 34 inquired about the impact the terrorist attacks on September 11, 2001, had on technical writers who telecommute. As defined in my literature review (and previously established), diffusion occurs within a *social system*, which is comprised of a variety of interrelated components including economic, social, political, cultural, etc. Social systems are dynamic, and are thus able to change in response to internal and external factors (Rogers, 1995). Following the terrorist attacks on September 11, 2001, there was an immediate and widespread concern among employees about workplace safety (Hulme, 2001; Kistner, 2001). The structure of social systems provide a degree of stability and predictability to human behavior, thereby reducing uncertainty (Rogers, 1995). But given the uncertain political and business environment created by the terrorist attacks, the perceived attributes of telecommuting by

employees (or their companies) are not predictable. And uncertainty about future attacks could either facilitate or inhibit the diffusion of telecommuting among technical writers, a group within the American social system.

Q31. Do you feel *your employer* is more or less inclined to have you telecommute after the events of September 11, 2001? Why or why not? Five participants indicated that they didn't think the events of September 11 were a factor for their employers, and two participants had stopped telecommuting prior to September 11. The only participant who answered "less" was one of the contractors: "I feel like the company was running a little scared because of 9/11 and all that. The 9/11 security thing and the recession I think went hand in hand to make it lean times. So everybody was being very careful not to overextend and [having all employees and contractors work in the primary office] seemed to be the simplest way to manage that."

Q32. Do *you* feel more or less inclined to telecommute after the events of September 11, 2001? Three participants said that the events of September 11 were not a factor influencing their desire to telecommute. One participant said, "I'd just rather be working from home all the time. . . . No, September 11 didn't affect me."

Four participants said they were neither more or less inclined to telecommute after September 11. One of the full-time telecommuters said, "It might be different if I lived in a huge city. But here, maybe I'm stupid, but I don't feel as threatened as maybe I would if I lived in a big city." And, one of the contractors said he was far more concerned about remaining employed after September 11 than he was about whether his job involved telecommuting:

September 11 certainly put fear in my soul [in terms of job security]. I got laid off in October 2001 and there was nothing. And I just was desperate and I went for anything I could find and I ended up getting three jobs at once and trying to work them all. . . . The main reason I accepted all three of them was fear because, you know, it looked like everything was going to tank . . . and anything that came along was worth taking.

One of these four participants, though clearly stating her desire to telecommute was not affected by the events of September 11, did acknowledge she was temporarily less inclined to telecommute on the day of September 11:

I felt an immediate need to be at work. Because I live alone, I think, I felt a need to be around people. [I went into the office but] it was not a productive day, by any stretch of the imagination, for anyone. They had TVs set up in conference rooms and that's where people were, and by about 3:00 or 3:30 almost everybody was gone.

One participant had stopped telecommuting prior to the events of September 11, 2001, so she could not answer this question.

Q33. Do you have concerns about acts of terrorism being committed at your primary office? Why or why not? Seven participants answered “no” to this question. One participant said she was not concerned “because I have other things to worry about, you know? Because I’m in Fort Collins; I’m in a short building in Fort Collins.”

Another one said, “We made cameras, scanners, photo printers, where’s the terrorist threat there?” A third participant referenced a local tragedy when responding:

It’s just something I’m not worried about. I don’t think we’re any more of a target than anything else, and I’m just not going to worry about it. I just don’t see it as an issue. We have security in place in terms of you can’t let anybody in without a badge and all that kind of stuff. You know, because of the possibility of violence in the work place. . . . But I mean, I work . . . the office is four miles from Columbine High School.

One of the contractors made this insightful comment:

It’s never really been a big concern for me and I guess, when I’ve worked at government offices, or in high-rise buildings or something, I might feel a little bit more concerned about that. . . . When I worked at US West we were right across the street from where they were trying the guys for [the Oklahoma City bombing]. Anytime a Ryder rental truck pulled up to the building everybody sort of got nervous, but I never really felt that much exposure at this company. . . . Whereas the company [I worked with] before . . . had probably less to lose, but they had this super duper security system. . . . I really felt more of a security threat because there was more security visible. . . . It’s an interesting question because, you know, there’s the perception of security and the actual feeling of security.

The only participant who said she was concerned about acts of terrorism at the primary office felt that way only when visiting her company's east-coast headquarters:

Banks all over the nation are connected to us and transactions come through us. We have phenomenal security, I mean they were in lock-down when September 11 happened. And that was a major concern of our company and all other companies like ours, is that terrorists would either hack into the system or actually attack the physical system. And I think about it a lot when I go to corporate in New Jersey; I think about how vulnerable we are.

Q34. If the decision to telecommute was solely yours, would you want to continue telecommuting? Why or why not? The eight participants were unanimous in their desire to continue telecommuting. A few of their reasons included the following:

- “I don’t ever want to work in an office again. It’s not that I’m antisocial, I just really like working from home.”
- “I just think telecommuting is superb. . . . I just hope more and more companies do it. It’s a good deal.”
- “More productivity and less windshield time. . . . It’s nice to be at home. It’s a nicer environment, [and] you have control over it.”
- “I want the option. I always want the option.”

VI. Limitations

This study had the following limitations:

1. The participants in this study were selected from a small group of technical writers who telecommute from within a limited geographic area and who are members of at least one of two regional professional groups. Consequently, the participants did not qualify as a representative sample of all technical writers in the region or the state.
2. This study elicited the view of technical writers only. However, the views of other professions that have jobs with high levels of telecommutability (such as medical transcriptionists and auditors), were not included. Workers in other professions may have different perceptions of the attributes of telecommuting.
3. This study focused on the effects that economic and political changes have had on the continued diffusion of telecommuting among technical writers. Other components of social systems (such as the broader American culture) also influence diffusion but were not included in this study.
4. Responses to interview questions were self-reported, and in some cases, relied on participants' ability to remember past events and decisions. Therefore, the data may not be completely accurate or reflect actual circumstances.

5. Participants were currently telecommuting or had done so in the past four years. The perceived attributes of telecommuting by technical writers who have not telecommuted were not included in this study. Among non-telecommuters, the knowledge or awareness of the relative advantages of telecommuting is unknown, and such knowledge could be an important indicator of how inclined the uninitiated are to experiment with telecommuting in their current or future jobs.

6. Gathering data through personal interviews can be more threatening to participants than self-administered surveys, conducted via mail or e-mail. Furthermore, face-to-face interviews tend to inhibit participants from giving socially undesirable answers or answers they think might run counter to the interviewer's beliefs or views (Dillman, 2000). However, this limitation was minimized because I did not ask questions of a sensitive or controversial nature.

VII. Conclusion and Recommendations

Conclusions and answers to research questions are presented within the following three sections: the perceived attributes of telecommuting, the effects of the economic recession on telecommuting, and the effects of the events on September 11, 2001 on telecommuting.

Perceived Attributes of Telecommuting

Based on the results of the interview questions regarding the perceived attributes of telecommuting, participants reported every relative advantage identified in my literature review; they also reported every disadvantage identified in my literature review, though none was experienced to any serious degree. Telecommuting was reported by participants to be widely compatible with the cultures of their companies, it addressed many personal needs of participants (e.g., higher productivity, personal flexibility), and participants said their work was valued equally with that of their coworkers. Participants reported that the complexity of telecommuting was low, the trialability was high, and observability was enhanced by participants who occasionally switched the days they telecommuted, maintained good communication with coworkers and supervisors, and who produced quality work products.

Research Question 1

“Do technical writers who are telecommuting or have telecommuted in the past four years have a positive perception of telecommuting as measured by the perceived attributes of telecommuting?” Based on the participants’ answers to interview questions about the perceived attributes of an innovation (i.e., relative advantage, complexity, and so on), and the advantages and disadvantages found in my literature review, the answer to this question is yes.

Participants perceived telecommuting favorably in relation to all five of the perceived attributes that Rogers’ diffusion of innovation theory identifies as determining the adoption and continued use of innovations. Participants expressed a genuine devotion to telecommuting, and when asked whether they wanted to continue telecommuting, all eight were unanimous in the desire to do so.

The following perceived attributes of innovations determine whether an innovation is adopted (and at what rate) or rejected (Rogers, 1995). Rogers believes that “innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations” (Rogers, 1995, p. 16).

Relative Advantage

Participant responses regarding the relative advantages of telecommuting strongly indicate that the benefits of telecommuting far outweigh working full time in the primary office. The use of telecommuting, especially on a part-time basis, continues to be highly valued as a way to balance the demands of personal and professional life.

Even though participants named all of the disadvantages of telecommuting discussed in my literature review, none of them was apparently significant enough to deter participants from wanting to continue telecommuting. Some of the concerns about “isolation” stemming from lone computer use seem to be less of an issue than was reported in past telecommuting studies (Griffith, 1995; Johnson, 1997). Several possible explanations could account for this. First, traditional teams comprised of coworkers within a given office or location have given way to cross-functional teams with members spread around the country, if not throughout the world. By necessity, members of these “virtual teams” have had to adjust to working on projects without regular face-to-face contact with their immediate team members. In this context, the traditional definition of “isolation” (that is, being separated from one’s coworkers at the primary office) has become less relevant because such separation is an increasingly common condition in which work is performed. The distinction between *not* seeing one’s immediate team members in the primary office and *not* seeing one’s immediate team members while working from home is fairly insignificant. This is not to say telecommuters no longer suffer from traditional forms of isolation, but rather, it may now be reported less because a certain degree of “isolation” has become an accepted, if not necessary, aspect of performing work with a computer.

Second, the pervasive use of laptop computers, cellular telephones, and wireless Internet connections vastly increases not only the portability of work, but also the very office itself. Telecommuters who once felt isolated as a consequence of being tied to the home office now have the option of working at the local coffee shop or park.

The most surprising disadvantage reported by seven of the participants, and not mentioned as significant in other studies, was the range of network connectivity

problems. These included a lack of external access to company intranets or networks, a lack of late-model computer equipment and printers, and slow network or local area network (LAN) connections. The rapid growth in the availability of high-speed connections in homes may have created an expectation by some employers that employees wishing to telecommute from home will provide enhanced connectivity, though only one participant in this study had a high-speed connection at home. This “technology gap” is not an insurmountable issue but the expense of overcoming it could be an inhibiting factor to further diffusion of telecommuting.

Compatibility

Company culture is a dominant influence on the general perceptions of telecommuting within organizations (Bernardino, 1996). The degree to which a company has embraced telecommuting also appeared to influence the perception of coworkers regarding the value and productivity of those who telecommute. All participants in the study worked (or had worked) for companies or supervisors who had positive perceptions of telecommuting as a viable work option, and that perception appeared to be held by their fellow employees as well. Contract employees who telecommuted also reported having access to the same range of work options enjoyed by regular employees.

Employees’ perceptions of a company’s culture can be additionally influenced, perhaps heavily so, by their immediate supervisors or managers. Depending on the latitude immediate supervisors or managers are given, they can create an alternative work environment—a sub-culture of telecommuting—that is more conducive to their employees’ needs. One participant in this study had a supervisor who permitted her to telecommute even though the company (and most other supervisors) probably would not

have allowed it. Conversely, the same freedom that permits managers to offer alternative work arrangements and adjust office routines also can be used to restrict work options. Another study participant acquired a new manager who was vehemently opposed to telecommuting, and that manager's resistance ultimately led to the demise of telecommuting in her department despite documented gains in productivity.

Complexity

Computer reliability and literacy appear to have lessened the need for extensive IT support among telecommuters because none of the participants said they required or received additional technical training when they began telecommuting. The general lack of "telecommuting training" implies that companies may not know about the potential IT disadvantages associated with telecommuting, or are not fully committed to telecommuting as a legitimate, cost-effective alternative work arrangement.

All participants reported that their companies had robust firewall and network protection in place; however, no one indicated that any of those measures had been taken to enhance security for telecommuting in particular. Companies appeared to have generally upgraded network security to guard against external security threats, while remaining unaware or markedly less concerned about internal security threats. Both contractors reported transmitting and transporting confidential information from the primary office to their homes via e-mail, floppy diskettes, and CDs. This exposes an obvious and disconcerting hole in security that, among other things, makes those firms vulnerable to industrial espionage. Given the connectivity and access problems reported by seven of the participants, it seems reasonable that if companies provided network-

compliant equipment to both employees and contractors they could simultaneously improve productivity while reducing security risks.

Trialability

Diffusion of personal computers remains high, which is probably why companies bought nothing for half of the participants and provided only peripherals such as printers, fax machines, and second phone lines to the other half. These relatively low costs for employers and employees to experiment with telecommuting helped to increase its trialability.

Except for one participant hired to telecommute full time, the freedom to stop telecommuting at anytime was enjoyed by all, which further increases its trialability. The ability of employees and contractors to opt out of an alternative work arrangement they might view as unproductive, for example, is clearly encouraging, but a “revolving door” approach to telecommuting potentially relegates it to the status of a work style rather than a legitimate business strategy. This concern is further substantiated by the lack of formal agreements or conditions that govern most telecommuting arrangements, which leave both employees and employers vulnerable to a host of problems such as inappropriate expectations, and unnecessary exposure of the company’s confidential data to unsecured transmission channels such as e-mail. Perhaps the inherent flexibility of telecommuting leads people to believe its structure must be equally informal. If telecommuting agreements were more broadly implemented it would enhance the legitimacy of telecommuting without inhibiting its trialability.

Observability

Whether telecommuting is performed on a full- or part-time basis, it was important to most participants that coworkers had the perception that they were working, and that their work product was equally valued. This finding is in keeping with studies cited in my literature review that report telecommuters are often not recognized as “real workers” or as really working because their workday and workplace do not conform to that of traditional workers (Gurstein, 2001).

As the ability of telecommuters to perform work has grown more diverse and portable (e.g., with laptop computers and cellular telephones), the focus appears to be shifting away from a visual-based confirmation of performance to a work-product-based confirmation of performance. The emphasis on the latter is especially evident among participants who work on virtual teams (that is, teams that are spread out across the country, if not the world). Producing quality end products (such as user and training manuals), maintaining good communication with coworkers and management (whether by phone, e-mail, or instant messaging), and occasionally switching telecommuting days were all cited by participants as effective ways to create a degree of observability. With the exception of switching one’s telecommuting days, participants who provided coworkers and management with visible work product and easy accessibility throughout the workday were essentially providing “observable” substitutes for their physical presence in the primary office.

Work product is itself an observable measure of productivity, and according to participants, their managers, supervisors, coworkers, and clients are paying attention to that as opposed to physical presence of workers.

The Effects of Economic Recession on Telecommuting

Based on the results of the interview questions, most participants reported fluctuations in their workloads directly attributable to the economic recession. The majority of participants said the economic recession was not a factor in their decision to telecommute, and reported no connection between their company's desire to have them telecommute and the recession.

Research Question 2

“How has the economic recession, which hit the high-technology industry especially hard, affected the extent to which technical writers are telecommuting or have been telecommuting in the past four years?” Answers to interview questions regarding the impact of the economic recession reveal that the recession has negatively impacted business sales and workload, but has not, to any significant degree, affected workers who telecommute. In other words, participants believed business decisions aimed at coping with the recession tended to be based on market conditions as a whole, not on whether certain alternative work arrangements were more or less cost-effective or productive.

All participants had been affected by the economic recession, but how each one was experiencing it depended on the segment of the high-technology industry they worked in and whether they were contractors or full-time employees. For example, the two contractors said their workloads had increased due to either layoffs of full-time employees resulting in the reallocation of work, or the reluctance of companies to hire full-time employees in an effort to avoid incurring the higher costs associated with benefits such as health care. By contrast, most full-time employees had experienced fluctuating workloads or reduced workloads as a consequence of lower sales. The

desirability of telecommuting, however, was not influenced by economic factors; all participants needed their jobs first and foremost, and if they could telecommute, all the better.

Participants could accurately speak to fluctuations in their workload, but asking them to assess the impacts of the economy on telecommuting was more problematic. Unless someone is an economist or fairly savvy about the range of factors that influence the economy, asking people to identify the effects of economic recession on themselves, much less on their employers, appeared to be too large of a task. A series of smaller, more precise questions about deferred pay raises, layoffs, hiring freezes, and so on, might have provided more useful data about the true effects of the economic recession on participants and their companies.

That said, several participants mentioned the cost to businesses of maintaining large office spaces while allowing telecommuters to work part time from home. Those participants acknowledged the financial incentives for companies to keep telecommuting to a minimum for employees with offices or to move some workers to full-time telecommuting. However, most participants did not want to telecommute full time because they needed or wanted the time and interaction with coworkers in their primary offices.

In the wake of the recession, outsourcing has become an emerging trend that is reshaping the economics of the high-tech industry. Outsourcing or off-shoring are terms used to describe the process of companies sending jobs, including programming, technical support, and technical writing, to other countries (such as India and China) to be done by workers who receive lower salaries and fewer benefits than American workers (Lohr, 2003). Companies that are outsourcing jobs claim it is necessary to remain

competitive in a global economy (Kripalani & Engardio, 2003). But the practice is expected to cost the United States nearly 3.3 million jobs by 2015 (Thottam, 2004), with more than 460,000 of those coming from the high-tech industry (Lohr, 2003). In certain cases, outsourcing is little more than telecommuting being performed on a much larger scale and across much greater distances. The years ahead will reveal whether the costs associated with maintaining a foreign work force and managing projects remotely are more profitable for companies than hiring workers to telecommute within the United States.

The Effects of the Events of September 11, 2001 on Telecommuting

Based on the results of the interview questions, most participants said the events of September 11, 2001, were not a factor in their decision to telecommute or their employers' decision to allow them to telecommute. Only one participant reported having concerns about acts of terrorism being committed at her primary office, and all participants were unanimous in their desire to continue telecommuting.

Research Question 3

“How have the terrorist attacks on September 11, 2001, affected the perceived attributes of telecommuting among technical writers who telecommute or have telecommuted in the past four years?” Participants reported that the events of September 11 had no effect on their perceived attributes of telecommuting.

Uncertainty about future terrorist attacks could have either facilitated or inhibited the diffusion of telecommuting among participants and their employers. For example, participants could have become very committed to telecommuting after September 11 because of heightened concerns about workplace safety. Conversely, participants could

have been more inclined to stop telecommuting to spend more time in the primary office with coworkers to reduce feelings of isolation, and to enhance personal relationships with their managers and supervisors as a hedge against an impersonal layoff. With respect to their employers, participants could have reported that their companies wanted to initiate telecommuting programs or significantly expand existing ones for the purpose of protecting personnel and company assets from terrorist attacks. Conversely, companies may have needed to centralize their workforce to reduce costs and terminated existing telecommuting programs. However plausible these scenarios (and any others) might be, none was cited by participants as affecting the perceptions of employers or employees. To the contrary, all participants conveyed an unchanged desire to continue telecommuting and likewise reported no perceived difference in their employers' desire to have them telecommute.

Reactions to the terrorist attacks themselves were acute but relatively short-lived. For example, one participant went to the office to be with her coworkers the day of the terrorist attacks rather than telecommuting from home, and another participant took on extra jobs to ride out the ensuing recession. Only one participant, who occasionally traveled to her company's headquarters in New Jersey, expressed some concern about the possibility of a terrorist attack there. The other seven participants reported having no concerns about acts of terrorism in the United States, and all eight said it was not a factor when they were deciding whether to continue telecommuting. No participant pondered the questions regarding workplace terrorism; each answered fairly quickly with little elaboration. Although not explicitly stated, it's possible that participants had previously weighed any anxiety they had regarding possible acts of terrorism at their primary offices against the likelihood of actually becoming victims. This may have been done in the

days, weeks, or months following the attacks on September 11, 2001, and if no obvious threat was evident, which was the case for seven of the participants, then a decision was made to simply not worry about it. However participants reached this conclusion, it suggests that employers and employees are not letting fear of terrorism guide their decisions regarding alternative work options. Unlike the previous questions regarding the economic recession, I believe participants could gauge the impact of September 11 on themselves and their employers, and accurately conveying their thoughts and perceptions.

The attacks of September 11 have changed our nation and the world. When attempting to relate a national tragedy to their workplaces and telecommuting, two participants mentioned a geographically closer one—the shootings at Columbine High School in Littleton, Colorado, on April 20, 1999, which killed 12 students and one teacher (Associated Press, 2001). One of those participants (who telecommutes so he and his wife can home school their son), made the following comment after the interview had ended: “With respect to national tragedies and home schooling, I think that the Columbine High School shootings might have more impact on working parents’ desire to telecommute out of concern for the safety of their children in public schools.” That comment speaks to the fact that tragedies affect us, and the ones closest to home probably have a greater influence over our lives and our sense of security than do tragedies in other parts of the country.

The findings of this study indicate that telecommuting did not mitigate or otherwise minimize the effects of economic recession or national tragedies on participants. Telecommuting did provide participants more flexibility to organize their time, permitted them to work in a more productive and controlled home environment, and reduce the time and costs associated with commuting, all of which increased their job

satisfaction. When I asked the participants if they would want to continue telecommuting if the decision was solely theirs, the answer was a resounding and unanimous “Yes.” If that sentiment is widely held, the continued adoption of telecommuting by technical writers appears highly probable.

Recommendations for Further Study

Based on the findings of my study, I recommend the following areas for additional research:

- Investigate the “technology gap” between the computer equipment used by telecommuters and the company networks to which they need reliable access in order to effectively perform their jobs. The appropriate response by most companies to hackers and spam has been more and better network security, but it has created equipment incompatibility problems for remote workers as well as increased the complexity of establishing remote access. Whether companies are aware of this “technology gap” or have practical solutions for addressing it is unknown.
- Conduct a study focusing on the costs and benefits of outsourcing high-tech jobs overseas as opposed to working with a telecommuting work force in the United States. This would likely take the form of case studies that looked at the gamut of costs associated with outsourcing technical writing jobs compared to using American technical writers who telecommute for the same projects. Factors to research could include the number of employees required to manage outsourced projects, the quality of work done internationally, the

amount of pre-publication work required, and the type and scope of customer feedback.

- Develop a revised survey questionnaire based on the results of this study and distribute it to a larger sample population. This study was conducted with a small group of technical writers from one geographic region within a single state. Though limited, this study did identify and clarify a number of issues that can now be adequately addressed with a survey questionnaire. Such a study could be expanded to include questions directed at immediate supervisors and managers of technical writers. A larger study would provide more of a representative sample of technical writers and the industry as a whole.
- Study the perceived attributes of telecommuting by technical writers who have not telecommuted. Participants in this study were currently telecommuting or had done so in the past four years. Among non-telecommuters, the knowledge or awareness of the relative advantages of telecommuting is unknown, and such knowledge could be an important indicator of how inclined the uninitiated are to experiment with telecommuting in their current or future jobs.
- Study other professions that have jobs with high levels of telecommutability (such as medical transcriptionists and auditors), and then compare those results to those presented in this study. The perceived attributes of telecommuting by technical writers may be influenced by the direct impact the economic recession and off-shoring has had on the high-technology industry, and workers in other professions may not share those views.

- Use the results of this study to conduct several focus groups with technical writers who telecommute, and with their immediate supervisors or managers, to determine whether new or additional concerns or effects have been experienced. As the economy regains stability and the events of September 11, 2001, become more distant, the opinions and attitudes of technical writers and their managers regarding telecommuting may change. A series of focus groups could identify any changes that could be incorporated into a larger, more representative study.

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Addendum A: Data Collection Tools

E-mail Requesting Study Volunteers

Subject line: Request for Research Participants

Text:

Hello All,

Some of you know me from group meetings. For those of you who don't, my name is Bruce Hallmark. In addition to being a technical writer, I'm also a graduate student at Colorado State University. I'm conducting a study on technical writers to fulfill my thesis requirement for my Master's degree in technical communication.

This message is a request for research participants—if you qualify, your assistance would be greatly appreciated!

In a nutshell, I'm evaluating how technical writers perceive the attributes of telecommuting (such as its advantages and disadvantages, and the characteristics and compatibility of telecommuting within your company) and determining what effects the economic recession and the terrorist attacks on September 11 have had on technical writers who telecommute. To qualify for my study you need to meet two criteria:

1. Live in Larimer County.
2. Be a technical writer who is telecommuting or has telecommuted in the past two [or four] years. For the purposes of my study, I define a telecommuter as an individual who is employed either full or part time by a company (as either a regular employee or a contract worker), and who works at a remote location (most likely at home) one or more days per week.

If you are currently unemployed, you still qualify provided the above description applied to you in the past two years. However, the description excludes those individuals who take work home at night or on weekends.

The interview takes only about one hour, and your identity will remain strictly confidential.

If you're interested, please respond "off-list" by sending your name and telephone number to me at [my e-mail address] so I can contact you to arrange an interview time and location. (NOTE: If you "Reply" to this e-mail, you will be sending your name and telephone number to everyone on the mailing list.)

Again, any assistance you can provide would be greatly appreciated!

Thank you for your time and attention.

Bruce Hallmark

Script for Brief Telephone Screening

Participant's Name: _____

Phone number: _____

Hello, my name is Bruce Hallmark. I'm the person who sent the e-mail to the mailing list asking for volunteers for my study. Thank you for sending me your name and telephone number.

As my e-mail stated, I'm a technical writer and a graduate student at Colorado State University. The study I'm conducting for my thesis is about evaluating how you, as a technical writer, perceive the attributes of telecommuting (such as its advantages and disadvantages, and the characteristics and compatibility of telecommuting within your company) and determining what effects the economic recession and the terrorist attacks on September 11 have had on your continued use of telecommuting as an alternative work arrangement.

Before we set up an interview, I would like to ask you a few questions to confirm that I can interview you for my study.

1. I would like to verify that you qualify as a participant of my study. Are you a technical writer? Yes No
2. For my study, I define a telecommuter as "an individual who is employed either full or part time by a company (as either a regular employee or a contract worker), and who works at a remote location (most likely at home) one or more days per week." Using that definition, are you currently a telecommuter or have you telecommuted in the past two [or four] years?
Yes No
3. All of the information I'm collecting is strictly confidential. No one but me will know your identify. I will not be using your name in my study; rather you will be referred to as a "Participant." Is this okay? Yes No
4. And finally, so I can accurately transcribe your answers to questions, I would like to tape record our interview. Again, this information is confidential, and after I transcribe the audiotapes and conclude my study, I will destroy them. Is it all right with you if I tape record our interview? Yes No
5. The interview will take about one hour to complete. When can we schedule a time to meet?

Determine a quiet location in which to conduct the interview.

Personal Interview Questions

Pre-Interview Checklist

1. Restate the purpose of the study (i.e., I'm studying what effects the economic recession and the terrorists attacks on September 11 have had on the continued adoption of telecommuting by technical writers.)
2. Remind the participant that his/her participation is voluntary.
3. Remind the participant that his/her identity will remain confidential.
4. Inform the participant that he/she can quite the interview at any time, that he/she does not have to answer any question he/she don't want to, and that I will stop the interview if I notice the participant becoming upset.
5. Have the participant read and sign the consent form.
6. Give the participant a copy of the consent form.
7. Start the tape recorder for those participants who agreed to have their interview taped.

Interview Questions

NOTE: Bracketed words or letters and present and past tense verbs divided by a forward slash are visual prompts to correctly phrase questions for participants who are currently telecommuting as opposed to those who are not.

Background

1. (Note gender: Male / Female).
2. What county do you live in? Larimer or Boulder
3. What type of company do/did you work for?
4. About how many employees work[ed] at your company (including both full-time and part-time people)?
5. How long have/were you been with the company?
6. How long have you been a technical writer?
7. How long have/did you telecommute[d]?
8. a) How many days per week do/did you telecommute?
b) How many days per week are/were you in the primary office? (the "primary office" is the company office)

9. Do/Did you work full- or part-time in the primary office before beginning to telecommute?
10. What kind of information products do/did you produce?

Relative Advantages

11. a) What are the advantages or benefits that you receive by telecommuting?
b) Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not received?
12. a) What are the disadvantages to telecommuting that you experience?
b) Are there any disadvantages that you *expected* to experience from telecommuting that you have not experienced?
13. a) Does/Did telecommuting increase or decrease your satisfaction with your job?
b) If it has increased, please describe how? If it has decreased, please describe why?
14. a) Given the advantages you mentioned earlier, do you feel that telecommuting is a better option for you than working full-time in the primary office?
b) Why or why not?

Compatibility

15. a) Do/Did you feel your company's culture supports alternative approaches to work, such as telecommuting?
b) Why or why not?
16. a) What needs or problems do/did you or your employer have that telecommuting was intended to address?
b) Does/Did telecommuting successfully meet the identified needs or resolve problems?
17. a) Do/Did your coworkers in the primary office believe that you work just as hard as they do?
b) Why or why not?
18. a) Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you and/or other employees who telecommute? (For example, teleconferencing you into meetings or directing

other employees to address your questions, whether by e-mail or telephone, as quickly as possible)?

b) If so, what accommodations were made?

Complexity

19. a) Did you require or receive additional technical training when you began telecommuting?

b) If so, in what area?

20. a) Do/Did you feel you need more, less, or about the same level of technical or IT support as employees who work in primary office?

b) Why or why not?

21. a) Has your company implemented additional security measures—such as installing security software (i.e., a firewall) on its host computer system—to maintain the confidentiality of information transmitted to and from employees who telecommute?

b) If so, what steps have they taken?

Trialability

22. In the past two years, have you or your company purchased additional computer equipment that is required for you to telecommute?

23. a) Do/Did you feel you can/could stop telecommuting anytime you want to?

b) Why or why not?

24. Does/Did your company's telecommuting program have a formal structure that governs all employees who telecommute or is/was telecommuting performed informally with little if any structure?

Observability

25. a) Do/Did you feel that some of the time you spend in the primary office is/was required as visual confirmation to management and coworkers that you are a "real" employee?

b) Why or why not?

26. a) On days that you telecommute, how is/was your productivity measured by your immediate supervisor or manager?

b) Is/was the same measure applied to your coworkers in the primary office?

27. a) Do/Did you feel your immediate supervisor or manager values your work as much as employees who work in the primary office?
b) Why or why not?

The Effects of Economic Recession

28. In the wake of the current economic recession, has your workload increased, decreased or stayed about the same?
29. a) Do/Did you feel your employer is more or less inclined to have you telecommute given the economic recession?
b) Why or why not?
30. a) Do you feel more or less inclined to telecommute given the economic recession?
b) Why or why not?

The Effects of the Events of September 11, 2001

31. a) Do/Did you feel your employer is more or less inclined to have you telecommute after the events of September 11, 2001?
b) Why or why not?
32. a) Do/Did you feel more or less inclined to telecommute after the events of September 11, 2001?
b) Why or why not?
33. a) Do/did you have concerns about acts of terrorism being committed at your primary office?
b) Why or why not?
34. a) If the decision to telecommute is/was solely yours, would you want to continue telecommuting?
b) Why or why not?

Addendum B: Summary of Interview Results

Participant 1

Gender: Female

Co-Investigator: **What county do you live in?**

Participant 1: Larimer.

CI: **What type of company did you work for?**

P1: I worked for a company that did digital imaging.

CI: And digital imaging as in scanners, for example.

P1: Scanners, cameras, photo printers. And I worked in the marketing, back end.

CI: I don't.

P1: They split it between customer facing and product development basically. And customer facing is put at the front end, and back end is product development. But I actually pull together content.

CI: Okay. So you did customer facing?

P1: No, I actually did back end. Like when you go to buy something and you look on the box and all the specs. I had to pull all of those together. I had to do a bunch of documents based on those specs that were given to the front end to help in their marketing; to go out for reviews and stuff . . . it kept us busy.

CI: **About how many employees worked at your company, including both full and part-time?**

P1: That's a good question. I'm going to say it was probably more than 500. I'm not sure whether or not there was quite 1000, maybe we'll just go with 500.

CI: Okay, 500+.

P1: Yeah.

CI: **How long were you with the company?**

P1: I was there for two years as a contractor.

CI: **How long have you been a technical writer?**

P1: About 7 to 8 years.

CI: How long did you telecommute during those two years?

P1: Probably at least a year and a half, you know, one to two days a week. And it kind of depended . . . I think probably the first six months I was there I don't think I did that very much, and then, you know, on Fridays if there was nobody there, I was like, well "can I kind of work at home on Friday?" And that's when I got a lot of the actual writing done.

CI: Yeah, okay, well that makes sense. I'm that way, gosh if I can get out of the office I can get a lot more done.

P1: Absolutely. Sometimes you need to be there to get those specifics that you need to have to write, but when you're in a cube environment sometimes it's really difficult to actually write.

CI: How many days per week did you telecommute?

P1: One to two. It was pretty much a solid one and then occasionally I would be like "Can I stay home this day, I've got a lot to do," and I would telecommute with that.

CI: So that means you were probably in the primary office three to four days?

P1: Yes.

CI: Okay. By the way I refer to the office, the company office as the primary office. **Did you work full or part time in the primary office before beginning to telecommute?**

P1: Full time.

CI: What kind of information products did you produce? You told me it was specs.

P1: Yeah, we had a big spreadsheet that all the specs were on that then had to get uploaded into a content management system. I also did technical backgrounders, gosh what did we call them? I've been gone for almost a year now, it's amazing how quickly [you forget]. Um, they sent some things out to press to pre-review, and so what did we call them . . . reviewer guides, that's what those were called. So basically we created tests and steps that the reviewer should go through to get good results and told them different things about different settings. Also did a big Q&A that was used by the front end to answer press questions and pull some of their materials together.

CI: Oh wow, So you actually did some of the pre-PR work.

P1: Yeah. So a lot of that stuff, the reviewer guides and the Q&As went out to the PR company as well. And when they were introducing some new product, [The Company] had to do some special kinds of things around that. So they weren't really backgrounders but they were technical things to help the front end be able to put materials together and

to be able to sell. We did that for a couple of different products, 'cause then they took a scanner, and instead of having a scanner be portrait, they did it landscape so the buttons were all on the long side. Ironically they didn't do any usability testing before they put it on the market, because apparently it didn't go very well. That was released after I left. And I just noticed in the paper yesterday the whole new round of scanners and cameras are starting to come out and they look so different, some of the photo printers look really cool, though, they look really good.

CI: So have they done usability testing?

P1: Yeah, they've done a bunch of marketing. But you know it's one of those things in the economy that's looked at as sort of a bonus, and so they don't really, it's not an integral part of the development which you think it should be. All that usability testing and all that research are some of the first stuff to get cut. . . . So if they had done some better usability testing I think they could have designed products that were a little less technical. It's interesting from an outside perspective.

CI: It sure is. So all the things you did, all of that pretty much falls under the heading of marketing.

P1: Yeah, technical marketing.

CI: **What were the advantages or benefits that you received by telecommuting?**

P1: Just that dedicated time. Uninterrupted, focused time. I could get more done in six hours at home on Friday than I could in three days in the office, you know. So that productivity was really key.

CI: **Are there any advantages or benefits that you *expected* to receive from telecommuting that you didn't?**

P1. No, because it was great to work in my pajamas. No, I think that because I was pretty careful about the days that I picked, they weren't days then when people were really looking for me, and people had my home number and they could call or they could e-mail. I think the one thing that got a little bit frustrating was, and I don't know if this specifically answers this question, and it's more from being a contractor than a telecommuter, I didn't have access into the intranet when I was at home because I wasn't a full employee. You know, when I was at the primary office that was fine, but that external . . . I had to make sure that I e-mailed myself a bunch of stuff or stuck stuff on disks so that I would have everything. But that really is more of a contracting thing than a telecommuting thing.

CI: Yeah, so had you been like a regular employee would you have been granted access?

P1: Yes, there were a lot of people that telecommuted one or two days a week . . .

CI: But had intranet access?

P1: Yeah, they would set them up and they could log into the servers.

CI: When you worked for them were you a contractor, did you work for them?

P1: I got paid through [a temporary service] but I worked on site at [The Company]. Yeah, [temp agency's] involvement in my daily life was beyond minimal.

CI: You pretty much worked for [The Company].

P1: Yeah, you know, my direction, my focus, everything I was told to do came from [The Company], and all I did was submit a time card to this other company.

CI: **What are the disadvantages to telecommuting that you experienced?** That would probably include the intranet?

P1: Yeah, that was really the biggest one, because since I picked Fridays to be my primary day to work at home, you know people worked short hours on Friday or a lot of other people telecommuted on Friday, so it wasn't like I was missing a lot of activity or meetings or anything like that. And even on other days that I would pick if there were meetings there was always a number to call in so it wasn't like I really missed anything.

CI: And if you did telecommute another day, what day were you typically telecommuting?

P1: There wasn't any specific day. It really sort of depended on when the deadlines were because I walked into a job where a girl was working 25 hours a week on two scanner products, and within a month of her being gone I had three scanners and three cameras. And by the time I left, I had 25 products that I had to do. I had this huge matrix that I kept and I framed.

CI: I bet.

P1: You know and I had to color code things by products so that I could kind of, and when things were due, and you know if I had a big bunch of stuff coming up, I'd say a couple of days in advance, "Look here's my schedule and I've got all this, I really need some time, quiet time at home," and they were always really fine with it, so it really varied, there really wasn't any specific day.

CI: Gotcha. Okay. But like, say Friday typically but it varied.

P1: Yeah.

CI: Okay, and I guess the same thing there applies, **are there any disadvantages that you *expected* to experience from telecommuting that you did not experience?**

P1: No, I can't think of, I mean I sort of new up front about the intranet part, and planned around that, so because, you know, I knew about that and could plan for it. . . . No, I can't really think of anything else that came up.

CI: Did telecommuting increase or decrease your satisfaction with your job?

P1: I would say increase.

CI: And could you please explain or describe how it increased?

P1: Because I did have that time away from the noise and chaos that can be in an office. There was one day I didn't have to get in the car and spend all that time [commuting]. And just having a break in that pattern really can be helpful. I could get up and run errands and be back home by 9:00 a.m., and get my errands for the weekend done because nobody was out yet, and then I could focus on what I needed to get done. No, it increased.

CI: Based on what you just said, though, did you have trouble with, you know, like on Friday when 5:00 rolled around did you stop for the weekend?

P1: I typically had stopped before that.

CI: Okay, but you didn't have trouble like on Saturdays or Sundays like, you know, I deferred stuff and I've gotta keep current.

P1: You know, before I worked at [The Company], I worked for a PR firm doing media relations, which was not the right place for me, but everybody worked from home so it was not officially telecommuting. There wasn't that primary office because everybody worked from home, and I had much more problems then keeping the separation between when I needed to be doing work and when I needed to not be doing work. That was more difficult. And I think it was because it was that permanent place, plus I was really not in my element, and I always was feeling like there was something I needed to be doing, because there was something I wasn't doing right.

CI: But you didn't feel that at [The Company] so much?

P1: No. I think it was because, you know, on those days, because I had to plan knowing that I couldn't get in to access my files [at The Primary Office], I had to plan so I knew exactly what I was going to do, and I got it done so much quicker than I would have in the office.

CI: Right, and you weren't so unlimited because once you got through it you would have to go back to the office to get more stuff?

P1: Right, exactly yeah. And if somebody called and said "Hey, let's go for a walk at 3:00." I could say "Well, fine." Then on Saturday I could make up a couple of hours if I didn't get my work done. Because it wasn't like there were people calling me on Friday,

going “Are you still working?” You know, it was very much the honor system, high level of trust, which is not necessarily due to telecommuting but it was the overall way I was treated there.

CI: But I think that does have a big influence on it, I mean I think if people trust you, you feel like “Okay, I can blow off work this morning, but it’s up to me to get it done this afternoon,” or whatever.

P1: Right, because it’s up to me to manage my time and whenever I get the work done, as long as I get it done by the deadline and it’s accurate.

CI: Right good. **Given the advantages you mentioned earlier, do you feel telecommuting is a better option for you than working full time in a primary office?**

P1: I do prefer it, now that I’ve done it. I mean, when I, working here this summer, well it was a little bit different because we were conversing with Germany so I was here at 6:00 in the morning, and I’m not a morning person, but I would bring in my lunch and by 2:30, whew! I was done. You know, I put in my eight hours. Unless we definitely had some times when, you know, we had to put in extra. But having that extra time being able to run the errands when not everybody was out, you know, dealing with traffic, and being on a different schedule than everybody else, I kind of liked that.

CI: Did you? How interesting.

P1: Yeah, that’s what I kind of like about school. It’s like I’m at school for a few hours, then I’m here for a while, then I’m home. On Friday, a girl from school and I just, we taught in the morning, then we took the rest of the day off and went to the mountains. You know it was like, “Ha!” Because you’re kind of playing hooky but not really, because you’ve got to make up that time somewhere else.

CI: You’ve got to make it up somewhere, right, but at least you get the option to do that?

P1: Right. I don’t know if I were here permanently how my supervisor would feel about that, but I would like to have that flexibility. I mean even if it’s because I’m not here 6:30 to 2:30 but one day I could work 7:00 to 3:00, and the next day I could work 9:00 to 6:00 and have that flexibility to be able to work in some of those personal things. Telecommuting helped me balance that.

CI: **Do you feel your company’s culture supports alternative approaches to work such as telecommuting?**

P1: At [The Company] they really did. There were people that would work from home, there were people that would work at home certain days, there were people that would work at home random days, half days. There were people that were in their cars, and you know cell phones doing meetings, so they were very [flexible].

CI: Do you think because they were a high-tech company, they tended to have all the gadgets to make that happen and maybe they were a little more predisposed to it?

P1: Yeah, I think that was part of it. And I think that also, part of [The Company]'s history has been in taking care of the employee. And granted, that has changed with the economy and a lot of other things, and I don't necessarily agree with everything that [the CEO] has done, but keeping that flexibility in there keeps the employees happy. You keep the employees happy you keep them productive. So yeah.

CI: What needs or problems did you or your employer have that telecommuting was intended to address?

P1: I think it's personal flexibility. Let's say I have a doctor's appointment at 2:00, and instead of coming back to [The Primary Office], I'm just going to stay at home and work. And I think they knew that the cube environment can be very loud, and depending upon what your job is it can be very difficult to get things done.

CI: It really can, especially in writing.

P1: And you know, when you've got [a lot of international employees], I mean, what are you're going to do, build a building where everybody has an office with a window? No, you're going to build a building where people have offices but they have no windows? No, so I think you have to build some of that flexibility in.

CI: Did your coworkers in the primary office believe that you worked just as hard as they did?

P1: Most of them told me I worked harder than they did. When somebody's up to 25 products, they were like, "How are you getting all of this done?" I'm like, "Why do you think I'm home on Friday, I mean you guys are great, but I need some space where it's quiet."

CI: Did your company, especially your immediate supervisor or manager, make changes to the primary office routines to accommodate you or other employees who telecommuted? Some examples would be teleconferencing you into the meetings, or directing other employees to address your questions whether by e-mail or telephone as quickly as possible knowing that you weren't physically in the office.

P1: Yes, definitely. If I wanted to work at home one day and there was a meeting, they would always set up phone numbers, because for the most part, not everybody that they needed to have at those meetings was [in the Primary Office] anyway. Depending on what the product was and what was going on, [The Company] pretty much always had a number set up so it didn't really matter where any of us were, we were dialing into that number whether we were sitting at our desk or at home or wherever. I would always set up my out-of-office Outlook. I didn't always put my home phone number on there, select people in the office had it, but I would put my home e-mail address [in the auto reply message] and I got quite a bit of [international] e-mail at home. Because I would put [my

out-of-office message] on when I left Thursday they would be working, which helped because then they didn't have to wait, you know. Sometimes I would start really early on Friday morning I would check my e-mail before I went to run errands and so then I could respond to them and they didn't have to wait then until Monday. So those kinds of things, because the teams were spread out, because [The Company] is an international company, a lot of those things really were already in place. So I don't feel like anything was done specifically for me, or specifically for anybody else, it was like, okay if you're going to be gone, here's all the things that are already in place.

CI: Did you require or receive additional technical training when you began telecommuting?

P1: No.

CI: Did you feel you needed more, less or about the same level of technical or IT support as the employees who worked in the primary office?

P1: Because I was responsible, because I didn't have access into the [Company's] intranet. I really was on my own. It was my personal PC and because I was a contractor [The Company] wouldn't have fixed it, and I didn't ever really have any problems, so I would probably actually say less, because I was kind of doing my own. I was responsible for my own stuff.

CI: Did your company implement additional security measures such as installing security software, firewall on its host computer, to maintain the confidentiality of information transmitted to and from employees who telecommuted?

P1: They definitely did have a firewall, which was why I couldn't get in.

CI: Right, but what about e-mails that you're sending to Germany from your home computer, was there any security that you were supplied to keep that confidential?

P1: No, I mean I had firewall. Because I have a cable modem, I had firewall software myself. But that's actually a really good question because there was never any discussion, like nobody asked me, "Okay, so you're sending e-mails back and forth?" I would even sometimes e-mail myself files, which, gosh, maybe I shouldn't have done.

CI: That could get a little tricky.

P1: Because all of this stuff was about products that were in development, it wasn't about products that were already in the market, you know, it was fairly confidential, you didn't want Kodak or Cannon or whoever to get a hold of that.

CI: You've got specs you're sending back and forth.

P1: Gosh, now that I'm thinking about it, that could have been [a problem]. I guess they trusted me . . .

CI: Yeah, I'm actually from [The Company] and I'm investigating past employees.
(Laughs)

P1: Great. (Laughs)

CI: In the past two years did you or your company purchase additional computer equipment that was required for you to telecommute?

P1: No.

CI: Did you feel you could stop telecommuting anytime you wanted to?

P1: Yeah, I mean, that was pretty much understood. I remember I came in on the last Friday of my employment, and they were like "Why are you here on a Friday?" And I'm like, "Because I haven't been here on a Friday in a year and a half. It was my last one, I thought I might as well come in and grace you all with my presence."

CI: Of course it caused more of a stir, you should have just stayed home and e-mailed everybody, "Hey, this is my last day!"

P1: Yeah, exactly. Well, actually, they had already cut off my e-mail though.

CI: So you had to come in.

P1: Yeah, I did.

CI: Did your company's telecommuting program have a formal structure that governed all employees that telecommuted or was the telecommuting performed informally with little, if any, structure?

P1: I think for actual employees because they were typically issued laptops that had stuff set up that helped them get access into the internet, and log on if they were traveling and things like that. I'm sure probably out on the portal there was a list of do's and don'ts and things, but as a contractor there wasn't anything specific that I was given or told. Again, I think it was kind of that trust thing.

CI: Yeah, it's funny, you would almost think it would be the reverse, that they would have, you know, they might let it go informally internally, but with contractors, really?

P1: Yeah, that they would even let me leave with files. Now that I think about that, it's like hmmm, I mean they had a lot of trust in me, because I could have been making a whole lot of bucks on the side, going "Hey, Cannon." Which, I couldn't live with myself, but you know . . .

CI: Do you feel that some of the time you spent in the primary office was required as a visual confirmation to management and coworkers that you were a "real" employee?

P1: I guess not specifically, you know, the time that I spent there was necessarily to talk to the people I needed to talk to, to get the information that I needed to get.

CI: Whether you were doing it there or over the phone.

P1: And sometimes you could get that over the phone, you know, but it was better in person.

CI: It was just better to get information in person?

P1: Yeah.

CI: On days that you telecommuted how was your productivity measured by your immediate supervisor or manager?

P1: Well they definitely knew I was getting stuff done, I mean they knew things were done on time.

CI: Yeah, you were sending things to them.

P1: Yeah, well and not all of my . . . it was an interesting setup, I was on a team where I was really the only one doing what I did. Everybody else was doing a lot of future, long range planning or trade show planning, so my deliverables went out to like the front end groups around the world, to the content management people in Boise. So, while I reported here, those were the people who were most concerned about my deliverables, and the timeliness of my deliverables, and so my manager and supervisor would hear if something was late, but they never heard because everything was always on time. I remember having a review with [my manager] who said, "You're stellar because I never hear anything about you. I know you're getting stuff done because I know these people you work for and they would be bitching up a storm if your stuff wasn't on time." So it was like the no news is good news kind of thing. And he felt bad because he had people who really needed a lot of his direct supervision and time and I got very little. But I would say, "I will call you if I need something, so no news, good news, if things are

going along smoothly, even if chaotically, you won't hear from me. If I have a concern you'll know about it." And if I had something, he would get back to me immediately, because he knew, "Okay, this is important because she actually contacted me."

CI: So it sounds like for the second part of this question—which is: **Was the same measure applied to your coworkers in the primary office?**—that getting things done was kind of the rule of the day.

P1: It was. And I would say for the most part, at least in the team I worked in, you know it was pretty much you were treated as an adult and you were expected to get your work done and if you had concerns you brought them up and tried to get them addressed as soon as possible, but other than that just get your stuff done and everything was great.

CI: Did you feel your immediate supervisor or manager valued your work as much as employees who worked in the primary office?

P1: Yes.

CI: And it also sounds like, too, there were a lot of other people who telecommuted, so it wasn't like you were like some isolated case.

P1: Right. [My] manager was [resided in another country]. I had [an immediate] supervisor . . . for daily issues that I went to in [the local office]; there were probably five other people in [the local office] that reported to him. He had [a manager in another state, and], he had somebody . . . you know, and everybody was kind of home some days, and in the office some days.

CI: So people were kind of all over the place.

P1: Yeah, exactly. He traveled so much, in fact, he was in [The Primary Office] on September 11 as were a couple of other [out-of-state] people . . . who rented a car [after the attacks] and drove home.

CI: Wow.

P1: I mean, all planes were grounded, you know, but [The Company] was like, "All travel is completely halted, wherever you are that's where you've got to stay." [But those employees] were like, "we want to go home." And so they rented a car and drove home, they drove straight through. Because there were like three or four of them so they would just take turns driving.

CI: Any idea how long it took them?

P1: Gosh, . . . [probably] like 20 hours.

CI: So 20 or 24, a long way to go home.

P1: But I don't blame them, if I were away I would want to be home too. They're like, "we're not taking a bus."

CI: Yeah, it's not like they were stuck here because of, like, a natural disaster.

P1: Yeah, they were here for meetings, and they just cut the meeting short.

CI: They just wanted to get home. So, that's actually a good segue into this, the next thing is economic recession, but September 11 is on this page. **In the wake of the current economic recession, did your workload increase, decrease or stay about the same?**

P1: You know, during the two years I was with [The Company] my workload significantly increased, and I don't know that that was specifically because of the economic, because things weren't, you know, all the way bad when I was there. But I think they found somebody who was organized and could get things done, so just keep putting things on my plate, until I finally had to raise the flag and go, "whoa, okay, too much. Can't do it, wish I could, but can't." And actually this is the second job that I've left that has taken two people to replace me. And I am going to put that on my resume. How do you work that in?

CI: Exactly, I know what you mean, "I did the work of four other people." But now it sounds like, too, you said there was somebody who left while you were there and you sort of got their workload.

P1: I was replacing her, she was going on maternity leave, she was another contractor. She was having a baby and decided she didn't want to come back after the baby. But she was working 25 hours a week, she had two products, and within a month of her leaving, you know . . .

CI: You inherited both those.

P1: Yeah, plus then cameras came on board and then we had photo printers.

CI: Just out of curiosity, I mean, what, was it because people were being laid off and things had gotten tight that they weren't willing to hire more people to help you?

P1: No, actually I think part of what happened was, they had three separate groups, one each for cameras, scanners and photo printers, and then they merged the camera and scanner groups together. I don't know who had been collecting the data for the cameras previously but they just decided that this position should. And then when the photo printer group merged with the woman who was doing their launch activities and all of these things as well, and she was working 70 hours a week and going crazy. And so they said, "Well, let's have you do this." And then I said, "okay, time out." And actually the thing that was good was that Steve was a really good liaison then to her engineers, because they were all in San Diego, so I couldn't just walk up to them like I could, so I would write everything through her, so I took a bunch of work off of her but she said it worked really well with me to try to keep that happening. So it wasn't so much that people were leaving is that [The Company] is in a constant state of reorganization so they would just keep shuffling things. And it was interesting, when reorgs and layoffs came, I was the only one that got more stuff. But my [workload] didn't change dramatically.

CI: Right, okay. **Do you feel *your employer* was more or less inclined to have you telecommute given the economic recession?**

P1: Um, I don't know if that really factored into it much at all. I don't think that was really a concern.

CI: **Do *you* feel more or less inclined to telecommute given the economic recession?**

P1: Not specifically. I mean, you know, it was nice to have a day or two a week where I wasn't putting a bunch of gas in the car, but that's, you know, I was making very reasonable money out there so that wasn't really a big factor to me.

CI: Do you feel *your employer* was more or less inclined to have you telecommute after the events of September 11?

P1: Hmmm. I don't think that really impacted my stuff at all, and I'm just trying to think of what I saw in other people.

CI: Like the group of employees who drove home.

P1: Yeah, I mean, you know, because travel virtually came to a standstill for a couple of months, you know, I think that people traveled a lot internationally, and they couldn't take those trips so they would have to have conference calls or do whatever, which meant adjusting hours. And, you know, if you have to be on a conference call to Singapore at 8:00 at night your time, well, you don't really need to be in [The Primary Office]. You know, you should be able to be at home. So I think for a lot of people there was an even higher degree of understanding of flexibility. But it just didn't directly impact me.

CI: But it sounds like that the 8:00 at night phone call would probably have been par for the course before September 11.

P1: It probably would have [occurred] I just think there were more of them than there were before, because people couldn't make those trips and see them in person, so there were more phone calls. My dad works for a conferencing center down in Denver and he said yeah, after that.

CI: It just went gangbusters?

P1: Yeah, and then it's kind of really tapered off again because people don't have money for that now.

CI: Great.

P1: Yeah, it's fabulous all the way around.

CI: Did *you* feel more or less inclined to telecommute after the events of September 11?

P1: You know I don't, I know that the day of, it was kind of, I had gone away for that weekend, and I had just come back the night before, and was going to relax, be casual, and I was going to watch a little TV before I went into work. Wrong thing to do because there it was. I felt an immediate need to be at work. Because I live alone, I think, I felt a need to be around people. [I went into The Primary Office but] it was not a productive day, by any stretch of the imagination, for anyone. They had TVs set up in conference rooms and that's where people were, and by about 3:00 or 3:30 almost everybody was

gone. But I still had stuff that had to get done. I don't really remember it making me want to be home more or less.

CI: So just the day of September 11 you were far more inclined to be at the office with other people?

P1: Yeah, and it was amazing; there were a lot of people in the office that day. There were those meetings, there were the people in, you know like my boss was in and there were some people here from other places, because they had these scheduled meetings.

CI: So they had to be there anyway.

P1: Yeah, so there were a lot of people in the office. It was an interesting day.

CI: Do you have concerns about acts of terrorism being committed at your primary office?

P1: No. But I remember people talking about it. We saw the mail person delivering the mail wearing gloves, because it was right after that there was the small pox [scare].

CI: The whole anthrax scare?

P1: Yeah. And I was like "well, this is [a large corporation], and if terrorists were targeting large corporations, . . . if I were that mail person, I probably would do the same thing." You know, but we made cameras, scanners, photo printers, where's the terrorist threat there? But no, I didn't specifically feel [concerned about acts of terrorism].

CI: If the decision to telecommute was solely yours, would you want to telecommute again?

P1: I would but I think it would not be full time. I think I would want to work part time in the office; that's how you build up rapport with people to get, so that when you need something you can get what you need. And I think having been at home [with my previous job] for seven months and having feedback only over the phone, that I was tired of being on, that I needed some face-to-face to kind of just break up the day.

CI: Is there anything else you'd like to add?

P1: I can't think of anything.

CI: In terms of telecommuting or September 11, or the recession, how's any of that's playing out for you?

P1: Being the poor graduate student?

CI: Right.

P1: Because I mean, they had told me with the economy that they were like, well, as a contractor you have to leave, you have to take at least a three month break after two years. It's a very interesting Microsoft story. They had a lot of contractors and someone worked on a lot of projects. The real employees were getting bonuses and all sorts of stuff because of this and the contractors were not, one of the contractors sued Microsoft and won because that person had been there for like for seven years. So there was an appearance that they were a full time employee, and Microsoft had to pay them and a bunch of other contractors that worked on this project. So now after two years you have to be gone for three months. Some other companies have gone to one year on and six months off, which means you're never going to get that person back, because nobody can sit around for six months.

CI: Yeah, six months could be pushing it.

P1: Yeah, luckily you could get unemployment.

CI: Oh, would you?

P1: Yeah, but it's a percentage of a percentage and so on.

CI: It's not like you could live on it.

P1: Yeah, not for very long. But so they had told me that with the way things were set up there they were not going to be able to offer a full time permanent position and because of the way things were structured they didn't feel comfortable bringing somebody in for three months and then telling them okay after three months you have to leave because we're bringing this other person back. Just based on, and that makes sense, because with the cycle of products and everything, once you gather that information you've got to keep building on it, instead of, because you can't pass it off really.

CI: I'm sure you can't.

P1: "Here's all the information I learned in six months of meetings." It just doesn't [work that way]. So I was unemployed for seven and a half months while going to school. I couldn't even get an interview. And I don't know if it's because people saw that I was in school or what? But I was like "Okay, highly employable over here."

CI: Exactly.

P1: And yeah, so this was like, I think this was my second interview . . . I had an interview out at [The Company] . . . it was just like a summer thing.

Participant 2

Gender: Male

Co-Investigator: **What county do you live in?**

Participant 2: Larimer.

CI: **What type of company do you work for?**

P2: I work for [The Company], which we do software development. We have a local office.

CI: **About how many employees work at your company? And let's just say that office.**

P2: I think we've got about 25, 20 to 25.

CI: **How long have you been with the company?**

P2: I knew you were going to ask that. It's been five and a half years, as an employee, I contracted with them three years prior, so . . . like eight and a half years total.

CI: **How long have you been a technical writer?**

P2: Since 1990, so that's 12 years.

CI: Or 13.

P2: Oh, right 13, exactly. Yeah, and before that, about three or four years, but it wasn't technical writing, it was out in California [with Another Company] doing procedural kind of stuff like administrative bulletins, but it wasn't really technical.

CI: They were a big employer, right?

P2: Yeah, yeah, that was back in the heyday when things were really jumping in the industry.

CI: Well, I think those days are going to be coming back.

P2: That's true, that's true.

CI: **How long have you telecommuted?**

P2: Just about a month. It started this school year at the end of August.

CI: Is that why you started, because of school?

P2: Yeah, it's related to school.

CI: Your school or a child's school?

P2: A child's school. I'm home schooling my son, and he's actually in a back room now doing his school work and so this permits me to be around him one day a week and another day a week I take him in to work with me. And the other days my wife is home, so that way he's covered and he's not left to himself. So that's really my main reason for doing it.

CI: Good deal. **So, how many days per week do you telecommute?**

P2: Just one

CI: **And how many days per week are you in the primary office?** Obviously that would be four.

P2: Four.

CI: **Did you work full or part time in the primary office—the primary office being the local one—before you began to telecommute?**

P2: Full time.

CI: **What kind of information or products do you produce?**

P2: I do is all the user documentation, on-line help, and installation guides for industrial process control software.

CI: It sounds like it's production type equipment?

P2: Yeah, it's for equipment related to process control like refineries and pharmaceutical companies and things like that, anything that's got equipment that has to do with prolonging the life of your plant equipment is what our software does, it kind of lets you know when things are starting to go wrong.

CI: Oh, interesting. So there are like sensors that you have placed inside the equipment?

P2: Exactly, yeah, gather data and our software analyzes the data and alerts people when symptoms start to develop so that way they're not changing out their equipment on a preventative maintenance kind of thing, where like every two years we replace this pump, and it's not reactive where when something goes wrong you replace it. So it's like predictive maintenance where you're getting the longest life out of your equipment.

CI: Right if you just assign yourself to a maintenance schedule you may be replacing things that are perfectly good.

P2: Exactly.

CI: **What are the advantages or benefits you receive from telecommuting?**

P2: Well, being home with my son is the biggie. And it's fair to say less interruptions. Sometimes that's true, sometimes I get interruptions here too, but different kinds, you know, so it's basically quieter, quieter work environment.

CI: **Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not received?**

P2. No, I can't think of anything.

CI: **What are the disadvantages to telecommuting that you have experienced?**

P2: Well, like just today, file transfer time. And I've got a 56K modem, so there's that wait periods for data transfer. Other than that, I mean communication is good, we use MSN Messenger to . . . you know, I was talking with my boss earlier this morning, and we use that within the office and then when people are at home as well so it kind of keeps you connected.

CI: I'm not really sure what that is.

P2: Oh, it's just like a chat kind of thing, like an Internet based, real time.

CI: So you can have real time conversations.

P2: Yeah. It's funny, even people in the office that can be 10 feet away, and they're sending messages rather than getting up out of their chair. So, really, being home isn't that much different from the way we communicate in that office. Oh let's see, disadvantages to, I've got another one, as far as just personal interaction, like if I have questions, that I need to see something, there's the disadvantage of not having the personal connection.

CI: **Were there any disadvantages you *expected* to experience from telecommuting that haven't materialized?** Things that you thought were going to be negative that didn't turn out to be.

P2: No, I've been really happy with it, I can't think of anything.

CI: **Does telecommuting increase or decrease your satisfaction with your job?**

P2: I'd say it increases it.

CI: And if you could describe it, it would be how?

P2: I just feel really fortunate to be able to do that and having a boss that's willing to work with me knowing my needs and, you know, just being able to help us out like that, and so . . . what was your question again?

CI: Just, ah, you described the things that you said caused it to increase your job satisfaction.

P2: Yeah, that's it I guess.

CI: Given the advantages you mentioned earlier, basically being home to home school and no interruptions, do you feel that telecommuting is a better option for you than working full time in the primary office?

P2: Yes.

CI: Do you feel your company's culture supports alternative approaches to work such as telecommuting?

P2: Yes, definitely. We have one of our programmers we were talking to yesterday over the internet, and he's in Minneapolis, and he's like our head programmer so, you know, they're pretty friendly to alternative work. There are several people in the office who telecommute. Most people in the office telecommute for personal reasons. One woman is a soccer mom and it's easier for her to work from home.

CI: That's good. What needs or problems did you or your employer have that telecommuting was intended to address?

P2: Just my need to be at home one day a week.

CI: Do your coworkers in the primary office believe that you work just as hard as they do?

P2: All the time or when I'm telecommuting?

CI: When you're telecommuting. Is the perception that you're working just as hard as they are?

P2: I don't know, I think there's some skepticism. I don't know about me personally, but, you know, comments are made sometimes like when somebody's not available and they kind of wonder what he's doing and that kind of thing. Like sometimes a programmer in Minneapolis is working and he's got a ranch and sometimes he's out baling hay or something like that, you know, so, but we have a pretty flexible work schedule, you know, so I don't know, as far as what people think, I think they just assume the best.

CI: That's good. Well it sounds like since there are other technical writers that are telecommuting that it's . . .

P2: It's pretty accepted and I think that people don't really think about it all that much because of being able to get hold of each other over the internet.

CI: That makes things a little easier.

P2: Yeah.

CI: Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other employees who telecommute? For example, teleconferencing you into meetings or directing other employees to address your questions whether by e-mail or telephone as quickly as possible, knowing that you're not just down the hall.

P2: I haven't been involved in any teleconferences when I work at home. Usually, like for meetings and things, I'll try to schedule those when I know I'm at the office to avoid that happening. I mean, we do, some of the other people like the guy in Minneapolis, we do pull him into teleconferences a lot because he's always there, he's never in our office. But for me personally, I wouldn't say that they adjusted anything because of my telecommuting.

CI: Did you require or receive additional technical training when you began telecommuting? In transferring files, for example.

P2: No.

CI: Do you feel you need more, less or about the same level of IT support when you are at home? As compared to employees here working full time in the office.

P2: I think probably the same. Well, let's see. Yeah, I guess the same. Sometimes I get locked out of the system and I have to call a support number, which they are given the same thing at the office.

CI: Has your company implemented additional security measures such as installing security software such as firewalls on its host computer system to maintain the confidentiality of information transferred to and from employees who telecommute?

P2: I don't know the answer to that. We have firewalls. I don't know if it's specifically related to telecommuting employees.

CI: In the past two years have you or your company purchased additional computer equipment that is required for you to telecommute? In your case in the past month, have they purchased anything for you to allow you to telecommute?

P2: No, I have a laptop which is what I use so I got that within the two years but, yeah, I don't know how I would have been able to do it without it, but they didn't buy anything since I already had that, there was nothing special they had to buy.

CI: But had you not had it, would they have issued one to allow you to telecommute?

P2: I think so, I think they would have.

CI: Just out of curiosity, for example, I work just on a desktop that just has a tower, so I don't have a laptop. What would you need a laptop for at the office, just to allow you to bring things home, was that the idea?

P2: I think that was it, yeah, they've actually switched pretty much everybody over to the laptop system. They've got a contract with Dell and they've redone everybody's computers into laptops for the most part and all of the development people in engineering which is the department I work in, and so I think it was to provide, well not only telecommuting, but travel when you're going to an off-site place to be able to take your work with you. Let's see, what else? Meetings, you know, sometimes taking them with you to a meeting.

CI: Right. It sounds like it's just a good thing.

P2: Yeah, I think they probably figure they get more work out of you if they give you a laptop which I think has probably worked to their advantage.

CI: Right, right. And just like say it also saves you if you do want to go on a trip you don't have to go check out a laptop and load stuff onto it, you just grab it and go.

P2: Yeah.

CI: **Do you feel you can stop telecommuting anytime you want to?** So, if you were to say for example, "Hey, I think we can just put our son in a charter school and go back to the office full time," your employer would say "Fine"?

P2: Oh, yeah.

CI: You're not in some situation where you're going to have to telecommute now that you agreed to do so?

P2: No.

CI: **Does your company's telecommuting program have a formal structure that governs all employees who telecommute or an informal structure?**

P2: Informal.

CI: So there's really not very many rules if you will about how it's done, if this guy is out baling hay, I guess . . .

P2: Yeah. We got another engineer who is, he's got some back problems and he's been out of the office for at least a month now and so he's just working at home, probably

laying in bed or something. So, like I say my boss is pretty easy going about that fortunately.

CI: Yeah it is fortunate. **Do you feel that some of the time you spend in the primary office is required as a visual confirmation to management and employees that are a “real” employee?**

P2: I would say yes, I mean, especially if I were to be telecommuting more that would be more important.

CI: But given the fact that you only telecommute one day a week, is that not as much of a factor?

P2. No, no.

CI: **And on days that you telecommute how does your immediate supervisor or manager measure your productivity?**

P2: I don't know that there's any measurement in place for that. Usually he communicates with me for one thing or another, you know, he might ask me for something, so that might be his way of just checking on me or something.

CI: But he'd do that in the office too?

P2: Yeah.

CI: So he just wants you to give it to him, he's not really checking up on you?

P2: Yeah, I think as long as the work gets done he doesn't really seem to care how it gets done.

CI: **Is the same measure applied to your coworkers in the primary office?**

P2: Yes.

CI: **Do you feel your immediate supervisor or manager values your work as much as that of employees working full time in the primary office?**

P2: Yes.

CI: **In the wake of the current economic recession, has your workload increased, decreased or stayed about the same?**

P2: Oh, I guess it's stayed about the same.

CI: Okay, so it's not like you've had a huge round of layoffs or something that also increased your workload or something.

P2: No, I've always been the only one doing what I do, so . . .

CI: I know what that feels like.

P2: Yeah, so I don't think, you know, nothing's really changed. We sometimes have aggressive schedules and, you know, there's lulls as we're in the development mode, you know, so I don't see a change related to that.

CI: Okay. **Do you feel *your employer* is more or less inclined to have you telecommute given the economic recession?**

P2: I don't think either one, you know, probably indifferent. I don't see a push one way or the other.

CI: Okay. **Do *you* feel more or less inclined to telecommute given the economic recession or is that even a factor?**

P2: It's not really a factor for me. You said it could be something like trying to save on gas money or something like that?

CI: Conceivably, right, exactly.

P2: Yeah, I mean if gas prices went up to \$5 a gallon I would probably opt to be home more often. Probably a lot of people in our office would.

CI: Right. Obviously your motivation in telecommuting is a little different so that changes things.

P2: Right.

CI: **Do you feel *your employer* is more or less inclined to have you telecommute since September 11, or is it even a factor?**

P2: I don't think there is a factor there.

CI: **Do you feel more or less inclined to telecommute since September 11?**

P2: I don't have a relationship there.

CI: **Do you have concerns about acts of terrorism being committed in your primary office?**

P2: No.

CI: **If the decision to telecommute was solely yours would you continue to telecommute?**

P2: Yes.

CI: And obviously the reasoning is just because you obviously and take care of your son. That's it.

P2: Yes.

After interview taping ended, the participant made this comment:

“With respect to national tragedies and home schooling, I think that the Columbine High School shootings might have more impact on working parents’ desire to telecommute out of concern for the safety of their children in public schools.”

(The participant’s motivation to home school his son is to give him a Christian perspective on the world that he won’t get in public schools.)

Participant 3

Gender: Female

Co-Investigator: **What county do you reside in?**

Participant 3: Larimer.

CI: **What type of company do you work for?**

P3: I work for [The Company] which is a global IT services company.

CI: Okay. More specifically is that software development or is it hardware?

P3: It does an awful lot of things. There are divisions that do all kinds of things; it's hard to briefly describe what [The Company] does.

CI: But it's all high-tech?

P3: Yes, it's all high-tech.

CI: I know that's a really broad generalization, but there are some more questions I have that will maybe help narrow it down a little bit. **About how many employees work in your company including full and part time? Let's just talk about the primary office you work out of, which is not your home.**

P3: Let's say there are about 50 people in my particular group.

CI: Where is the rest of your group?

P3: Most of them are in [Another City and State], but there are others like me scattered around the country.

CI: Okay, interesting. And you have been to the primary office haven't you?

P3: Yes.

CI: So you know a lot of these people by face.

P3: Yes.

CI: **How long have you been with the company?**

P3: Since 1998, so a little over five years.

CI: **How long have you been a technical writer?**

P3: About 13 years.

CI: Wow. **How long have you telecommuted?**

P3: Five years.

CI: Okay. **How many days per week do you telecommute?**

P3: All five. Sometimes seven, but not very often, fortunately.

CI: Actually the next question, which I think answers itself now, is how many days per week are you in the primary office?

P3: Zero days a week.

CI: Just out of curiosity, how many days say a year are you in [The Primary Office]?

P3: The last couple of years I haven't gone at all.

CI: That's amazing. **Did you work full or part time in the primary office before beginning to telecommute?**

P3: I was hired to telecommute, so . . .

CI: Zero?

P3: Zero.

CI: Okay. **What kind of information products do you produce?**

P3: We typically work on products that have to do with training. Oftentimes it's training on a new computer software system that people need to use, sometimes it's HR, sometimes, it's strictly how to use a computer application, it varies a lot by project.

CI: Okay, but is it e-learning?

P3: Oftentimes, yes.

CI: So is it mostly help systems and manuals?

P3: Help systems.

CI: And manuals?

P3: Yes. We don't do a lot of paper-based training anymore, most of it's Web-based training these days. Which I think is both good and bad.

CI: Not that it's part of my study, but just out of curiosity what's good and bad about web based?

P3: I think it's good because it's easier and faster to update and it's all on-line, but I know a lot of people like me really like to hold a book or manual and look things up physically.

CI: That's interesting. **What are the advantages or benefits you receive by telecommuting?**

P3: Oh, lots. Let's see . . . no commute time. I don't have to bring my lunch; I can just go downstairs to the kitchen and make it. If anybody needs to come work on the house or yard, I'm home and I can let them in, don't have to arrange a time to leave work to do that. If I do need to work extra hours it's a whole lot nicer to work extra hours at home than in the office. Obviously, the dog and now the baby will appreciate it. Um, as far as distractions go, I mean obviously there are distractions in the office and at home so I don't, I think it's pretty much a wash there, but you have more control over your distractions when you're at home. People from the next cube can't just pop in, they have to call you.

CI: And the second part of this question is, **Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not received?**

P3: That's an interesting question. I can't think of any. Really it's worked out much better than I expected.

CI: **What are the disadvantages to telecommuting that you experience?**

P3: People who work in the office are not as aware of you and don't always think of you first to do something, so I think I tend to be left out of certain things. And there are some clients who really are uncomfortable with remote workers, and really resistant.

CI: Excuse me?

P3: Are really resistant to having remote workers.

CI: Right, but can you give me an example of a client, I mean it's like you're being basically hired to work?

P3: Yes, a lot of our projects are for external clients, so it's not strictly within [The Company].

CI: So basically they have to be able to come to the primary office to see everybody.

P3: No they aren't necessarily in [The Primary Office].

CI: Right, but I'm saying that would be their goal, they would like to be able to go to just one location and meet the entire staff.

P3: Or have the entire staff come to their site.

CI: Right, but they don't like the idea of going there and then having half the people working on their project not there.

P3: Right.

CI: Interesting. **Are there any disadvantages that you *expected* to experience from telecommuting that you didn't?**

P3: I thought it would be much harder to relate to people than it has been. I communicate with a lot of my team members on a regular basis by phone and e-mail, and I don't feel as isolated as I thought I would. But it does take extra effort.

CI: The communication part?

P3: Yes.

CI: **Does telecommuting increase or decrease your satisfaction with your job?**

P3: Increase.

CI: And could you elaborate maybe on why you feel it increases your job, your satisfaction with your job?

P3: I think because of all the advantages I mentioned about working at home, telecommuting makes me a lot happier as an employee. And I did work on a project where I had to commute to Denver once a week and that was just awful.

CI: Even though it was only once a week?

P3: Even though it was just once a week and maybe because it was just once a week I never really got used to it but the next day I was always so tired that it really affected my productivity.

CI: Wow, just going for that one day.

P3: Yes. Granted, I hate driving to Denver, that's part of the problem. All that traffic, gosh.

CI: That's not a pleasant experience.

P3: No.

CI: Given the advantages you mentioned earlier do you feel that telecommuting is a better option for you than working full time in the primary office?

P3: Yes I do.

CI: Do you feel your company's culture supports alternative approaches to work such as telecommuting?

P3: Mostly. There are some groups within [The Company] that are also resistant to working with remote workers.

CI: Oh, interesting, but your group is good about it.

P3: Yes, my group is wonderful.

CI: What needs or problems did you or your employer have that telecommuting was intended to address? If they were looking for somebody who was a full-time telecommuter?

P3: Certainly office space is always an issue for employers. And at the time I was hired they were pretty tight.

CI: They were really looking for someone to telecommute when they hired you?

P3: I think it was more of a case that they were looking for people to really fit into their team and it didn't matter if I was on site or telecommuting. It wasn't that they were specifically looking for telecommuters.

CI: Right, but they understood when they hired you that it was going to be full-time telecommuter?

P3: Yeah.

CI: And they were like, that's fine.

P3: Yep.

CI: Do your coworkers at your primary office believe that you work just as hard as they do?

P3: Yes.

CI: Okay. Is it because they work with other off-site folks, or is it the fact that they just see work product or they just know you're working as hard as they are.

P3: I think it's that they see the work product.

CI: Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other employees who telecommute? For example, teleconferencing you into meetings or directing other employees to address your questions by e-mail or telephone as soon as possible?

P3: Yes. Teleconferencing is a big thing. And sometimes people are good about remembering to say their name before they start talking and sometimes they're not. It's really hard at big team meetings when you can't always pick out people's voices. Although it's amazing how fast I got used to recognizing different voices over the phone.

CI: And obviously that's sort of a necessity if you have off-site people to teleconference, but is that something you feel like that they adjusted their routines for you?

P3: Sometimes the time zone issue makes us adjust meeting times because sometimes we have people on the same team in all four time zones. And they try to find good times for all of them but sometimes it's pretty early for the people out in California.

CI: Did you require or receive additional technical training when you began telecommuting?

P3: Additional?

CI: In terms of like how to telecommute or like how to maybe use certain applications that allowed you to telecommute.

P3: Not really. No.

CI: Do you feel you need more, less or about the same level of technical or IT support as employees who work in the primary office?

P3: Same.

CI: And is it primarily because you are for the most part all using essentially the same systems?

P3: Yes. I have a few more problems with remote connectivity, but then I don't have problems with their network printers, so it kind of evens out in the end, I think.

CI: Okay, that's a good point. That's one way to look at it. **Has your company implemented additional security measures such as installing security software, firewalls, for example, to maintain the confidentiality of information transmitted to and from employees who telecommute?**

P3: Yes, we have to use Zone Alarm.

CI: Zone Alarm? Is that a firewall?

P3: It's a firewall, and that's something that I need that people who work in the office don't.

CI: In the past two years have you or your company purchased additional computer equipment that is required for you to telecommute?

P3: I get the same computer that everybody else gets.

CI: Okay. Did you get yours from them?

P3: Yes, they provide the whole computer setup.

CI: Do you feel you could stop telecommuting any time you want? That's kind of tricky question since you telecommute full time, which is sort of like saying, "I quit," right?

P3: Not really, but not without moving to one of several other states. But I'm sure the company wouldn't have a problem with [me not telecommuting]. I'm not barred from an office.

CI: Does your company's telecommuting program have a formal structure that governs all employees that telecommute or an informal structure?

P3: A little of both. We do have a work-at-home agreement, but I think the specifics of everybody's setup varies.

CI: What sorts of things does the work-at-home agreement define?

P3: It has things on there saying that you will spend working hours working, you won't, you know, exploit company's resources by spending the day surfing the net or something.

CI: Okay, but when you say people individually apply it what do you mean?

P3: I mean . . . let's see, what do I mean by that? For example some of us have cable modem, some of us have DSL, some of us have just a strict phone line so the individual computer setups may vary. And also depending on your job code . . . if you do a lot of graphic design you'll get a different computer with more high-powered graphics program on it.

CI: So that's kind of what you maybe consider sort of the informal side, that sort of thing is not specified.

P3: Right. And hours also are not specified, it's more flexible than that.

CI: So you don't have to be sitting at your computer like from 8:00 in the morning until 5:00 in the afternoon?

P3: Well I need to be there at some certain regular period, but it doesn't have to be 8:00 to 5:00 for everyone, like mine might be 7:30 to 4:30, a late riser might be 9:00 to 6:00, so it's flexible that way.

CI: Okay, so could you do something like 10:00 to 7:00 or something?

P3: Yes as long as your particular project didn't have meetings, not during your working hours, I mean you'd still have to go to your meetings.

CI: Yeah, but if you were a night owl—you really liked working at 2:00 in the morning?

P3: You could.

CI: That's good. **Do you feel that some of the time you spend in the primary office is required as a visual confirmation to management and coworkers that you are a "real" employee?**

P3: It doesn't apply, they don't make me go very often.

CI: **On days that you telecommute, which is every day, how does your immediate supervisor or manager measure your productivity?**

P3: I guess [my productivity is evaluated] mainly through feedback from my team members and my clients, and it's definitely not on a daily basis. I mean I may not talk to my immediate manager, weeks could go by and I may not talk to my immediate manager just because we are so project oriented.

CI: **And in that sense is the same measure applied to coworkers in the primary office?**

P3: Yes.

CI: **Do you feel your immediate supervisor or manager values your work as much as that of the employees working full time in the primary office?**

P3: Yes, definitely.

CI: Is it because basically the criteria are the same? I mean, it's get the work done kind of environment.

P3: Yep, get the work done and make the client happy, and as long as you do that you're okay. And we do have formal feedback systems, you know, peer review and all that.

CI: **In the wake of the current economic recession, has your workload increased, decreased or stayed about the same?**

P3: It's decreased, but it is decreased for the whole company not just for the remote workers.

CI: **Do you feel *your employer* is more or less inclined to have you telecommute due to the economic recession?**

P3: I don't think [my telecommuting is] affected, because from the company's point of view it's not more expensive to have telecommuters.

CI: **Do *you* feel more or less inclined to telecommute during an economic recession?**

P3: I don't think it affects the way I feel about it either.

CI: **Do you feel *your employer* is more or less inclined to have you telecommute after the events of September 11?**

P3: I don't think that's affected it either. I can't think of how it would have.

CI: **Do *you* feel more or less inclined to telecommute after the events of September 11? Since you are staying at home and not commuting by car, are things like that of more value to you now than they were prior to September 11?**

P3: I don't think so. It might be different if I lived in a huge city. But here, maybe I'm stupid, but I don't feel as threatened as maybe I would if I lived in a big city.

CI: **Do you have concerns about acts of terrorism being committed at your primary office? In your case it would be your primary office.**

P3: Not that I think about.

CI: **If the decision to telecommute was solely yours would you want to continue telecommuting?**

P3: Absolutely. I don't ever want to work in an office again. It's not that I'm antisocial, I just really like working from home.

CI: Yeah, the little bit of time that I've telecommuted it's one thing, you know having a child, that's kind of prevented me from working at home as much as I'd like. I can usually get more done in two hours at home than sometimes in a whole day in the office.

P3: Especially if you do have a lot of intrusive coworkers who just like to come and talk to you.

CI: Right, and especially, too, if the kind of work you do is writing where you really need to . . .

P3: Concentrate.

CI: Concentrate and if that keeps getting interrupted that just makes trying to write something really difficult.

P3: Yes it does.

CI: **Any other comments you have about your work situation that I didn't address?** Or just thoughts about telecommuting you'd like to offer.

P3: I just think that it is, for people who have a temperament that can do it, it's very effective.

CI: In terms of producing work and effective for their personal lives.

P3: Yes, and that it can actually be a better situation than working in an office. But I also think that there are some people who just could not do it and wouldn't want to.

CI: I have a friend of mine who actually likes going to an office every day, he feels like that gets him in that whole work thing and to stay home he would just counter his ability to work. So I think you're right. And by the way, how, in terms of that personality, do you know you've got it or you don't?

P3: That's a good question. I think you have to be able to have some discipline to force yourself to meet your deadlines, you have to be willing to work extra hard on communication so that your team members remember that you're there, and your clients are sure that you're doing the job.

CI: Right, and do you find that because of your situation maybe you have more contact with the client maybe than you would if you were in the primary office? Like if you were in the primary office would the manager or supervisor be sort of fronting your work to the client or is it because you are sort of on your own you tend to do that more?

P3: I think not. Because I think the way our teams are structured that we are all responsible for our little piece of the project and if we need to interact with the customer we do. So I don't think that makes a difference. And I have to admit some days I am not productive. But when I worked in an office in my previous jobs some days I was not productive.

CI: That's true. You probably have fewer days of nonproductivity here than in an office, is kind of what I think I hear you saying.

P3: Well, I don't know about fewer, but certainly not more. Because there are some days I just can't work, for whatever reason, it just isn't happening. But when I have a deadline to meet, I meet it.

CI: Which you do in an office setting anyway.

P3: Right. I am a deadline-oriented person. I do need those deadlines. I hate it that I need those deadlines but they are really essential.

CI: Yeah that's right. When I have asked people to do things for me, if I don't say "I need this by tomorrow" . . .

P3: You don't get it.

CI: Right. Well, that's it.

P3: Great, it was fun.

Participant 4

Gender: Female

Co-Investigation: **What county do you live in?**

Participant 4: Boulder County.

CI: Are you telecommuting from here?

P4: No, I don't telecommute on this job.

CI: **What type of company did you work for?**

P4: [A high-technology company]. We lived in Denver and I worked in the training department, but I worked from the technical specs and I wrote for technicians that installed all the equipment and updated every time there was a new release; list all the new functions and the parts and those kinds of things.

CI: **About how many employees work at your company (including both full-time and part-time people)?**

CI: Let's just talk about that one area, that one building.

P4: You mean like the training or in the building?

CI: Or even your team; you can define it however you want to.

P4: Well, let's see, our department had maybe seven to eight people but they had it broken up so that if we wrote for technicians then there would be another group that wrote for sales and then there would be a group that wrote for provisioning. Then they changed them around here and there, but they always had them broken up in some manner. It didn't always make sense.

CI: And what would that be considered? If your department is only seven or eight people, what's the next division up?

P4: Well, like probably times six or eight because they had all these little groups reporting on up. But that was a training building, so I imagine there were 300 people there. I'm just guessing; it's been a while since I worked there.

CI: **How long were you with the company?**

P4: Two years. Then they laid off the whole training department. They kept a few people and a few contractors.

CI: **How long have you been a technical writer?**

P4: Really since 1997, and then when I worked at [The Company] I was a training coordinator but I didn't have enough to do so I did other stuff and would help write things. So, part time from 1990 to 1995.

CI: We could really start counting from 1990, so you've been a technical writer now for about 13 years.

P4: Yeah, but that's really just since 1997, but part time otherwise.

CI: **How long did you telecommute?**

P4: Two years, yeah it was real close.

CI: **How many days per week did you telecommute?**

P4: Full time. I only went to the office for meetings.

CI: **How many days per week were you in the primary office?**

P4: Never a full day, almost never.

CI: Were you there weekly though?

P4: No.

CI: So how often would you say you were there? Once a month?

P4: Yeah.

CI: And maybe for a half day?

P4: Yeah. It was lovely.

CI: I guess so.

P4: You work too many hours; it's always there.

CI: We'll be getting to that in just a second. **Did you work full or part time in the primary office before beginning to telecommute?**

P4: Full time. Actually, I started there as a contractor.

CI: Who were you working with as a contractor? Like, was it Volt or some kind of corporation?

P4: No. It was somebody [The Company] had, a company they had at their headquarters in [Another State], so they had to do my paperwork and pay me.

CI: **What are the advantages or benefits that you received by telecommuting?**

P4: Well, not commuting. Just, get up and shower and get your coffee and breakfast and start your day. I think the only disadvantage is that once in a while you need to be around people a little more. I think sometimes you can get a little left out of what's going on. Depending on where you're working.

CI: Let me back up. There's actually one question that I missed which is **what kind of information products did you produce?** But I think you told me, you said they were technical documentations for technicians that were installing equipment?

P4: Yes.

CI: Okay. So that's got that covered. **Are there any advantages or benefits that you expected to receive from telecommuting that you didn't?**

P4: No.

CI: **What are the disadvantages?** You mentioned being out of the loop.

P4: Once in a while I think people that telecommute are out of the loop. But with e-mail it's pretty easy, but sometimes you need the face to face. But I'd give it up in a heartbeat just to work from home.

CI: **Are there any disadvantages that you expected to experience from telecommuting that you didn't?**

P4: No. Of course, I had never telecommuted before then, so I didn't have any expectations.

CI: **Did telecommuting increase or decrease your satisfaction with your job?**

P4: Oh, it increased it.

CI: **And, if it increased, how?** What about it made it more appealing?

P4: Saving the time commuting, not being out in traffic, not being out on icy roads. It gives you a lot more free time just because you are not commuting. I like the flexibility because sometimes I call my mom and we'd go out to lunch, but then I would work at night too much, I would put in more hours than 40. But then I do now, too, so what the hell.

CI: And you're commuting, too.

P4: Yeah, well, two and a half miles.

CI: That's not bad.

P4: No, that's almost like telecommuting. Except for the slippers.

CI: **Given the advantages you mentioned earlier such as not commuting and flexibility, do you feel that telecommuting is a better option for you than working full time in the primary office?**

P4: Yes. Oh, one more disadvantage is the LAN connection isn't so swift.

CI: Okay, that's an important one

P4: And printing big documents on the home printer.

CI: Right, okay. **Do you feel your company's culture, [The Company's] culture, supported alternative approaches to work such as telecommuting?**

P4: When I was hired I was told I would have to work from home. They are very big on that.

CI: Do you think that's the way it is because of the work they do? It's not like you're in manufacturing, I mean, it's very easy for people to telecommute?

P4: Probably. And they don't do it out of the goodness of their heart. They save money on real estate and they get tax breaks, it's not out of the goodness of their heart.

CI: That's a good point. **What needs or problems did you or your employer have that telecommuting was intended to address?**

P4: Well, I'm sure that my boss's directive was his people would work from home, they call it virtual office, isn't that cute? I think it's all a real estate thing. So his department wasn't taking up space.

CI: It sounds like it addressed that issue since most of you were not there. How many people were in that group? Six or seven?

P4: Yes.

CI: And were all of you telecommuting?

P4: Yeah. Boston, Illinois . . . another guy lived in Illinois, a different town. One man lived in Evergreen. I lived in Denver. Another one lived in Louisville.

CI: Did you ever get together with all of these people in the same room at some point?

P4: Sure like when we would have meetings, whenever.

CI: Yeah. And everybody would come to some central location like Denver?

P4: Yeah, one went to Chicago, one to Atlanta.

CI: I mean, did you ever see these people face to face, I guess is what I'm thinking?

P4: Yeah, for the meetings and things like that, but otherwise no.

CI: That's interesting. **Did your coworkers in the primary office believe that you worked just as hard as they did?** Of course, now it sounds like you didn't have any workers in the primary office.

P4: Well, there were a lot of people in the primary office. But, every section and every department had telecommuters. And there are people that don't like it.

CI: You mean that don't like doing it?

P4: Right.

CI: Or don't like the fact that employees are doing it?

P4: Both, but I guess what I mean was that a lot of people don't want to telecommute, they think they can't . . . some people are too easily distracted.

CI: Right, okay. So it sounds like basically people believed generally that telecommuters worked as hard as somebody else?

P4: Yeah.

CI: Okay. **Has your company, or did your company, especially your immediate supervisor or manager, make changes to the primary office routines to accommodate you or other employees who telecommuted?**

P4: They were set up that way when I went there. Yeah.

CI: And were time zones an issue? I mean the fact that you had people here, and here, and here, did you have to have meeting times that kind of worked with everybody?

P4: Yeah, but it wasn't as if we had somebody on the East Coast and somebody on Alaska time.

CI: Right, okay. It wasn't quite that far.

P4: No, so it was not a problem.

CI: It was just a couple of time zones max?

P4: Yeah, we may have had two major time zones we were in and then of course when you're calling other people you just need to be aware, but you do that when you're in the office.

CI: Of course you do. You do that even if you're just on personal time.

P4: Right, if you're calling your family.

CI: That's right. **Did you require or receive additional technical training when you began telecommuting?**

P4: No.

CI: **Did you feel you did need more, or less, or about the same level of technical or IT support as employees who worked at the primary office?**

P4: Probably the same. When we were getting ready to telecommute they would set our computers up for us so that we could dial in. . . . I wouldn't know how to do that.

CI: **Did your company implement additional security measures such as installing security software, firewalls, on its host computer to maintain confidentiality of information transmitted to and from employees who telecommuted?**

P4: They did. I think I was scheduled for some of that and then they laid us all off. But yes, they did.

CI: And is that what it was? Was it just security software?

P4: Yeah, we were getting, I forget what it's called, some kind of secure ID, every time you log in it's a different number.

CI: **In the past two years did you or your company purchase additional computer equipment that was required for you to telecommute?**

P4: Oh sure. They sent my computer home with me after they got it ready for telecommuting, bought a printer and fax machine, telephone, they put in two telephone lines. Oh yeah, they took this stuff seriously.

CI: **Did you feel at the time that you could stop telecommuting any time you wanted to?**

P4: Oh no, no. I didn't have that choice.

CI: Yeah, it didn't sound like it to me. Because that's what you were hired to do?

P4: Exactly. Not that I wanted to [stop], of course.

CI: Did your company's telecommuting program have a formal structure that governs all employees who telecommuted or an informal structure?

P4: Well, they had a book on it, giving guidelines, and most of it to me was common sense. But they did have a formal book and you could even take a class on it.

CI: How to telecommute 101?

P4: Yeah, evidently; I didn't think I needed it. You know, maybe if you're 21 years old and you don't have a lot of work experience it's different.

CI: Did you feel that some of the time you spend in the primary office was required to visually confirm to management and coworkers that you were a "real" employee?

P4: No.

CI: Because it sounds like you only had meetings infrequently anyway, so if you had face time, you had to go in.

P4: And we all had, all of us, because we were working on different things, we would have different meetings. Like I would go meet with somebody, some SME [subject matter expert]. So sometimes I'd be meeting with somebody here and here and somebody else would be working on the project so I would maybe be in to check on, to get information for the project I was working on, but not as a group meeting.

CI: Right. And not something you had to do to kind of, like, legitimize yourself as an employee?

P4: No, I always hated going in.

CI: On days that you telecommuted, which obviously was the full time, how did your immediate supervisor or manager measure your productivity?

P4: We had projects and we turned them in.

CI: So it was about getting the work done.

P4: Yeah. We didn't have . . . I mean there were deadlines, but I had no pressures.

CI: Right. Did the same measure apply to your coworkers in the primary office?

P4: Yeah, sure.

CI: Did you feel your immediate supervisor or manager valued your work as much as that of employees working full time in the primary office?

P4: Yeah.

CI: And again, it was probably because that was just the way it was set up?

P4: Yeah. Lord, my boss was in Illinois.

CI: Okay. **In the wake of the current economic recession did your workload increase, decrease or stay about the same?**

P4: It stayed about the same.

CI: And you were laid off from there so that indicates it had dropped off a lot, is that right?

P4: Oh no, workload, you don't get laid off just because workloads go down, you get laid off because they decide to cut costs. So, no, workloads were just as heavy right up to the end. Oh, we had lay offs [at my current job] in February and we only have four writers, and they laid one writer off. Well, our workload is even heavier now than when we had one more writer.

CI: Sometimes you really wonder what's going on with that. . . . **Did you feel *your employer* was more or less inclined to have you telecommute given the economic recession?**

P4: Well, even more so because [telecommuting] saved costs on real estate.

CI: **Did *you* feel more or less inclined to telecommute given the economic recession?** Was it even a factor for you?

P4: Well, sure, because I didn't have commuting costs, I didn't have to put gas in the car very often, I could wear any old sloppy clothes.

CI: So you cut back on wardrobe?

P4: Not that I ever worry about it, I'm not very picky, but yeah.

CI: But you mentioned you didn't have to worry about having suits and all that kind of thing.

P4: No, but that office was very casual, kind of like here, we're very casual, and it was there, too.

CI: Okay. **Do you feel *your employer* was more or less inclined to have you telecommute after the events of September 11?**

P4: Of course, that was before September 11. I would think a lot of companies would be more inclined because a person's home isn't as likely to be hit by terrorists as a building, especially a high-tech building, where everything would be destroyed at once. So having people dispersed has a lot of advantages.

CI: Did *you* feel more or less inclined to telecommute after the events of September 11?

P4: It doesn't apply.

CI: Do you have concerns about acts of terrorism being committed at your primary office, or did you then?

P4: I'm not the kind of person that panics, and if I were still in that building where the home office was, I wouldn't be giving that much thought. A place like that, the biggest problem there would be was if there was any kind of accident. No matter what, in that area, getting out would be impossible because of the traffic. Other than that, no.

CI: It would be, you know like if someone pulled up a truck in front of the building and it exploded, it would only damage a certain percentage of the building, it's a big building, right?

P4: Yeah, well even if it blew the whole thing up, but I mean if there had been a building three blocks away, just getting out of the Tech Center would be a problem.

CI: I'm with you. Last question: **If the decision to telecommute was solely yours would you want to continue telecommuting?**

P4: Oh, in a heartbeat.

CI: Is there anything in addition to things you've already said that you'd like to add?

P4: I just think telecommuting is superb, but, I'm fairly outgoing but I work well alone, I mean I work either way, so I think sometimes you need to maybe have a lunch with somebody just so you're not alone all day every day. Like, in Denver, my mom was nearby and we'd go to lunch occasionally. But then I had to go in for meetings enough that [I didn't feel isolated].

CI: Did you find yourself more productive at home than like working like you do here, in terms of interruptions and that sort of thing?

P4: Oh yeah. There aren't as many interruptions. And my kids were grown then.

CI: Anything else you want to add?

P4: I just hope more and more companies do it. It's a good deal.

CI: Well, for employees too, obviously.

P4: Oh yeah.

CI: But it does take a certain personality type, though right? You know you can't just throw like you say a 21-year-old kid might be really a failure at telecommuting.

P4: Yeah, and I think some of them are successful. But, a lot of people, not just young, a lot of people cannot concentrate as much, they really, there's a woman here who says, "I can't do it, I get distracted."

CI: Okay, well that's it.

P4: Okay.

Participant 5

Gender: Male

Co-Investigator: **What county do you live in?**

Participant 5: Larimer.

CI: **What type of company do you work for?**

P5: It's a software development company that makes graphical ABIs (application binary interfaces).

CI: **About how many employees work at your company?**

P5: I think it's about 100.

CI: **How long have you been with the company, how long was your contract for?**

P5: I've had several contracts, but I've been there altogether about two years.

CI: **How long have you been a technical writer?**

P5: I'd have to add it up, 18 or 19 years.

CI: Wow, that's pretty long.

P5: It's a curse and a blessing.

CI: **With respect to the company we were just talking about, how long have telecommuted with them? Was it the whole two years?**

P5: No, not for the first four months, I wasn't able to do it because of the nature of the project I was on, but after that I was able to do it off and on. But usually it averaged about two days a week where I would work from, that I would telecommute, and then the rest of the time on site.

CI: **Did you work full or part time in the primary office before beginning to telecommute?** I think you just answered that as well.

P5: Yes, four months.

CI: **What kind of information products did you produce?** You said it was a software developer company, did you do manuals for them?

P5: I wrote manuals. Let's see, I did user guides primarily, but also installation guides and pretty much whatever they needed.

CI: What are the advantages or benefits that you receive by telecommuting?

P5: That I receive personally?

CI: Yes.

P5: I save a drive of 45 minutes into town and back, and I also found that I was a lot more productive, especially with specific tasks that I would choose to work on at home. I was more productive because I had fewer distractions and so forth and I could really crank . . . you know, if I had a tough project to work on, and I really needed to concentrate, it was a lot easier to do that from home. But then again it depended on whether I needed contact with the engineers on site. In that case, well I did a lot of my interviewing while I was working on site and I used e-mail and telephone for the times I got stuck.

CI: Okay, yeah that makes sense. Are there any advantages or benefits that you expected to receive from telecommuting that just never materialized?

P5: Not really. It was pretty much as expected.

CI: What are the disadvantages to telecommuting that you experienced?

P5: Well, you have to have a reliable setup at home. I had some difficulty with Internet access. I live up in the mountains and I have a satellite connection and it was touch and go, it wasn't all that great, but my current setup is pretty reliable so it's a lot easier. It's almost like a T1, that I'm sure maybe a bunch of other people have said . . .

CI: Anything besides reliability in terms of telecommuting? Access to people, for example?

P5: Well, the access to people but you could plan for that you know, that's not that hard. One of the things that I wish I had had was direct access to the network at work from home and that was something they were reluctant to give me, and they finally decided to give it to me and it didn't work very well.

CI: Now they were reluctant to give it to you because of the fact that you were not an actual employee of the company?

P5: That was a large part of it. It was primarily because my computer was not one of their computers, and, yes, they were even reluctant to have me hook into the network with the laptop I used there.

CI: Were they willing to give you a computer to handle that problem?

P5: I think if I had been an employee they would have been willing to do that but since I was on contract they were a little less interested in that. I think if I had really pressed

that, I could have gotten them to do that. I ended up getting a hard disk, a portable hard disk, and just using that. That worked out pretty well.

CI: **Are there any disadvantages that you *expected* to experience from telecommuting that just never happened?** Things that you thought would be bad but didn't quite turn out to be that way.

P5: Well, you know, I thought that the way people perceived my value to the company would suffer from working outside, but it didn't seem to be the case. But I was always careful to check in with people and let them know where I was, and they could always get hold of me, and that seems to have avoided any problems. I had someone working for me before who was working from home at one point and she didn't even have a computer at home so it was a little difficult for me. She would just call in and say, "I'm working from home," and I would say, "but what can you be working on?" And her response would be "Oh, I'm reading, I'm doing the background reading." For me it was okay, but I felt a little exposed by that because I was trying to work at home, too, and it just looked like working at home was not working.

CI: But you would probably admit, though, that even reading at the office is a tough task.

P5: Sure, that's true.

CI: With distractions and interruptions.

P5: Yeah. It's all perceptions; a game of perceptions.

CI: That's a good point. **Does telecommuting increase or decrease your satisfaction with your job?**

P5: I think it increases it because the job I had before I wasn't allowed to telecommute at all and that was a frustration for me.

CI: And you say frustration just because of the uninterrupted time that you felt was needed and you just couldn't get it because you had to be in the office?

P5: Exactly, yeah. And also the fact that you put in a day's work and then you think of something when you're at home and you really want to do something with it. Well, if you don't have access, you could write it down or put it on your laptop and then transfer it later but it's not quite the same.

CI: That's true, yeah, there's a productivity issue.

P5: Yeah. Exactly.

CI: **And given the advantages that you mentioned earlier, you know, things that you liked about telecommuting, do you feel it's a better option for you than working full time in the primary office?**

P5: You mean telecommuting at least part of the time?

CI: Yeah, right, as opposed to working full time in the primary office.

P5: Yeah, it gives me uninterrupted time. But I think it needs to be a mixture. I think working at home all the time would be a disadvantage because we have some contractors who work at home all the time and they just don't know what's going on a lot of times, and it's difficult to get them up to speed on things sometime.

CI: Do you feel your company's culture supports alternative approaches to work such as telecommuting?

P5: To a certain extent, yes. There's always a prejudice against it that you have to get over.

CI: There's always a prejudice, why is that?

P5: I think that people, well managers in particular, are a little concerned about somebody not being right there where they can see what they're doing. Until you've proven yourself it's very difficult for them to accept that you might be more productive, or as productive, at home but once you've been able to prove yourself I think they realize that. At this company, the culture is not quite as security conscious as the company I was with previously. At the start-up they wanted to carefully guard all of their secrets and that was why they wouldn't let me work at home, although the developers were able to take their portable hard drives home.

CI: Were you contracted for that as well?

P5: No, I was full time.

CI: So just because you were a technical writer or something they had an issue with it?

P5: Well, there were two developers and those two, or one of those two developers had a portable hard drive that he would take home, but the policy for everybody else was everything stays on site. That way we can keep it locked down.

CI: Did they know about this guy and his portable hard drive?

P5: Yeah, he was one of the founders, so . . .

CI: Oh, okay, well that's a different story I guess. A different set of rules apply.

P5: Yeah exactly.

CI: What needs or problems did you or your employer have that telecommuting was intended to address?

P5: I think basically it was establishing that I would be productive and that I could work just about anywhere and that the quality of my work was worth taking a chance of letting me work at home for a while.

CI: So you initiated it by saying, “Hey, it would really be a help to me if I didn’t have to commute down here every day.”

P5: Exactly. Yeah, that’s the way I did it. And the obvious advantage of the 45-minute commute, saved them some time, because I could actually put in more time, although I wasn’t billing for that, I was billing by the hour so I had to watch overdoing it.

CI: Did your coworkers in the primary office believe that you worked just as hard as they do? You kind of touched on this earlier.

P5: Yeah, I think that largely they did think so because I had gone out of my way to make sure they understood what I was doing. I think if I had been sort of shyly working away the way a lot of people do in their cubicles they might not have perceived me as working as much as they were.

CI: Right. And now, you impressed this upon them by just staying in communication with them?

P5: Largely the communication. You know, I had instant messaging, and I always e-mailed them to tell them I was working from home. We’d exchange some e-mail, and just as a matter of course, I would try to contact at least one person during the time that I was working from home to make sure that they knew where I was so they knew they could contact me. They seldom really needed to but, you know, it was just warm fuzzies.

CI: Absolutely right. I know being a technical writer you’re sort of at the end of the food chain and I know that if they don’t hear from you they kind of think no news is good news.

P5: Yeah, yeah, exactly.

CI: Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other employees who telecommute? For example, like teleconferencing you into meetings and things like that.

P5: I’ve never teleconferenced, at this job I never teleconferenced into meetings but I was offered that possibility, there were other people who did that, and it never really worked out that well, usually it was easier for me to come in on the days that there were meetings. Basically I would arrange my schedule around their meetings rather than them having to arrange the meetings around my schedule, my work at home schedule, because my work at home schedule was much more flexible.

CI: Right, it sounds like it was primarily just meetings that really wasn't sort of an issue with maybe having you there in person.

P5: Yeah. And there were sometimes when they had a meeting and they said, "well I guess we really didn't need you at that meeting." And, which was kind of interesting, because if they didn't really need me at that meeting while I was telecommuting, they probably didn't need me there even if I was on site. But usually it was a meeting that I had been invited to after I started my two days at home. But in those cases, I guess always it wasn't necessary but there was a possibility of calling in for them.

CI: You probably preferred, though, didn't you to sort of maybe be invited and encouraged to be more a part of things than less?

P5: Yeah. Because if you start getting cut out of the meetings you really don't know what's going on and it's hard to be as effective when that happens.

CI: **Did you require or receive additional technical training when you began telecommuting?**

P5: You mean, in terms of commuting, communicating and so forth?

CI: Yes, exactly, how to telecommute.

P5: Not really. No. Having to have the good equipment at home was probably more significant and even then I could have done that with a dial up connection, that was not that difficult.

CI: So the equipment end was more like your responsibility as a contractor?

P5: Exactly. Well, all my software, my computers, my network, the whole bit I purchased myself so it was no requirement on their part to provide me with a home office. Now if I had requested a home office I think they might have been a little more reluctant, I don't know. That's quite an investment, especially a fairly small company.

CI: Absolutely. **Do you feel that you needed more, less or about the same level of technical or IT support as employees who worked in the primary office?**

P5: Oh, less. Because it was my own equipment and I was responsible for it myself, [The Company] didn't have to deal with it. There was a little bit of time there where I was trying to get the VPN [virtual private network] connection that I had to work with the IT people, but I'm pretty independent that way. In fact, I find that I do a lot of stuff that IT doesn't appreciate my having done. They'd rather do a lot of the maintenance on site with the on site equipment, they'd rather do all that.

CI: So sometimes because you were more savvy you could get in there on your own?

P5: Right, yeah.

CI: They tend to be a little grouchy that way. (Laughs)

P5: Yeah, right. They made sure I didn't have a sound card or a few things like that. (Laughs) I offered to bring one in and they said "No."

CI: Has your company implemented additional security measures such as installing security software, firewalls, on its host computer system to maintain confidentiality of information transmitted to and from you when you were telecommuting?

P5: Well, the VPN connection that I never got working would have been like that. But other than that, well it was one of those deals where at first I was able to connect to the network directly with my laptop and just transfer files that way, and then [the IT people] found out that there was an alien computer on the network and they said, "No, we can't have that." I was using the same IP address as my desktop machine that they had provided for me and I thought that was okay, but they didn't like it because they didn't have control over the computer I was using to connect.

CI: Were they worried about viruses, or were they worried about getting hacked into?

P5: Viruses, being hacked into, security . . . secure information being taken out, and so forth, so they did have a firewall and all but I was inside the firewall because I was using the IP address of my desktop machine and they didn't like that. They would have preferred that I connected through this VPN connection but they were not real savvy about how the VPN connection worked and they were just not able to configure my machine to work that way. They finally said, "If you can get your manager to buy you a laptop that you use to connect, that belongs to our company, then we'll go ahead and make sure that connection works. But if it's somebody else's, if it's your machine, then we are not going to necessarily support it." That makes sense, you know, they've got 100 people and probably 150 to 200 computers there to deal with and they don't want to be dealing with peoples' personal machines.

CI: I understand. What is a VPN connection?

P5: Let's see, virtual private network I think. Basically what it does is it allows you to tunnel into a network through a secure connection that nobody could hack from outside. But of course they still wouldn't have control over my computer. It would come up here on the network as just another computer. And they were happy with that as long as they knew it was just me that was going to be using it, but I had a local area network at home, my wife used the same network, and if I had kids they might be able to hack in. There are a lot of concerns. So the VPN protects you from people from the outside hijacking your session but it doesn't really protect you from somebody getting hold of your machine if you didn't have control of it.

CI: But now, since you didn't get the VPN connection working, you were, I don't know, sending them things by modem and by satellite, was it secured in any way?

P5: No, it was just e-mail, open e-mail, so that was a bit of a [security] problem; when I started using the portable hard drive that at least made that process a little bit more secure.

CI: Absolutely. Because then you weren't uploading and downloading things you were just taking it in with you when you went in?

P5: Exactly.

CI: Good. And at what point in the process did you get that hard drive, was it like pretty early?

P5: Oh just pretty recently actually. Because I was using the laptop basically the same way and it was actually on the network, so there was the possibility of my corrupting the network because I was using my machine. So that's why, that was about two months ago, I guess, that I had to stop using the laptop and start using [the portable hard drive].

CI: When you say laptop is it essentially like just a portable hard drive?

P5: That was all I was using it for but they were concerned about it. It was also kind of a funky network because there were combined Unix and Windows network, and the only way I was able to connect was through the Unix connection, and on a hardware network all kinds of strange things happen. So I really didn't have access to a lot of the stuff that I otherwise would have. For example I couldn't print from the laptop. I could print from my desktop machine but not my laptop.

CI: Was that because of the hybrid network?

P5: Yeah, exactly. Because of the server I was actually able to log into. So, yeah, I was only able to log into the Unix side of it, I couldn't log into the NT side of it, so . . . I don't know, it was complicated.

CI: In the past two years have you or your company purchased additional computer equipment that is required for you to telecommute?

P5: The portable hard drive.

CI: The hard drive is all?

P5: I purchased a laptop but that was for myself primarily, they didn't have anything to do with that. And the hard drive they offered to reimburse me for but I'm going to be using it for my own use so I just went ahead and kept it. I tend to do that. I tend to buy my own software and hardware and books and so forth, just to keep things separate.

CI: Yeah, well there's a lot to be said for that, that way you know what your resources are and you're not, because I know for me, I tend to be the same way. That way you've

got control over your own software, you're not worried about what someone else is configuring it for.

P5: Yes, exactly.

CI: Do you feel you could stop telecommuting any time you wanted to?

P5: Yes.

CI: If you just said, "Hey, I don't want to do this anymore?" They would have said, "Fine, come work five days a week in the office."

P5: Yeah, it would have been transparent, it wouldn't have made any real difference to them at all.

CI: Did the company's telecommuting program have a formal structure that governed all employees who telecommuted or was it more informal?

P5: It was more informal. It was on a person-by-person basis primarily. One of the guys I worked for actually telecommuted quite a bit, and he had been a remote employee for a long time. He was a former documentation manager, and in order to keep him they let him work from home so he had done that quite a bit. So, you know, he was more open to it than a lot of people would have. But I think his setup, he was using the VPN setup. He would occasionally come in on site, you know, like when we were doing a release and he had all of the documents that he had to make sure were in the right place on a network and then he would come in and work. But, that doesn't really answer your question.

CI: He was sort of your immediate supervisor and he telecommuted way more than you did?

P5: Sure, and he still telecommutes one day a week, even though he's in the office four days a week. It was worth it for him, just to have that one day.

CI: Do you feel that some of the time you spent in the primary office was required as a visual confirmation to management and coworkers that you were a "real" employee?

P5: Yeah. I will say yes to that. I think, again, we're talking about perceptions. I probably could have been out of the office more often but if they don't know who you are, or when new people come in you don't meet them, then you don't have access to them as easily.

CI: Right. You're trying to get the information from them, and it's usually the other way around.

P5: Yeah exactly. Precisely.

CI: On days that you telecommuted how did your immediate supervisor or manager measure your productivity?

P5: Number of pages that I finished, I guess. Or just recently I was on a really fast track project and I had around a 200 page manual that I basically cranked out in six weeks. I was able to do that because I was able to work at home, I think that was a lot of it. I would just sit there, and a lot of it was cut and paste stuff, because I was working for military specs and there was a lot of stuff in there . . . but I also have to do a lot of tweaking. But I felt like I could do a lot more of that at home than on site.

CI: That's a big manual.

P5: Oh, yeah. So my productivity . . . I mean, compared to what? That's always the problem.

CI: Well, I guess compared to in the office, because of interruptions and meetings.

P5: If I compared myself to some of the other writers in the same project, I think, well I don't want to brag, but I think I was more productive than they were.

CI: Do you think it was because you were telecommuting?

P5: Part of it had to do with telecommuting and also I've got a lot of experience and I work fast.

CI: That's what they want.

P5: Yeah, and I charge appropriately. So they had to, I had to make sure they were getting their money's worth, let's put it that way. So I felt that I had to be more productive than the employees.

CI: Do you think the same measure was applied to coworkers in the primary office? Or was it just a matter of, "Are they getting the job done?"

P5: Yeah, and I think because, now this has just become an issue recently, because I was getting paid more because I was a contractor and I could be let go at any time, that was one thing. The other thing is, you know, they are paying more than salaried employees because salaried employees are there for the long term and I'm just there to take care of a project, and once that project is over it's bye-bye, which is the case right now. And because of that I tended to work a little bit harder and I was more concerned with being productive every minute of the day and not hanging out by the water cooler and sharing all the gossip.

CI: So it sounds like what you're saying is that you kind of put a little bit more conditions on your productivity than perhaps management did.

P5: Exactly, yeah. Realizing that if I wanted to be hired back they would need to see some productivity. But in terms of [management] being able to tell the difference between how productive I was on site and off site, I don't think they really paid much attention to that. They respected my observation that I was more productive off site but they weren't actually out trying to measure it. Then, again, I didn't miss any deadlines, I got everything done on time or earlier than on time.

CI: I wonder if that alone was confirmation that whatever was going on it was working, you know in their minds.

P5: Yeah, I believe, yeah, it may not have been said overtly, but the implication was that they accepted that.

CI: Okay, good. Because had you been telecommuting and not making deadlines, then they might have . . .

P5: They could blame it on the telecommuting very easily. So I had a vested interest in making sure [I made my deadlines].

CI: Do you think your immediate supervisor or manager valued your work as much as that of employees working in the primary office, such as salaried employees?

P5: Yes. Primarily, the productivity, the cranking out a number of pages per day. Now in terms of being present at all the meetings and participating in all the planning and the direction of the company and so forth, no, because I was out of the loop on most of that. I did try to be involved in some of the planning issues because I have done a lot of documentation management. They didn't expect me to come to the company meetings, you know, the strategy meetings. They wanted me to participate in planning for the documentation, of course, but in terms of trying to figure out "do we want to reward employees on the basis of this or that?" I wasn't involved in that. And I think they appreciated that they could have some people who could just focus on the work and not the other.

CI: Yeah, somebody's got to get the work done. Sometimes that's what it feels like, it feels like meetings are there as obstacles rather than steps to productivity.

P5: Yeah, I was just working for this guy who was a lead writer who spent, I swear, half to three quarters of his time in meetings and that doesn't leave much time to do any writing. He was managing to get the work done but he had to farm a lot of it out and he really relied on me for a lot of that.

CI: In the wake of the current economic recession did your workload there increase, decrease or stay about the same?

P5: I think maybe a little bit more work was coming my way because they were reluctant to bring somebody on full time, you know, as opposed to a contractor, so they had a lot of contract work. When I first started there they hired six or eight contractors to work on

this new project rather than hiring people full time. They just started another project in which they hired three writers, a lead writer and two other writers, and they ended up being hired on. They are temporary employees but they were hired on for long term. There is this other contract—we got three-month contracts—and there was some question about whether they'd be renewed or not. So I think this project is sponsored by the parent company, which is Kodak, so they probably had more money to work with than the in-house developed projects. But yeah, it seems that we're coming out of a lot of the hard times and just judging by what I can see in terms of looking for jobs right now, there's a lot more jobs out there than there were earlier. It seems like the companies are a little bit more willing to hire people, although they didn't hire me on.

CI: It also sounds a little bit like it's kind of project specific, like depending on what project you were on sort of determined your fate.

P5: Precisely, yeah. This company has probably become more project oriented. I mean, they broke up the documentation department into documentation teams for each of the projects. So, there's no longer somebody in charge of everything which means, who maintains the templates and all that? Those tasks were let go, they were just sort of up to the individual leads to make sure it happened. And so, yeah, it was decentralized . . . they were trying to improve their efficiency and as a result they are not bringing on that many people for long term employee positions.

CI: You mentioned that there were a lot of contractors hired when you first started, but by the time that you finished up here just recently were a lot of those people gone?

P5: Yeah.

CI: Was it because the projects had ended and there weren't new projects coming along?

P5: Exactly, yeah. And this new project that I just mentioned, rather than hire contractors the way they had before for short term, they actually hired staff. So I think it's a new direction that they're taking.

CI: Do you think it's cost related? Do you think they looked at what their contractors were costing them and said, "Gee, it would actually be better to hire these people"?

P5: Possibly, yeah. I'm really not sure.

CI: It's hard to tell.

P5: I've sort of heard indirectly that the reason I'm not back is because I'm too expensive and they wanted to hire somebody for less. Usually you make, obviously, less as an employee than you do as a contractor just because of the off times and so forth. But they were considering hiring me at one point but the amount of money that they offered was like almost half of what I was making and I just couldn't afford to do it. And, maybe they're going to find people for that, I don't know. But maybe they don't need the experience. One of the advantages of hiring me is that I've got a lot of experience and I

can hit the ground running and that's not going to happen with somebody that you hire at a junior writer's salary, but it's going to take them a long time to come up to speed. But on the other hand, one of the things I wasn't able to get, and this is more of a contracting issue than anything, was training on the software. They basically expected their contractors to come in fully versed in whatever.

CI: Even some brand new software program that people hadn't used?

P5: Pretty much, yeah.

CI: That seems absurd.

P5: Yeah, it does. Well, they actually have a "product" that's been out there for 25 years and knowledge of that product is the thing that I was hoping to get trained in, and as it was I had to pick it up as I went along. It's like a lot of things, I've learned through doing. I haven't had a full training course in it, so I don't have a real background. I don't have a computer science degree, for example, but I picked it up from writing manuals.

CI: I wonder if the people they hire, these part time people, are going to get that kind of training?

P5: I would imagine they will.

CI: I would certainly hope so.

P5: They're reluctant to let people take training courses who are not there for the long term and that makes sense.

CI: Well, I guess, but still, you know, it sounds like it would be beneficial to you to kind of get a good view of the product if you're going to start writing about some new application that's related to it.

P5: Yeah, well, anyway . . .

CI: Do you feel *your employer* is more or less inclined to have you telecommute given the economic recession?

P5: No, because I had an office. There's no advantage for people who already have offices that are on site. Unless you were sharing the office with somebody else and it was too crowded or something. They sort of stuck me out in a cube that nobody wanted to be in. And the equipment that I had on site was old. I had the slowest machine and the smallest monitor of all of the tech writers there.

CI: Do *you* feel more or less inclined to telecommute given the economic recession?

P5: Not really. I think it was a personal choice. I'd rather work from home and I kind of like setting up my home office, I can have a nicer environment there. I can watch the deer out of the window, which I can't do at work.

CI: **Do you feel *your employer* is more or less inclined to have you telecommute after the events of September 11?**

P5: Isn't that kind of the same as the previous question?

CI: Well, the economic recession is dividing those things. September 11 has changed things perhaps in a different way so I asked both those questions because the economic recession is one thing and may have other aspects than September 11. But you're right, they're definitely related because they are pretty much occurring simultaneously.

P5: Well it's hard for me to answer that because I lost my full time job right after September 11 and that was because we just had no sales, and it was a start-up company and if you don't get sales in the first year you're done for. So September 11 certainly put fear in my soul.

CI: In terms of a job?

P5: Of security, right, well, because I got laid off in October and there was nothing. And I just was desperate and I went for anything I could find and I ended up getting three jobs at once and trying to work them all. I was commuting to Denver to teach web design at CU-Denver, and I also had a contract for a manual for a web site, and then I got this full time job here in Boulder. So I was trying to do all three of those and the main reason I accepted all three of them was fear because, you know, it looked like everything was going to tank.

CI: And it did.

P5: And we're all desperate, you know. And anything that came along was worth taking.

CI: Right, but in terms of your employer did you feel like they were more or less inclined to have you telecommute?

P5: Well, probably not because the project that I came on, this was the January after September 11, was the project we were told not to telecommute on. We were told that we needed to work on site and that was partly, I think it had partly to do with security and simplicity of management and so forth, but I also think it wouldn't have saved them much money. They didn't want to bring on anybody full time but at the same time they wanted to be able to see what people were doing, and they wanted to keep the pressure on and make sure we were productive and so forth. I think the manager at that time may have felt like he didn't have a way of keeping tabs on productivity. He had money for four months of development, of creating the documents, and if he let anybody [telecommute he might now be able to keep the pressure on as much.]

CI: Again it was sort of a project-related problem.

P5: Yeah, this was the time when the company still had one documentation department, and this was under one documentation manager who ended up being the lead, the manager of the project later on and his . . . it was, I think, largely his decision to manage things the way he did. He knew he had a limited amount of money and he had to squeeze as much blood out of his stones as he could. And I don't think he trusted people to work at home, whereas the next project I worked on the guy was a telecommuter, who was my supervisor, so there are different approaches. I feel like the company was running a little scared because of 9/11 and all that. The 9/11 security thing and the recession I think went hand in hand to make it lean times. So everybody was being very careful not to overextend and this seemed to be the simplest way to manage that. I seem to be talking around in circles but I think you get the idea.

CI: Yes, I definitely get the idea. **Did you have concerns about acts of terrorism being committed at the primary office?**

P5: It's never really been a big concern for me and I guess, when I've worked at government offices, or in high-rise buildings or something, I might feel a little bit more concerned about that.

CI: Is your concern with government buildings related to what happened in Oklahoma city?

P5: Yeah, well, in fact when I worked at US West we were right across the street from where they were trying the guys for that. Anytime a Ryder rental truck pulled up to the building everybody sort of got nervous, but I never really felt that much exposure at this company. They own their own building right next to the bike path, so it's an idyllic setting and security in the building is not real obtrusive, not at all obtrusive. Whereas the company [I worked with] before the start-up had probably less to lose, but they had this super duper security system and there were all these issues about the alarms going off, so I really felt more of a security threat because there was more security visible.

CI: Did they have badges to get through doors?

P5: Yeah and that was . . . this company you could walk in and out during office hours and then at night you'd need a badge to get in. When I worked at Qwest, or US West, there were badges everywhere. IBM, badges everywhere. All those places. So, I'm used to a security environment.

CI: But the security was more of a perception thing. Were you concerned about an act of terrorism being committed?

P5: At that building?

CI: Yeah.

P5: Ironically, no. Even though it was less security than I had before. It just did not seem that way, it didn't seem to be likely. We did get edicts from Kodak about "this has to be done this particular way" because they have to handle all their companies the same way. Yeah it was . . . it's an interesting question because, you know, there's the perception of security and the actual feeling of security.

CI: Right, exactly. Even if you have a lot security if you feel like the very building you're in is actually a terrorist target, you know, you might not feel safe regardless.

P5: Yeah, yeah.

CI: The last question is, **if the decision to telecommute were solely yours, would you want to continue telecommuting?**

P5: Ah, yes.

CI: And I presume largely because of the advantages you've mentioned?

P5: Yeah and it just, like I said, more productivity and less windshield time.

CI: Windshield time. That's good.

P5: I used to commute to south Denver and I live up almost to Estes Park and that was insane. I try to avoid that.

CI: How long did it take you?

P5: That was about a 2-hour commute.

CI: Each way?

P5: Yeah, you sort of had to off-set yourself so you weren't dealing with rush hour but it was almost impossible to avoid it. I found myself working ten hours on site just to push the rush hour on either side.

CI: Then you're basically just sleeping at home and then turn around and go right back to the office.

P5: Yeah, yeah. It was nuts. If I had been smart I would have tried to find a place to live down there.

CI: Just temporarily.

P5: Live down there during the week and then come home on the weekends, but, you know, it's too expensive.

CI: Right. You're spending money whether you're paying rent or paying for gas.

P5: Yeah. It's nice to be at home. It's a nicer environment, [and] you have control over it. The cubes that I was working in at this last job they were dark and kind of dingy and stuff. The people were nice but . . .

CI: Conditions were pretty bad.

P5: Yeah. They weren't so good.

CI: Cubicles are just notoriously bad.

P5: Yeah, I had a better computer at home and so forth, even though I had to pay for it myself.

Participant 6

Gender: Female

Co-Investigator: **What county do you live in?**

Participant 6: Boulder County.

CI: **What type of company do you work for?**

P6: An information services company.

CI: **About how many employees work at your company? Let's just take like just the office you're in.**

P6: About 200 to 300 just in my office.

CI: **How long have you been with the company?**

P6: 20 years.

CI: **And how long have you been a technical writer?**

P6: The same.

CI: **How long have you telecommuted?** Maybe it's important to clarify, are you telecommuting in your current job?

P6: Yes, once in a while, yeah.

CI: So how long have you been doing that?

P6: I guess actually only about, probably only about three years, two or three years, not very long.

CI: **And how many days per week do you telecommute?**

P6: I'd have to say, a week is hard, let's say two or three times a month.

CI: **Did you work full or part time in the primary office before you began telecommuting?**

P6: Full time.

CI: **What kind of information products do you produce?**

P6: I produce documentation of all sorts, on online help, presentations, sometimes proposals, sometimes marketing presentations. I mean, in the past I've done that, not currently.

CI: And currently, Web content, right?

P6: Currently it's content provider for the Web, mostly just documents. I don't fully understand the question. This is a really hard question to answer.

CI: Okay, the question is what kind of information products do you produce? For example, in my previous job I created end-user documentation for a software package.

P6: Yeah, right, in this current job it is communications, it's mainly general communications and, for a large team, that crosses multiple organizations, and clarification documentation for a very technical aspect of middleware.

CI: So it's internal for the most part?

P6: It's internal to the project team that's building the middleware which is actually used by external customers, so the end product is used by external customers.

CI: Right, but your portion of it is internal?

P6: It's internal to that team, yes.

CI: **What are the advantages or benefits that you receive by telecommuting?**

P6: To be truthful, not a whole lot because the network connection is very slow. The benefit is I don't have to travel 35 miles in the snow.

CI: But it still takes an hour and 20 minutes?

P6: On bus. It takes 30 minutes to drive it, in good weather.

CI: Okay, so no commuting is one of the advantages.

P6: That's the biggest advantage. No commuting is the biggest advantage. And the proximity, if, because of the space, or the distance, if I have to work like at an odd hour, I mean it's rare that this happens, but occasionally there might be a meeting that we're meeting with, say, Singapore and it would be at midnight my time, then to be able to do that at home is much easier than to. And that's rare. In this project it hasn't happened yet but it has the potential of happening.

CI: **Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not received?**

P6: Yes, actually there are, and the biggest benefit was I expected to be more productive and I'm not.

CI: That's interesting. **What are the disadvantages to telecommuting that you experience?**

P6: Okay, the disadvantages are, first, my company expects me to have a home ISP or a cable to do VPN, to have a high-speed connection. I don't have that, I'm cheap, I do not have. I am one of the few individuals on this earth that doesn't pay for home e-mail, okay? And I only have one telephone line. So I have to do a dial-up connection and I have no second phone line so if I have to make a call while I'm online, I have to use my own cell phone to talk to the people. It's a pain in the butt. That's why it's really not advantageous at all.

CI: Okay. **Are there any disadvantages you *expected* to experience from telecommuting that you have not?**

P6: That I expected, that I have not?

CI: Yeah, that you thought was going to be bad, that didn't turn out to be so bad.

P6: No.

CI: **Does telecommuting increase or decrease your satisfaction with your job?**

P6: I don't know, it might balance out to be neutral but it depends on the situation, again I'm a situation ethics person. If I have a doctor's appointment and I can work from home, it's much easier and in that sense it makes it much better. So depending on the circumstances surrounding a particular time period it makes sense and it brings greater job satisfaction.

CI: Now, you say depending on the circumstances . . . what's a circumstance where it wouldn't be advantageous?

P6: It wouldn't be advantageous if I had to just stay home and work on a continuous basis.

CI: Like 40 hours a week?

P6: Right, or even 20 hours a week because it's too . . . well or even, yeah even 20 hours a week, because the connections are too slow and the telephone use is just too difficult. I would be expected . . . oh, and the other disadvantage I guess, and I don't know where this actually fits, this might fit in the question, but the company pays for my space in this particular office, okay? That's where they pay for it. I have high-speed connection to the Internet [and] the company intranet information. If I do it from home it's much slower, and the only way I could get them to pay for the high-speed connection is if I were to give up the cubicle. So, I could say, "I want to work from home. I want you to pay for

my second phone line, I want the company to pay for all these things.” And they would do it, but I would lose the cubicle, and I would lose the interaction with other people. Even though the people I interact with on the project are all over the country and I never see them face to face. So the disadvantage is the lack of personal interaction with office mates and colleagues, and access to printers and all that stuff.

CI: Okay. Given the advantages you mentioned earlier, which primarily were no commuting and participating in international calls from home, do you feel that telecommuting is a better option for you than working full time in the primary office?

P6: Yes, yeah, in those two, with those advantages, yeah.

CI: Okay, but it's only those two advantages?

P6: Well, it's only those two and also the circumstance like if you have a doctor's appointment or car or something and not have to travel a distance, which I guess falls into commuting.

CI: It's more like personal convenience.

P6: Yeah, right. Just because of where I live.

CI: And when you do telecommute is it mostly reasons like that?

P6: Yes, or weather, if it snows I'm not going to try to get down to Lakewood at 6:00 in the morning, I mean I am going to stay home and work from home. And it doesn't make any difference to the people I support for the most part. We've never gotten into a situation where they actually have to have Internet connection, that is. I don't like to use a brand, but like Net Meeting where you can actually see the other person's desk top, I can't do that because, I mean, I'd have to be on my cell phone to have the call and use the phone line for the telecommute. So I couldn't be on a conference call and a telecommuting call at the same time, and they'd never set that up for me unless I were to give up my cubicle space.

CI: Do you feel your company's culture supports alternative approaches to work such as telecommuting?

P6: Yeah it does. [Adoption of telecommuting] has been slow. I wouldn't say they heartily embrace it to the hilt but they are open to it.

CI: What needs or problems did you or your employer have that telecommuting was intended to address?

P6: For me, I don't think there are any. For the company in general there are several people who work strictly from home so the company saves money by not paying them an office cost.

CI: Okay. But in your case? . . .

P6: It's a convenience thing is all it really is. And they could take it away if they wanted to. I mean, there's really no benefit to them, in fact it actually costs them more.

CI: Well, does it really?

P6: Sure, because they have to pay for my phone line. I mean, they have to pay for, I don't know what, I heard a rumor and I've never seen the bills but it's actually something like 5 cents a minute every time I use the dial up connection. So they pay, my manager gets hit with that cost when I dial up. Now he just hands off the bill to the client that I'm working for. But, it's not like, you know . . . somewhere in my rate the overhead for my cubicle space is also built into that, so he's paying twice.

CI: Gotcha. So he's paying for that high-speed connection at your cubicle, which you're not using . . .

P6: Which I'm not using, and the dial-up connection, which I am using. So it's really, I mean if somebody were to be a real bean counter and look at that they would probably say, "you either have to do one or the other, you can't do both." But, again, the business justification is the distance between my office and it's like I either don't come to work or I telecommute and that's in a storm.

CI: But could you say from your employer's point of view, though, that maybe your productivity is an advantage? For example if you have a snow day and they are not allowing you to telecommute . . .

P6: Right, and then it would drop, right. So, theoretically in those cases, yeah, that is true. And that is true for a lot of people that are on my team right now who telecommute at least a couple of days a week for whatever reasons. You know, whether it's personal. One person, her husband broke his foot, so he couldn't get around very well and they have two small children, so she ended up staying home a lot even though there's somebody that comes in and takes care of the kids.

CI: Do your coworkers in the primary office believe that you work just as hard as they do, primarily when you're telecommuting?

P6: I don't think anybody cares one way or the other. I don't think there's an issue. I mean, if I were to telecommute every single day there might be some eyebrows raised but no. There are several of us, there's one woman, she works from home three days a week.

CI: But that's not considered a . . .

P6: That's not an issue, no.

CI: Okay. Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other

employees that telecommute? For example, teleconferencing you into meetings or directing other employees to address your questions, whether by e-mail or telephone, as quickly as possible? So, like when you're telecommuting do they kind of change their routines a little?

P6: No, because we do an awful lot of our support remotely anyway regardless of where we are, so the fact that you're on a slow connection, I mean that's just tough, you could buy an ISP and get the high-speed connection and you wouldn't have to deal with that. There is talk, though, it's interesting, there are rumors, that they are going to make us all go to VPN, which is the high-speed connection.

CI: Right, but would they pay for that at home?

P6: I don't know, that's what's undergoing study, see I don't know. I don't have it, I have a cable on my television but I don't subscribe to AOL.

CI: Is that how it's done, it's through cable?

P6: Yeah, it's through cable.

CI: So, you're half way there.

P6: Yeah, I'm half way there but I don't own, I don't subscribe to any ISP, I just have never done that, I'm weird.

CI: That's okay, you've got access at the office.

P6: I do it at work, it's like I don't want to look at a computer when I go home, why should I even bother? It's just a waste of 35 bucks a month or whatever it is.

CI: Yeah, it's expensive.

P6: It's very expensive, well it's not that . . . you can get, I guess, Earthlink you can get for like 20 bucks a month or something. But still, it's like if you're not going to use it, it's like the cell phone, you know, if you're not going to use it why pay for it?

CI: Exactly, right. Say, like if you're home five days a week, you could say, "Yes, it's worth it."

P6: Yes.

CI: Did you require or receive additional technical training when you began telecommuting?

P6: No.

CI: Do you feel you need more, less or about the same level of technical or IT support as employees who work in the primary office?

P6: It's about the same. It's actually about the same, and believe me I've used them because when I'm telecommuting there are always problems. I mean, just doing connectivity, sometimes it breaks. And, okay, so it breaks and it's real interesting because I have to either get on my cell phone and test it, or I have to get off, call them, hang up, test everything and call them back. It's a real pain in the rear end, it's just awful.

CI: Does that ever happen in the office, though, the same kind of thing?

P6: Yeah, sometimes. But no, it's not as much, not as much, it's more volatile from home.

CI: Right, so in that sense, when it comes to, like, you telecommute at home you might say that you require more IT support.

P6: Yeah, in a way. And it's also more frustrating when it goes down because it takes longer to fix.

CI: Has your company implemented additional security measures such as installing security software or firewalls on its host computer system to maintain the confidentiality of information transmitted to and from employees who telecommute?

P6: They've done it across the board, regardless of whether you telecommute or not. But they have instituted very, very strict, good measures, and it's across the board. It has nothing to do with whether you're telecommuting or not. You have to have it, you know, you have to have the stuff on your computer.

CI: So, you have it on your home computer?

P6: Yeah. Well, I don't have a home computer, I have a laptop.

CI: Right, but you've got it on the computer.

P6: Yeah, oh yeah, I have it on the computer.

CI: Okay. In the past two years have you or your company purchased additional computer equipment that is required for you to telecommute?

P6: No.

CI: Okay, so the laptop doesn't count.

P6: No, because it was given to me, we go on leased equipment anyway, and when the lease is up you get new, and we just all got laptops, I mean that was the decision.

CI: Everybody's got laptops.

P6: Not everybody, but they are sort of reevaluating a lot of that but if it makes sense for you to telecommute, then, yes, you get a laptop. I was on client sites for a long time. Depending on my project that I'm on it makes sense for me to have it, because, like, for three years I was not at the home site. And so I did have to essentially dial up to get the Internet stuff or was traveling. So, when you travel you have to have it, so.

CI: Do you think you can stop telecommuting any time you want to?

P6: I wouldn't want to. But, yeah, I could. I'd be forced to go to the office every day, though.

CI: The question sort of goes more to the idea that some people, the companies make an investment, like you say, like a VPN, and they say, "Oh no, wait a minute, you can't stop telecommuting. We've put money into it."

P6: Well if they would do that, I would not be able to if they were to switch, if I were to go full time, but I couldn't. But as of now, yeah, it wouldn't make any difference. Unless there was something, I mean on this current project this is true. If I were on another project that forced me to travel, then I couldn't stop, it's sort of a weird question.

CI: Yeah, it depends on what project you're on.

P6: Right. For me [it does].

CI: Does your company's telecommuting program have a formal structure that governs all employees who telecommute, or is telecommuting performed informally with little, if any, structure?

P6: Boy that's hard to answer. There's probably a formal procedure, probably a formal policy out there, I just haven't seen it. We do have a data security policy and all that stuff but I don't know if it's specifically for telecommuters or not, or if it's just for everybody. But I think what they've done is update all of the requirements, all of the policies, to include telecommuting because enough people do it.

CI: So it's more or less formal.

P6: It's formal.

CI: Do you feel that some of the time that you spend in the primary office is required as a visual confirmation to management and coworkers that you are a "real" employee?

P6: Well, no. In my case [visual confirmation] doesn't matter because my manager is off site anyway. My manager is in St. Louis. I've been on a virtual team for a long time. So, it makes no difference.

CI: Okay, that's fine. **On days that you telecommute, how does your immediate supervisor or manager measure your productivity?**

P6: I don't know how they measure it when I'm not telecommuting, so I don't know. That's an "I don't know answer." It's by status reports and feedback from your customers.

CI: **Does the same measure apply to people in the office?**

P6: Sure, yeah, so there's no difference.

CI: Okay. **Do you feel your immediate supervisor or manager values your work as much as that of employees working full time in the primary office?**

P6: Yeah, oh yeah, it's not an issue.

CI: **In the wake of the current economic recession, has your workload increased, decreased or stayed about the same?**

P6: I'm going to say that it's decreased because we've had more bench time than we have had in the past few years.

CI: And that's due to less work?

P6: It's due to less work, fewer contracts. Yeah, that's a definite decrease.

CI: **Do you feel your employer is more or less inclined to have you telecommute given the economic recession?**

P6: Neither.

CI: Okay. And what would be the reason to say 'neither'? It's just not a factor?

P6: It's not really a factor. The factors are the business climate in general. I think they have made it sort of across the board and this was even before the recession, but probably more starkly, to cut down on travel costs. So, if you are supporting a customer, say in Canada, it's much cheaper if you can telecommute, to support them remotely, regardless of where you're located. Okay? So, and they are installing software, buying software packages, and even instituting some policies about when you have to travel. One of the justifications on the travel form itself says you must say why telecommuting or net meeting, video conferencing, teleconferencing, video conferencing, won't work. They're really pushing it before you actually get on that plane and travel.

CI: **Do you feel more or less inclined to telecommute given the economic recession?**

P6: No. It's not a factor to me at all.

CI: **Do you feel your employer is more or less inclined to have you telecommute after the events of September 11?**

P6: No. No, I don't think so. I think it's an economic thing but I don't see it as directly related to 9/11 personally. And I don't think our company would say that either.

CI: Okay. **Do you feel more or less inclined to telecommute after the events of September 11?**

P6: No. For me I have always wanted to go in the office regardless. I'm a social person. That's one of the biggest reasons I don't want to telecommute full time, regardless of the economic conditions or the political climate or anything, I want to be around other people.

CI: Well, then that's a very valid reason. **Do you have concerns about acts of terrorism being committed at your primary office?**

P6: No.

CI: Okay. But why? Do you just think you're not a target, or it's just not something that you're worried about?

P6: It's just something I'm not worried about. I don't think we're any more of a target than anything else, and I'm just not going to worry about it. I just don't see it as an issue. I mean, any more than driving down the street and somebody throwing a fire bomb. I mean, it could happen but what are you going to do? I grew up in a rough city, drive-by shootings happen a lot, you know?

CI: What city did you grow up in?

P6: Washington, D.C.

CI: Oh, that's right. You mentioned that before we started taping.

P6: Yes.

CI: Yes, that is a rough city.

P6: Yes. We have security in place in terms of you can't let anybody in without a badge and all that kind of stuff. You know, because of the possibility of violence in the work place, if somebody gets laid off and, you know, gets mad, or they're mad at their girlfriend and come in with a gun, you know, that kind of stuff. But I mean, I work . . . the office is four miles from Columbine High School.

CI: Is it really?

P6: Yeah, and after that event happened, I actually went down and saw all the memorial stuff. I went down less than a week later to see what people had put up on the fences.

CI: It would be overwhelming.

P6: Oh, it was really overwhelming, it was amazing.

CI: Yeah. **And the last question is, if the decision to telecommute was solely yours would you want to continue to telecommute?**

P6: Yeah. Yeah, I want the option. I always want the option.

CI: Okay, that's it.

P6: Cool, that's easy.

Participant 7

Gender: Female

Co-Investigator: **What county do you live in?**

Participant 7: Jefferson County.

CI: And what city, by chance?

P7: Wheat Ridge.

CI: **What type of company do you work for?**

P7: High-tech manufacturing, electronics manufacturing.

CI: Okay. **About how many employees work at your company? At this location, that is.**

P7: Well about 1,300 total and there's lots of other sites. And I don't know how many are here. The other sites are all much smaller.

CI: Oh, are they?

P7: Yeah, mostly sales offices and things like that.

CI: Okay, so it's 1,300 total.

P7: Total, yeah.

CI: And you don't know how many are here?

P7: The majority are here, the vast majority.

CI: Okay, and I guess is this headquarters?

P7: Yes.

CI: **And how long have you worked with the company?**

P7: Four years.

CI: Okay. **How long have you been a technical writer?**

P7: Four years.

CI: Really? So you started to be a technical writer when you came here?

P7: Yes.

CI: **How long have you telecommuted?**

P7: Four years.

CI: **How many days a week do you telecommute?**

P7: Two.

CI: Okay. And **did you work full or part-time here before beginning to telecommute?**

P7: No, I was telecommuting from the day I started. Well, that's not true, actually I worked here about a month and a half part time and then when I went to full time.

CI: Okay. Then you started telecommuting?

P7: Yeah.

CI: And why did you start off part time?

P7: I started as an intern.

CI: Okay. So really, when you went full time is when you were hired on as a regular employee?

P7: Yes.

CI: **What kind of information products do you produce?**

P7: End-user and OEM manuals.

CI: And they're for what kind of equipment?

P7: It's power supply and other power accessory type products that are used to either manufacture semiconductors or put very thin coating on them.

CI: **What are the advantages and benefits that you receive by telecommuting?**

P7: The primary reason I started telecommuting is that the commute is so long from Wheat Ridge and that was sort of a condition of me becoming full time.

CI: Okay, to try to get rid of that commute?

P7: Yeah.

CI: At least twice a week. Anything else?

P7: I mean from my point of view I really prefer working out of the house and I tend to get different types of things done there than I do here.

CI: Different types?

P7: Stuff that takes lots of concentration.

CI: Okay, just long, uninterrupted . . .

P7: Focused time, yeah.

CI: Okay, great. And, do you consider that focused time to part of your increased productivity?

P7: Yeah, definitely.

CI: Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not received?

P7: No.

CI: What are the disadvantages to telecommuting that you experienced?

P7: I don't know that I experienced it that much but I think a potential disadvantage is disconnection. And usually I telecommute on Wednesdays and Fridays so there is a day in between when I'm here. But when I occasionally readjust it and do two days in a row I start to feel pretty out of touch.

CI: Really? That quickly?

P7: Yeah, I think that that's a potential disadvantage that I work pretty hard to avoid. One real disadvantage is the speed of my connection to the network; that's a major problem.

CI: Okay. But do you have complete access, though?

P7: Yes.

CI: It's just slow?

P7: It's just slow and that's partly because I don't invest in a high-speed Internet connection, so I just haul data back and forth mostly.

CI: Just like on floppies and that sort of thing?

P7: CD's, yeah; too big for floppies.

CI: **Are there any disadvantages that you *expected* to experience with telecommuting that you have not experienced?**

P7: No.

CI: **Does telecommuting increase or decrease your satisfaction with your job?**

P7: It definitely increases it.

CI: Yeah, okay. And if it has increased it, can you please describe how?

P7: Oh, it just, I mean it makes it possible. I would be very actively finding another job if I couldn't telecommute.

CI: And the commute is just what you're concerned about?

P7: It's solely the commute. It's four extra hours of my life a week that I'm not willing to commit.

CI: So is it two hours each way?

P7: It's one hour each way, so two days, so two hours, yeah.

CI: That's a lot of time, that's a half a day.

P7: Yeah it is.

CI: Yeah and if traffic is bad I'm sure you're more like an hour?

P7: Yeah, I never hit traffic because I'm always going against it. But if there's a wreck or something . . .

CI: So you're leaving Denver when everybody else is going into Denver, and you're going into Denver when everybody's leaving Denver?

P7: Yeah.

CI: Okay, gotcha. **Given the advantages that you mentioned earlier do you feel that telecommuting is a better option for you than working full time in the primary office?**

P7: Yes.

CI: **Do you feel your company's culture supports alternative approaches to work such as telecommuting?**

P7: No, the company culture doesn't. My supervisor's culture does.

CI: Wow, interesting. Okay. And so you're saying that if you had a different supervisor this . . .

P7: This might not have worked.

CI: May not have worked? Only because he or she eventually might not want you to do that?

P7: Yeah, might not be comfortable with it, or whatever.

CI: Okay, that's interesting.

P7: And I'm not saying that there aren't other supervisors here that wouldn't support it, but it's not a company-culture thing.

CI: Okay, interesting. **And what needs or problems did you or your employer have that telecommuting was intended to address?**

P7: Just the commute.

CI: Just the commuting issue?

P7: Yeah.

CI: Okay, and it sounds like, and the second part of this is has telecommuting successfully addressed those needs or problems? It sounds like it has. And two days is enough to . . .

P7: Yes, it gives me enough relief to sort of keep my life in order.

CI: Okay. **Do your coworkers in the primary office believe that you work just as hard as they do? When you're telecommuting?**

P7: I assume so. I certainly have never heard anything, and it's never come up in my reviews or anything, and I think it would have.

CI: **Has your company, especially your immediate supervisor or manager, made changes to the primary office routines to accommodate you or other employees who telecommute? For example, teleconferencing you into meetings or directing other employees to address your questions whether by e-mail or telephone as quickly as possible?**

P7: Yes.

CI: **And can you give me examples of some accommodations that were made?**

P7: I teleconference into a lot of meetings, and that's not just my supervisor, because as a tech writer I'm on the product teams and things like that. I teleconference into a lot of those and people have been very accepting of that and open to it.

CI: Okay. Good. And is that probably the biggest thing you can cite? Like I said, in my example, I just said "are employees here directed to respond to you as quickly as possible, knowing you're not, like, two cubicles down."

P7: No one really directs people to respond to me, I mean, you know, I let them know that I'm not necessarily on site.

CI: So the communication of your status is really more up to you?

P7: It's entirely up to me.

CI: So, it's not like your advisor, your supervisor, said to them, "Look, when she's telecommuting I expect you to respond quickly"?

P7: No. I'm pretty much on my own with that.

CI: Did you require or receive additional technical training when you began telecommuting?

P7: No.

CI: Do you feel that you need more, less or about the same level of technical or IT support as employees who work in the primary office?

P7: About the same. I have two computers, so I need twice as much (laughs). No.

CI: You mean you have one here and one at home?

P7: I have one here and one there, yeah.

CI: But when you're telecommuting and dealing with the slow network, or the connection, don't you occasionally require more IT support at home?

P7: Maybe a little but, but no more than someone going on the road would require, you know. I've actually needed more when I took a laptop on the road so.

CI: Interesting. In the past two years have you or your company purchased additional computer equipment that is required for you to telecommute?

P7: Yes.

CI: Okay. Do you feel you can stop telecommuting anytime you want to?

P7: Oh yeah.

CI: Okay. **Does your company's telecommuting program have a formal structure that governs all employees who telecommute, or is telecommuting performed informally with little, if any structure?**

P7: Completely informally.

CI: Okay. That's kind of a surprise. I figured that a company this size would have all sorts of guidelines.

P7: No.

CI: Wow. Like, you say other supervisors are agreeable to having their employees telecommute?

P7: Not necessarily they're not. I mean, it's kind of a deceptive thing, though, because a lot of functions, it's such an engineering heavy company that it would be very difficult, I think, for a lot of those folks to do much at home, I mean they spend most of their time in a lab or going back and forth to labs. I don't know that it would be a very effective thing for most departments to have. And in that sense what I do is pretty unique in the company.

CI: But you're obviously not the only technical writer here. Is it unique about technical writers?

P7: None of the other technical writers commute but they're all local. But other people in my department that are underneath my supervisor who telecommute at least one day a week, and that had to do with distance issues as well. And so at one time he had up to three people telecommuting partially.

CI: That's good, it sounds like he's a smart person to let people do that.

P7: Well, maybe, we'll see.

CI: I just realized I skipped a question. **Has your company implemented additional security measures such as installing security software such as firewalls on its host computer system to maintain the confidentiality of information transported to and from employees who telecommute?**

P7: No, but that was already in place because so many folks are on the road, you know, so a lot of that stuff was already in place.

CI: **Do you feel that some of the time you spend in the primary office is required as a visual confirmation to management and coworkers that you are a "real" employee?**

P7: Absolutely.

CI: Wow, okay. But if you're only telecommuting two days a week, you're actually here the majority of the time.

P7: Yeah.

CI: But yet that's still, as far as you're concerned, that's crucial to have that primary office time?

P7: Being here, and I think three days a week out of the office would be too much, and I had every incentive to ask because we just had a baby four months ago. And thinking about it, it was like "No, that just wouldn't work." So I think that what I do is sort of the maximum in terms of maintaining that level of presence.

CI: Right, okay. But it sounds like, from you said earlier, it's more your ability to get your job done as opposed to someone that made you feel like you have to be here to make sure that everybody realizes, "Okay, I'm really an employee, I'm really working as hard as you"?

P7: Yeah, that's true, it has more to do with getting the job done. So, yeah, I think at three days a week I would probably run out of things to do that I could efficiently do from home as opposed to things where I really need to be here, like you know, spending time with engineers in their labs or playing with the equipment or whatever.

CI: Okay, good.

P7: But I think that perception is just as important.

CI: Okay. And it sounds like, because you're not one of hundreds of employees who telecommute, you're one of a pretty small group that telecommutes.

P7: Yeah, and I think they're pretty cognizant of making sure that impression remains okay, you know, to try to show up in person for some meetings that occur on my usual telecommuting days periodically, just to make sure people recognize me.

CI: Do you actually do that on days you regularly telecommute? If there's a meeting here you'd come in?

P7: Not necessarily but if it's important I will. I mean if it's important for me to be present, I'll switch days. I usually don't, I don't telecommute any less, I just change the days around. And I have regularly scheduled meetings on Wednesdays and Fridays, like product team meetings that I usually teleconference in, but I do make a point of switching the days enough to occasionally show up in person, and that's purely to have my face be present.

CI: Right. And I know from being a technical writer that part of it is just staying in touch, you can't just be this disembodied voice on the phone and expect to get as much information or as much collaboration on the subject matter.

P7: Oh, absolutely, yeah. It's bridge building.

CI: On days that you telecommute how does your immediate supervisor or manager measure your productivity?

P7: He doesn't really measure it in any way.

CI: Okay. So, is it more just "are you getting the job done?"

P7: Yeah, exactly.

CI: And is the same measure applied to your coworkers in the primary office?

P7: Yeah.

CI: Whether you're working at home or here?

P7: Yeah.

CI: Do you feel your immediate supervisor or manager values your work as much as that of employees working full time in the primary office?

P7: Yes.

CI: And it sounds like it's probably because the same conditions apply, I mean as long as you're getting work done whether you're doing it here or on the road or wherever, that's the real question, right?

P7: Yeah.

CI: In the wake of the current economic recession has your workload increased, decreased or stayed about the same?

P7: It's done all of the above. It depends on the year. I mean, it's gone up and down and all over the place.

CI: Do you think that's something unique to the economic recession?

P7: Oh, I think it's just life.

CI: It's just the nature of the business?

P7: Yeah.

CI: Do you feel *your employer* is more or less inclined to have you telecommute given the economic recession?

P7: I think it's a moot point.

CI: Do *you* feel more or less inclined to telecommute given the economic recession?

P7: Neither. I mean, it's crossed my mind, that the more [physically] remote you are, of course, the more vulnerable I think that you are. But I don't think I'm remote enough to worry about it. If I lose my job, that's not going to be reason why.

CI: That's a very valid point. And the same thing then applies to September 11: Do you feel *your employer* is more or less inclined to have you telecommute after the events of September 11?

P7: I don't think it's had an effect.

CI: Do *you* feel more or less inclined to telecommute after the events of September 11?

P7: I think the same.

CI: That it's not . . .

P7: It's not an issue.

CI: Do you have concerns about acts of terrorism being committed at your primary office?

P7: No.

CI: And why is that? Is it that you just don't think you're a target, or what?

P7: Because I have other things to worry about, you know? It just doesn't . . . you know, because I'm in Fort Collins; I'm in a short building in Fort Collins.

CI: Okay. And if the decision to telecommute was solely yours, would you want to continue telecommuting?

P7: Yes.

CI: And presumably for all the benefits you receive?

P7: Yes.

CI: And do think if you were working someplace else closer to home—let's say you were only 20 minutes from home, from the office—would you still want to telecommute?

P7: Yeah, I've thought about that a lot. And I don't know. In a way I think it would really depend on the job, but I do like the extra freedom that it allows, being able to be at home and, you know, not completely just stuck in the office. But, it's sort of isolating too. So, there are pros and cons. My schedule isn't that different when I do telecommute than it is when I'm here, so it doesn't seem to make that much difference.

CI: But like, say, part of the reason would be, like you say cutting down on the commute. If the commute wasn't there do you think you would want to?

P7: I don't know, I don't know. I think it would depend on the job and where it fit into what I was doing and whether it seemed acceptable in the office that I was working at in terms of whether it seemed to be a handicapping factor for me. And if it wasn't, no, I don't think it would be worthwhile. But I do like working out of my house and I like sort of the extra flexibility that it gives me in terms of my schedule. Especially now, having the baby. Because I can get up and work from 4:00 to 8:00 in the morning, and then spend an hour with her before I take her to her daycare, and have half my work done already. So I do like that but it doesn't . . . I'm not sure it feels like a huge necessity because I'm still spending the same number of hours essentially as in the office.

CI: Yeah, but do you find when you're working at home that you tend to work more hours? Do you find you maybe put in a 10- or 12-hour day at home as opposed to an eight-hour day?

P7: No actually it's the reverse, that I work more hours in the [Primary] office. So, my tendency has been to work very long days here and, if anything, to work slightly shorter days at home, and that is usually dependent on how much stuff I have to do that I really can do here, as opposed to what I can easily accomplish at home. So sort of the balance fluctuates depending on that. But I do find it easier, of course, to work on the weekends and things like that just because it's there. But that doesn't really bother me.

CI: Okay, yeah. Like you might do the same thing if you were 20 minutes from the office anyway.

P7: Yeah.

CI: You might pop in for a couple of hours?

P7: Yeah, or take something home or whatever.

CI: Okay, thank you.

P7: Yeah, sure.

Participant 8

Gender: Female

Co-Investigator: **What county do you reside in?**

Participant 8: Larimer.

CI: **What type of company do you work for, or did you work for, because I guess you're not telecommuting at your current job, right?**

P8: But it's the same company and the same job.

CI: Oh is it? Okay.

P8: Yes, it's in the financial industry. It's electronic funds transfer company.

CI: **About how many employees work at your company?**

P8: I believe we're about 300 to 400.

CI: So they're not all in [The Primary Office], right?

P8: No.

CI: And how many are in [The Primary Office]?

P8: Between 30 and 40.

CI: **How long have you been with the company?**

P8: Seven years. Since 1996.

CI: **How long have you been a technical writer?**

P8: Oh my goodness, an actual technical writer, probably ten years. Ten plus. I started out as a word processor and worked in a document production department, so I worked, I got my education through experience. They didn't have technical writing degrees when I was working.

CI: **And how long have you telecommuted?**

P8: I did it about three years.

CI: **And how many days per week did you telecommute?**

P8: Three. Actually, it started at three and I think the last year it was two.

CI: Did you work full or part time in the primary office before beginning to telecommute?

P8: Full time.

CI: And what kind of information products do you produce? What sort of things do you write?

P8: Technical specs, user guides, procedures, administrative, like operating rules, and administrative procedures. Everything.

CI: What are the advantages or benefits that you receive by telecommuting?

P8: Like, what do I think was good about it?

CI: Right.

P8: Well, there's no wasted time of getting up, showering, getting dressed. I mean, I'm an average woman and it takes me about an hour and a half, plus the drive to the office. So, it either gives you more time to work, which means less overtime in the office, or it gives you more time for your home, depending on the workload. So, the time factor is the most beneficial. I'm a solitary person, so for me, it's a chore to go in to the office and have to socialize. I mean, I don't hate that, but my perfect weekend is never having to leave the house. So, for me, working from home, that gave me the best of both worlds. I had the interaction on the phone or by computer but I didn't have to get out, but I think the time factor is the most beneficial to me.

CI: Are there any advantages or benefits that you *expected* to receive from telecommuting that you have not experienced? Something you thought would be really good that just didn't turn out to be so.

P8: Not that I can think of. I can't, I can't think of anything. My experience didn't end well, but that wasn't as a result of disappointment of telecommuting. So, no, it was everything that I expected it to be.

CI: What are the disadvantages to telecommuting that you experienced?

P8: The only disadvantages that I experienced were with management that couldn't handle telecommuting.

CI: By "couldn't handle it," you mean they just weren't comfortable with it?

P8: Yeah. If you weren't in the office they didn't feel like you were working. And I experienced almost more of the watching over the shoulder—the control. When you're in the office you take an hour lunch. You go to the bathroom. You go get coffee. But, what I experienced [while telecommuting] was that if I didn't answer my phone or my

e-mail, and then called back, it was questioned as to where I was. Do you want details? You know, so I found that quite demeaning.

CI: Yeah, no doubt, 'cause if they would come by your cubicle and you weren't there they wouldn't think you were off playing golf.

P8: Exactly. And another disadvantage, this is just for me, is that it wasn't measured by productivity, the success or failure [of telecommuting] wasn't measured by productivity.

CI: Hmm. That's kind of a big deal because you know most people I've talked to seem to think that's what it's all about.

P8: How else do you measure an employee's work? You don't measure by the number of hours they sit in a chair; you measure by their productivity. So, I think that's a function of management. And, I don't want to blame it totally on management. The worker, the telecommuter, and the manager have to be able to communicate and maybe I didn't communicate my concerns well enough. You never know.

CI: Yeah, that's a good point. **Does telecommuting, or did it, increase or decrease your satisfaction with your job?**

P8: Yes, very much increased it.

CI: And primarily just because of the advantages that you mentioned?

P8: Yes, yes. And just the lack of interruptions. I probably actually put in maybe four hours a day of work at the office because of distractions. When you're at home, people don't come over to your cube, they don't, they're not as likely to pick up the phone and call you with a question as they are to walk by your cube. And I found I got a lot more, bigger blocks of time to work on something. And when you're a technical writer, especially if you're reading a technical spec that an analyst wrote, and you're trying to write a user guide from a technical spec, and you've got eight hours that you know no-one is going to bug you. I mean it's a nightmare because people are always coming by and some of it's legitimate and some of it's not.

CI: Sure, exactly, yeah I know. It's when you're writing that it really is an issue because you really have got to stay focused.

P8: Every technical writer should telecommute.

CI: That's good. **Given the advantages you mentioned earlier do you feel that telecommuting is a better option for you than working full time in the primary office?**

P8: Yes.

CI: Do you feel your company's culture supported alternative approaches to work such as telecommuting?

P8: The overall company culture supported it, and still supports it. There are still many people who not only telecommute but work remotely. The particular department that I'm in does not support it, and it's strictly management style. And most of our policies are at managers' discretion. So we don't have a corporate policy that says anything [about making telecommuting a work option].

CI: They can always override.

P8: Right.

CI: Okay. What needs or problems did you or your employer have that telecommuting was intended to address?

P8: We were moving to another office and another writer and I said that we would not relocate. We were in New Jersey, our department was moved from a central location to about 30 miles north and for both of us it meant a horrendous commute and we said we were going to quit and so they said, "How about telecommuting?" and we said, "Fine." And then six months later managers changed. And so we went through about three years of hell.

CI: You say you actually commuted at that point?

P8: Yes.

CI: It seems like, to me, if that was working they should have just left well enough alone.

P8: Well, you'd think. But it's the perception of working, I mean, for us telecommuting was working, but for my manager the perception was it was not working.

CI: So, like you said, you'd think if he or she was getting the same work, if not even more work, and as long as you were making your deadlines, I mean, what else really mattered?

P8: There were major control issues, and it's too bad.

CI: That is too bad. Did your coworkers in the primary office believe you worked just as hard as they did?

P8: Oh, absolutely.

CI: Did your company, especially your immediate supervisor or manager, make changes to the primary office routine to accommodate you or other employees who telecommute?

P8: Not that I know of.

CI: For example, teleconferencing you into meetings or directing employees to address your questions as quickly as possible through either e-mail or calling?

P8: Oh yeah, yeah. Those kinds of things. We're very much a remote-distant company anyway because we have so many offices, so. Oh yes, yes, she did. She accommodated. We teleconferenced a lot.

CI: I ask because office routines can really vary. If you're telecommuting some managers make it clear to coworkers, "Hey, you need to address this person's e-mails as quickly as you can," or whatever, because they're not going to be able to walk by your cubicle.

P8: Well, we have corporate rules, and our rules on telecommuting were that if there was a meeting scheduled that was local that you needed to attend you were to switch your days, which was never a problem. The other thing is we have corporate rules for answering e-mails and voicemails, and it's like within two hours . . . I'm not sure what the policy is, that tells you how good it is. But if you're out of the office more than two hours you're to put an out-of-office message on your voice mail and e-mail to say that I will be back at a certain time. That pretty much covered any problems if you're telecommuting because you'd have an hour to answer, or two hours or whatever, but it seemed, in my circumstance those rules did not apply.

CI: You weren't given the two hours?

P8: Yeah, yeah, it just depended. So that made it a little rough because, especially if you're online, at home it's a little different, you know. You're online and you're on the telephone working, you know, I've had two-hour teleconferencing meetings going over a manual and stuff like that, so I think that was a problem.

CI: Because if somebody else would try to call you the line was busy?

P8: Or go into your voicemail, and then you wouldn't get back to them for half an hour, so it seemed like, yes we had the rules set up and we made those accommodations, but somewhere along the line, the lines, the rules got a little fuzzy.

CI: Did you require or receive additional technical training when you began telecommuting?

P8: No.

CI: Did you feel you needed more, less or about the same level of technical or IT support as employees who worked in the primary office?

P8: Yes.

CI: And why was that? I would think you would need more.

P8: I had a laptop. Once I was set up, and I'm very computer illiterate, I just took care of my own problems. I didn't have any issues.

CI: But do you think that your computer illiteracy means that you're probably going to need the same amount of IT support at home as you do in the office?

P8: Yeah. Oh, yes, I see what your question is . . . the same. So, yeah.

CI: Did your company implement additional security measures such as installing security software such as firewalls on its host computer system to maintain the confidentiality of the information transmitted to and from employees who telecommuted?

P8: No, we have a major, major firewall. We have probably the highest firewall . . . in fact, we have to go in through a RAZ server, we don't have FTP, we're just now getting it, FTP, or web site access to our company, because our servers are so confidential.

CI: So there was already huge security on there.

P8: Oh yes. Yeah.

CI: I ask because some people would say, "No, I put stuff on diskette and just threw it in my briefcase and went home with it." And would send work back through e-mail or whatever, there wasn't a sense of any real confidentiality.

P8: We're careful. We're very, very careful because we are dealing with peoples' money.

CI: That's important. How long ago was it that you did the telecommuting in New Jersey?

P8: Three years ago, oh, in New Jersey.

CI: Yeah, is that when you telecommuted?

P8: I started in New Jersey and telecommuted here in Colorado also.

CI: So that was from like what period to what period, approximately?

P8: In think 1997 to 2000. You know, three and a half years in there . . .

CI: I had to clarify that because of the way the next question starts. It starts "In the past two years," but it's maybe more like "**in the past four years, did you or your company purchase additional computer equipment that was required for you to telecommute?**"

P8: No, because I already had a laptop. Did they get me anything else? A printer. I had a little laser printer, and phone lines. And they paid for everything.

CI: **Did you feel you could stop telecommuting anytime you wanted to when you were doing it?**

P8: Oh yeah.

CI: It sounds like. I ask that because some people, for example, if they get you printers and phone lines and then you tell the company "Well, I changed my mind," they're like, "Oh no, you can't."

P8: Oh no. In fact, we had a little agreement that anytime either party, the company being one part, did not agree with it anymore, we could stop it. No, that's fine.

CI: **Did your company's telecommuting program have a formal structure that governed all employees that telecommuted, or an informal structure?**

P8: Informal.

CI: But you just said you had an agreement.

P8: Yeah, but it was just with me and this other woman, and it was just to protect the company, I think.

CI: Okay, but at that time did they have the two-hour e-mail or call back policy in place or was that more of a company rule?

P8: That was for everyone. Yeah, that was whether you worked in the office or not.

CI: **Did you feel that some of the time you spent in the primary office was required as a visual confirmation to management and coworkers that you were a "real" employee?**

P8: Yes, yes.

CI: And, again, is this because of the issues with that one manager?

P8: In the beginning, with the original manager it was but you didn't feel negative about it. I can't think of the word. It was, "Hey, cool, you're going to let me work from home three days, I'm more than happy to come in for two, schmooze with whoever you want me to schmooze with." I didn't feel that my manager was doing it because he felt he couldn't trust me. When the new manager came in that was a whole other ballgame and then.

CI: And then you went in for those reasons?

P8: Yes and it was more like, “Well at least I’ve got control over you over these days.” And that’s not, as a mature adult and professional that’s not conducive to good work.

CI: Not to read too much into it, but I usually find that people who have those suspicions are the people who are mostly projected their stuff, you know?

P8: Don’t even get me started! That’s that was my line.

CI: It’s their own weakness that they’re worried about, not yours.

P8: Yup, yup.

CI: That was my own interpretation.

P8: I think that’s pretty logical and pretty safe to think about that. And the manager is still my manager and I can definitely say in that case it’s a fact. So, oh well.

CI: **On days that you telecommuted how was your productivity measured by your immediate supervisor or manager?** It sounds like from what you’re saying that it kind of started off being about productivity and then became about something else.

P8: Yeah, yeah. There was a bad period in there. Before the bad period and now it’s all about productivity, nobody watches, no.

CI: The other half of this question is, **does the same measure apply to coworkers in the primary office?**

P8: Yes.

CI: **Do you feel your immediate supervisor or managers valued your work as much as employees who worked in the primary office?**

P8: No.

CI: And that’s, again, just because of the issues he or she had with telecommuting? And somehow thought that you were taking four hour lunches and that sort of thing?

P8: Yes. And the sad part about it was that during that bad period of time leading up to the time that telecommuting was ended, when we did our year-end stats, we had increased our productivity. Which was really sad; [losing the option to telecommute] was hard, it was really hard.

CI: **In the wake of the current economic recession, do you feel your workload has increased, decreased, or stayed about the same?**

P8: Increased.

CI: **Do you feel *your employer* was more or less inclined to have you telecommute given the economic recession?** At the time, of course in 2000, it really didn't start did it?

P8: No, it had nothing to do with it.

CI: And so it just didn't have that much of an effect on it.

P8: No, and even now, my company, if I were telecommuting right now, the economics would not have an impact. They don't do it for cube sharing or anything like that.

CI: **Did *you* feel more or less inclined to telecommute given the economic recession?**

P8: Definitely. I'd do it again in a heartbeat.

CI: **Do you feel *your employer* was more or less inclined to have you telecommute after the events of September 11?** It doesn't sound like you were even telecommuting by the time that happened.

P8: No, and I've mentioned the subject, I mention it quarterly, about reinstating telecommuting, and the response is "Don't start on that again." "Okay, well I'll talk to you again."

CI: **And the other question is do *you* feel more or less inclined to telecommute after the events of September 11?**

P8: September 11 would have no bearing on that at all.

CI: Yeah, so you don't feel a greater need to stay home since September 11 as opposed to commuting?

P8: No, I'd just rather be working from home all the time ever, forever. No, September 11 didn't affect me.

CI: **Do you have concerns about acts of terrorism being committed at your primary office?**

P8: Yes. Not so much in [The Primary Office] but because we are a switch, I mean banks all over the nation are connected to us and transactions come through us. We have phenomenal security, I mean they were in lock-down when September 11 happened. And that was a major concern of our company and all other companies like ours, is that terrorists would either hack into the system or actually attack the physical system. And I think about it a lot when I go to corporate in New Jersey; I think about how vulnerable we are. I don't think the company's vulnerable because I think they've taken all the precautions. But, oh yeah, I think about it.

CI: Yeah, somebody could still drive a truck up to the front gate, right? And blow it up?

P8: Yeah, when you're in New Jersey, when you're in that atmosphere, and I lived there for quite a while, we used to drive by on a regular basis the actual apartment or the meeting place of the man that did the first World Trade Center bombings. It's something you live with all the time, so I think if I had lived in Colorado all my life I wouldn't think about it as much as I do.

CI: Because of experience?

P8: Because of my experience on the east coast. It doesn't affect me; I think about it, but it's not like I'm scared to go to work or anything like that.

CI: And last question, if the decision to telecommute was solely yours would you want to telecommute again?

P8: Yes. Yes.

CI: Any other comments about either telecommuting or economic things or September 11?

P8: When I first started telecommuting I couldn't imagine anyone not wanting to. And now I realize that there are people that cannot work at home either for the socialization, they don't like the isolation of working at home, or they're the kind of people—and this is the problem in my situation with my manager and my manager's boss—who cannot work at home because they get distracted. And they're very honest about it. But they transfer that to us. So, I understand that there are different people and it would just be wonderful if corporate, well I work for a financial industry, and they're about 20 years behind times in everything anyway. Pay is lower, hours are weird, dress codes are high, you know, it's like being in a bank. It's better than that, I mean it's not that bad, but it would just be so nice if somehow you could just zap the magic button and have people that are in management trust their employees based on each individual employee's merit rather than their own insecurities. And I think that's the biggest detriment to telecommuting.

CI: Right, and we've seen college students these days who can watch television, listen to the stereo, do their homework at the same time. Now, I can't do that, I couldn't even imagine doing that, but they somehow have this ability to kind of pick and choose what they pay attention to.

P8: My husband, he is a quiet person, now he likes the house like this. I'm freaking out. It's too quiet. And the first thing I do when I walk in the door is I turn the TV on, and I don't sit and watch TV but I have it going and during the day when I'm working, I turn the TV on and I turn it low, and I don't watch anything that requires anything, you know, I don't watch talk shows or anything like that, just like old movies or something like that, and I can literally sit at my desk and work for six hours and go, "Oh, my God, it's time to take a break." And so for me that environment is just perfect for working.

CI: Yeah. But the background noise at the office doesn't have the same effect because of all the interruptions?

P8: Yeah, I don't hear the background noise at the office. I think you learn to tune that out and it doesn't bother me, but it's the interruptions. Because I'm kind of the go-to person, I'm the senior writer, and a lot of people will come to me just for tech, for computer stuff, but also the other writers come to me and so I'm constantly being interrupted, and that's [the problem]. If I wanted to be a manager I would have followed that path a long time ago, I don't want to be a manager.

CI: Do you think given the fact that you're a senior technical writer that it would make it harder for you to telecommute from home because other people do need a lot of those questions answered?

P8: No they could call me.

CI: Okay, they don't need a face-to-face.

P8: No, most of the calls I get are from New Jersey. You know. But if the writers in [The Primary Office] need me, all they have to do is call. But I think sometimes when you're there it's easier to ask than to try and figure it out yourself.

CI: That's true, I think most people fall into that.

P8: And everything that they ask I had to figure out by myself. And so sometimes I've actually put signs on my cube, "Do not disturb." Because I have to get something done.

CI: Well thank you. That was it.

P8: Oh good!