

Trends in Telework Outreach and Training

Report:

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Section 1

Introduction

From the early 1990s, the Oregon Department of Energy (ODOE) has provided technical assistance and outreach services on telework to organizations throughout the state. Outreach included a grant agreement with Metro to assist employers in the Portland metro area. ODOE's role was to provide assistance to organizations including educational and training materials, consultations, presentations, training sessions, assistance with the Oregon Business Energy Tax Credit (BETC) program, and ODOE's telework Web site.

For the past three years since 2003, ODOE has not provided direct assistance with education and training materials. During that time, audio/video, computing, and communications technology has advanced significantly. Thus, the Oregon Department of Energy (ODOE) seeks to update its telework education and training materials to incorporate current trends and issues in the area of telework and to use current communications media.

Interest in telework first began in the United States in the early 1970s with Jack Nilles' research on the tradeoffs between telecommuting and transportation (Office of Personnel Management). In 1990, the federal government funded a one-year pilot program to study the benefits of flexible workplace arrangements which included telecommuting. The pilot found that telecommuting was a viable strategy for recruiting and retaining qualified staff while reducing costs (Office of Personnel Management). During the 1990s, advances in technology made telecommuting more practical. Increased concerns over environmental issues, post 9/11 security concerns, rising energy costs, and desires to ensure business continuity in the face of natural disasters, have sparked resurgence in interest in teleworking.

Because of this increasing interest, ODOE has contracted with Community Planning Workshop to assess the current state of telework and effective training and outreach strategies at both the state and national level. Understanding the trends and attitudes as they are described in this report will help ODOE develop new training materials that will assist businesses throughout the state in developing their own telework programs.

Purpose and Methods

The purpose of this report is to provide ODOE with information on recent trends in telework and effective approaches to training and outreach programs that will increase participation in telework. This report presents data on trends and attitudes in telework on both a state and national level.

It also assesses ODOE's current telework materials and provides recommendations for how to update these materials. The data, analysis, and recommendations will aid ODOE in further assessing their current telework training materials and the changes that need to be made to make those materials more effective.

CPW used two methods to prepare this report: (1) a literature review; and (2) case studies of selected telework programs.

Literature Review

The literature review incorporated approximately 35 scholarly articles, magazine articles and other sources. ODOE provided nine questions relating to telework that framed the literature review. The literature review section of this report summarizes the main themes derived from the literature.

Case Studies

CPW conducted four case studies – two with organizations that practice telework and three with organizations that train businesses to implement a telework program. The case studies included background research on each organization via the Internet, and a follow-up interview with a key person at the organization. The interview questions can be found in Appendix B of this report.

Organization of this Report

The remainder of this report is organized as follows:

- **Section 2: Literature Review** is an overview of the state of telework based on nine questions posed by ODOE.
- **Section 3: Case Studies** are a review of two companies that have telework programs, and three companies that train others how to telework.
- **Section 4: Key Considerations and Recommendations** provides a high level summary of how well current ODOE materials include recommended elements and what ODOE can do to improve current materials.

This report also includes the following appendices:

- **Appendix A: Summary of ODOE Materials** provides a brief description of each element of the ODOE training materials as they currently exist.
- **Appendix B: Interview Questions** is a list of the questions asked of each case study participant.

- **Appendix C: Bibliography, Works Cited** is a list of the sources CPW used for the literature review.

Section 2

Literature Review

To frame this study, the Oregon Department of Energy provided nine questions that address trends in telework:

1. What are current attitudes regarding telework (from the perspectives of managers and employees, the private sector and government)?
2. What are the benefits of teleworking? What kinds of problems can a telework arrangement address/solve? (A prolonged illness, ice storms, natural disasters, pandemics, etc.)
3. What are the key issues and solutions currently in the area of telework (e.g., information security, home workplace safety, tax-related issues, and others)?
4. Why do some employees opt out of telework programs?
5. What barriers prevent employees from teleworking, even if they want to?
6. What strategies make employees and managers more comfortable about teleworking?
7. Does organization size affect telework program design?
8. What is the national/state level of telework?
9. What are the current trends and best practices in telework?

These questions were the impetus behind the type of literature that was reviewed and the type of information on which the research team focused. Because there is considerable overlap among the questions, CPW chose not to organize this section around these questions. Instead, it is organized by themes including the state of telework, benefits and barriers to telework, implementation considerations, and the future of telework.

This literature review encompassed a broad set of literature using over 35 resources from a variety of areas including academic journals, popular industry magazines, newspaper articles and informational Web sites.

State of Telework

This section of the literature review discusses telework participation at both a state and national level. This section addresses how many people are teleworking and who exactly engages in telework.

Telework by the Numbers

There are several different estimates as to how many people nationwide engage in telework. Most researchers use the Dieringer Research Group's 2005 study: *American Interactive Survey*, which found that 22.2 million Americans, or about 16.5 percent of the workforce, work from home at least once a week (Arnold, 2006). The Bureau of Transportation Statistics estimated in 2003 that there are about 20 million teleworkers in the United States (Golden, 2006: 319). However, the Dieringer Research Group also found that the number of Americans who performed any kind of work from home increased from 41.3 million in 2003 to 44.4 million in 2004 (www.telcoa.org, Telework Fact Sheet). This difference in numbers exemplifies just how difficult it is to quantify the actual number of teleworkers throughout the country. Regardless of the exact number of teleworkers in the United States, it is clear that the numbers are growing.

Who Teleworks?

Defining exactly who teleworks has never been an easy task. Many people who telework are not full-time employees, but are contract workers brought in to complete specific projects (Bailey and Kurland, 2002: 385). It is difficult to establish exactly what teleworking means. Different studies of telework have employed varying definitions of what qualifies as telework, and thus classify employees differently. The different methodologies used in these studies provide a somewhat muddled picture of exactly who is engaging in telework.

One pilot study conducted in the State of California indicates that teleworkers in the state are about 65 percent male, earn a high income and are highly educated (Olszweski and Mohktarian, 1994 as cited in Bailey and Kurland, 2002: 385). These findings closely parallel what was found in a large study of Finnish workers. However, Bailey and Kurland argue that due to the nebulous nature of telework, it may be impossible to ever exactly know the demographics of teleworkers.

Determining which positions are best suited for telework is not always an easy task. Bailey and Kurland argue that it is far better to measure perceived job suitability than to suggest job characteristics that have general suitability for telework. In essence, an employee will only seek to engage in telework if he or she feels that his work is suited to such an endeavor (Bailey and Kurland, 2002: 386). Numerous other scholars, however, argue that telework suitability is more often measured by a set of characteristics, for instance, professional work is more likely to be represented than clerical work in the home office (Haddon and Brynin, 2005: 42). It is unclear if this difference is due to actual job suitability or manager attitudes.

It is also unclear whether firm size is an important factor in determining if a company has a telework program or not. Bailey and Kurland found that managers in large firms are more inclined to introduce telework programs

(Huws et al., 1990), while others have found the exact opposite (Tomaskovic-Devey and Risman, 1993; Zamindar, 1996; all cited in Bailey and Kurland, 2002). A European study, however, finds that organizational size does affect manager's likelihood to undertake telework programs (Clear and Dickson, 2005).

Benefits of Telework

The literature identifies a range of benefits to establishing a telework policy in the workplace. These benefits extend to the employees, the managers and organization, and even to the community at large. Ten years ago, nationwide concerns over the environment, and the possible environmental benefits of telework were the major driving force behind the desire to implement telework programs. While environmental concerns remain relevant, the current literature focuses more on the desire for business continuity as the major impetus for organizations to consider telework.

Employee Benefits

Telework Reduces Stress

Telework can reduce stress by reducing the number of compromises that need to be made between work and family (Johnson, 1994; 1). Stress is also created by having to commute back and forth between the home and office, through teleworking one or more days a week employees can also reduce stress from this source (Johnson, 1994; 1).

Expanded Opportunities for Untraditional Employees

Teleworking can increase employment opportunities for disabled, chronically ill, older, injured, adjudicated and other non-traditional employees that may face barriers to entering or returning to the workforce. In Arizona, Best Western employs inmates at correctional facilities as reservation agents. The inmates receive the same salary as their non-prison workers; part of their earnings goes to victim restitution and to the State of Arizona to pay for their incarceration expenses (U.S. Dept. of Transportation, 1992).

Bircout's (2004;1) literature review found that "employment plays an important role in the psycho-social well being, health status, life satisfaction, and community reintegration of individuals with a spinal cord injury, in addition to providing financial resources important to independent living." Teleworking can be a strategy to support people with spinal cord injuries return to work through the "removal of mobility barriers, reduction of employer bias, knowledge or information-based work, flexible supports, and opportunities for career learning and growth" (Bircout, 2004; 4).

Telework can also extend the working life of older workers who still want to participate in the workforce by allowing them to "semi-retire," provide

expanded employment opportunities for rural areas, and allow workers the flexibility to provide in-home elder care.

Telework Increases Time with Family

Because commuting time is saved by telework, more time can be spent with family and friends (Johnson, 1994; 1). In addition, telework increases job flexibility which allows teleworkers to choose the time that they do work. This means if a teleworker needs to put in long hours, they can do so after their children go to bed. Being available for meal times and important after-school activities can often increase family bonds (Johnson, 1994). Teleworking can also help workers stay in the workplace while providing care for an elder. Increased time with family is often cited as one of the number one reasons employees are drawn to telework opportunities (Schellenbarger, 1997 as cited in Hill et al. 1998).

Others, however, have found that telework actually blurs the line between work and family life (Hill, 1998). Hill (1998) points out that for telework to benefit family life, teleworkers may need to find new cues to let them know when to stop.

Telework Increases Job Satisfaction and Employee Retention

Telework also has the ability to increase employees' satisfaction with their job. It is often the increased job flexibility, and lack of interruptions, that leads to this increase in job satisfaction (Baruch, 2000; Bailey and Kurland, 2002).

This increase in job satisfaction can also be a benefit to managers and organizations because they can use teleworking opportunities to attract and retain employees (Telecommuting and Remote Access). Some employees who might otherwise have to leave the workplace (pregnant women, a newly disabled employee) may be able to continue working remotely with the implementation of a telework policy (Montero Consulting). Being able to retain trained employees saves businesses in recruiting, hiring, and training costs.

Manager/Organizational Benefits

Telework Increases Productivity

Increased productivity is cited as one of the number one benefits that employers receive from telework. Bailey and Kurland state, "...stories of increased worker productivity among teleworkers are rampant in the practitioner press. For example, 87 percent of employees in IBM's alternative workplace program report that they believe their productivity and effectiveness have increased "significantly" (Bailey, Kurland 2002: 389).

Increased productivity mostly results from time saved on commuting. Workers no longer have to waste time in the morning on preparing to be presentable for a work environment (Johnson, 1994). While employees may still choose to "dress for work," they will save additional time by avoiding

the idle chatter of the office and other unwelcome interruptions that decrease work productivity (Johnson, 1994).

These tales of increased productivity run counter to one of managers' biggest fears, namely that if they cannot see the employee, then they must not be working. The fact that telework actually increases productivity will help to put many managers' minds at ease.

Telework Reduces Costs

Another great benefit to managers and organizations is that telework reduces costs. These lower costs come from reduced real estate and overhead costs, as well as reduced costs on cars (if provided by the company) and time (Bailey and Kurland, 2002; Baruch, 2000). After figuring in rent and operating costs, Northern Telecom estimates it saves \$2,000 annually for each employee because it does not have to provide with a 64 square-foot-office space (Cascio, 2000;81). Of course, the actual savings realized will vary by location and organization, but some organizations have estimated a company will save \$2 for every \$1 invested in telework (Cascio, 2000;81).

In Oregon, organizations that implement a telework program may be eligible for the Oregon Business Energy Tax Credit. Organizations that purchase equipment to support the implementation of a telework program may be eligible for the tax credit. The tax credit covers up to 35percent of the eligible program's cost, these savings are spread over five years (Business Energy Tax Credits). The Business Energy Tax Credit is another way that telework can help businesses within the state cut costs.

Many managers and organizations are concerned about the initial and ongoing costs of telework. Several organizations have developed calculators that help managers to assess their savings from telework. One particularly useful tool is provided by Commuter Challenge (www.commuterchallenge.com). This cost/benefit analysis tool helps managers and organizations assess the viability of implementing a telework program.

Reducing costs is beneficial to managers for many reasons. Extra revenue can be funneled into hiring additional staff for projects, increase resources within office, or improve information technology (IT) capabilities within the office and for teleworkers.

Telework Retains Valuable Employees

As the baby boom generation retires, it is estimated by 2008 that 24 million employees could exit the workplace; leaving 4.6 million jobs unfilled (Pitts-Catsouphe & Smyer, March 2006; 2). In addition to facing difficulty finding qualified employees to fill these vacancies, businesses will also lose the valuable knowledge, skills, and abilities of these mature employees. Pitts-Catsouphe & Smyer (March 2006; 1) found that many older workers

who “retire” and re-enter the workforce wanted more flexibility than their pre-retirement job offered.

Telework can extend the work life of valuable employees. Telework helps retain employees by offering increased flexibility, decreased working hours, reduced commuting, and the ability to work from anywhere. This can allow workers to “semi-retire” while still being able to travel, pursue personal interests, and attend to family needs.

Telework Allows for Compliance with Federal Regulations

Teleworking also allows managers and organizations to maintain compliance with federal regulations. As of 2000, a telework policy is required by the Federal Government for all Federal Agencies (GSA/OPM Telework site). A survey of federal agencies conducted by the Telework Coalition in 2004 found that 85 percent of respondent agencies were in compliance with this regulation by having a telework policy in place. The survey also concluded that federal teleworking is growing; between 2003 and 2004, the number of federal teleworkers increased 37 percent from 102,921 to 140,694. Also, telework is an important component of the Federal Government’s Continuity of Operations Program (COOP) and of individual agency’s COOPs (The Telework Coalition, 2003).

Teleworking also provides an opportunity for a broad range of organizations to comply with the Americans with Disabilities Act of 1990. This Act requires that companies not discriminate during hiring on the basis of disability as long as the employee can adequately perform the required tasks. Health-related teleworking provides an opportunity for disabled individuals who need an accommodation or for employees experiencing short-term health problems to produce work without physically coming to the office (Bailey and Kurland, 2002; Baruch, 2000). The Telework Coalition (2003) found that between 2001 and 2003, health-related teleworking increased throughout federal agencies by 120 percent.

Telework Aids Business Continuity

One of the biggest challenges facing employers today is the question of how the company will fare in the face of a natural disaster or other type of emergency. If companies establish a teleworking policy, even one to only be used in the event of an emergency, they are much more likely to experience nearly seamless business continuity when disaster strikes (Telework: Smart Addition to Business Continuity Plans). The ability to keep working when other companies are shut down allows organizations to increase customer base and enhance customer loyalty (Telework: Smart Addition to Business Continuity Plans).

The purpose of a business continuity plan is designed to allow businesses to continue to perform critical functions when an incident has interrupted normal business functions (Telework Exchange Resource Center). A telework component can be a critical part of a business continuity plan.

Necessary elements of a telework component for a business continuity plan include:

- Determining which critical business functions need to be on-line first;
- Determining who is already set-up to telework, or who could easily make the transition;
- Determining whether there is a way to connect to the company's server remotely, and ensuring that there is a back-up connection in case the primary connection fails; and
- Developing a telework kit for full-time and ad-hoc teleworkers and ensure that all employees are familiar with it. (Provided by: Telework: Smart Add)

The Telework Advisory Council to WorldatWork (a not-for-profit organization dedicated to advancing telework) also provides a comprehensive report on business continuity and what companies can do to integrate telework into their plans.¹ Additionally, Intel and HP offer a variety of networking solutions to aid in ensuring business continuity (Bosman et al., 2006). These are just two of the companies that have developed products aimed at ensuring business continuity.

Community Benefits

Telework Conserves Energy

Telework conserves energy because it requires less resource output than traditional work structures. Richard Johnson points out that telework saves energy in three main areas: vehicle-related materials and resources, highway related materials and resources and office related materials and resources (Johnson, 1994). Teleworking avoids the massive amount of resources needed to provide transportation and a suitable place to work. Teleworking "requires only modest incremental demands on energy for heating, cooling and lighting needs, and makes effective use of existing building space and facilities" (Johnson, 1994). These energy savings will become increasingly important as global warming and other energy-related concerns come to the forefront of the national conscience.

Telework Preserves & Conserves Our Environment

Telework preserves our environment by reducing the number of vehicles on the road, thus reducing the need for additional land for highway expansion and for parking lots and spaces (Johnson, 1994). Telework also reduces the footprint of buildings; which benefits the environment and lowers real estate costs. IBM estimates it saves 40 percent to 60 percent each

¹ This report is available at:
<http://www.workingfromanywhere.org/telework/twaresearch.htm> in PDF format

year at each of its site by only having the essential office space and relying on telework (Cascio, 2000;81)

In urban areas, single car transportation is the leading cause of emissions and poor air quality (Dept. of Transportation, 1992). It is estimated that the average federal employee that commutes five days a week contributes eight tons of pollutants yearly to the environment (Telework Exchange, Nov. 2005). By reducing vehicle miles traveled, teleworking can reduce air pollution due to automobile emissions. It also protects our environment by reducing congestion and thus, reducing the amount of slow-moving vehicle emissions (Johnson, 1994; Shin et al., 2000).

The reduction in commuting also reduces the need for, and dependence on gasoline, which is a limited resource (Shin et al., 2000). The Telework Exchange estimates that if white collar commuters teleworked two days out of a five day work week, 233.3 millions gallons of gasoline would be saved a week (Telework Exchange, Oct. 2005).

Telework Promotes Safety

Telework also promotes safety by reducing the number of people on the roadways (Johnson, 1994). A large number of traffic accidents occur during rush hours when people are hurrying to get to work on time. Often, a driver's attention is not on the road because they have made the trip so many times that they are focusing on other things (Johnson, 1994). The U.S. Dept. of Transportation estimated that telecommuting saved 87 lives and prevented 28,520 accidents in 1992. Teleworking reduces the amount of time that people are spending on the road, reducing frustration and increasing safety.

Telework is a Viable Transportation Demand Strategy

Transportation demand strategies attempt to improve transportation related problems (e.g. congestion, improving trip time predictability, single use automobile dependence) by using transportation resources more efficiently. Telework is a promising effective transportation demand strategy. According to the U.S. Department of Transportation, patterns are emerging from evaluations of several telework programs:

- Commute travel is reduced;
- Non-commute trips do not increase;
- Telecommuters make proportionally fewer linked trips;
- Telecommuters tend to shift activities to destinations closer to home;
- Proportionally fewer peak period trips are made when telecommuting; and

- Evidence regarding the impact of telecommuting on residential relocation is mixed (U.S. Dept. of Transportation, 1992;63).

Barriers to Telework

While there are numerous benefits to telework, there are also many barriers that keep both employees and employers from pursuing a telework strategy. This section discusses these barriers which include attitudes towards telework, IT issues, and security concerns.

Telework Requires an Attitude Shift

According to the literature, one of the main barriers to telework is the manager's reticence to accept telework into the workplace (Anderson, 2006; Bailey and Kurland, 2002; Shin et al., 2002). Managers often see no reason to change current work methods (Bailey and Kurland, 2002). Managers also worry about the inability to properly supervise employees, they fear a lack of interaction between employee and supervisor and they are concerned about a potential loss of productivity (Bailey and Kurland, 2002; Shin et al., 2002).

Much of the literature indicates that telework necessitates a cultural shift within organizations. Managers need to be ready for this shift and prepare themselves to transition smoothly. Managers need to learn to manage by results rather than by counting the hours an employee is at his/her desk. Other research suggests that managers will need to switch from "before-the-fact approval" to "after-the-fact review" (DiMartino and Wirth, 1990: 543). This type of attitude shift is necessitated by the fact that the manager cannot see the employee every minute of every day. Managers must be prepared to evaluate the employees on what work they produce, not on how they go about producing it.

Although employees are often the impetus for instituting a telework plan, they too have some negative attitudes concerning telework. Even if a manager thinks that an employee may be suitable for telework, many employees will resist this opportunity based on their own perceived unsuitability (Bailey and Kurland, 2002: 386). This self-perception may lead employees to shy away from telework opportunities, or cause them to avoid seeking out the possibility of telework altogether.

Other employee barriers include a fear that they lack the personal discipline to be successful at telework, concern that household distractions will detract from work and a family make-up that does not demand consideration of telework opportunities (Bailey and Kurland, 2002: 386).

Other employees that remain at the office may also become resentful of the teleworking employee. These employees may feel that the teleworker is not required to do as many tasks (take customer calls etc.), or feels they are "too important" to be bothered with being part of the cohesive work environment (Bailey and Kurland, 2002: 391).

Finally, the preference to work in a team and a tendency towards workaholism may lead employees to avoid telework or fail to consider it at all (Bailey and Kurland, 2002: 386).

This type of attitudinal approach to telework has to change before a telework policy will ever be adopted within an organization. This attitudinal shift can usually be achieved through proper training about, and awareness of, telework programs. These training approaches will be discussed in the Solutions section.

Telework Presents Numerous Information Technology Issues

Another barrier to telework is the level of Information Technology (IT) knowledge and equipment required to successfully implement a telework program. Many firms that would like to practice telework do not have the financial or technical resources to make that a reality. This point is highlighted by the case of many federal agencies; while they are required to expand their telework policies, it has been found that most lack the resources to do so (Bednarz, 2006;27). In addition to not having the resources, most federal agencies do not have a policy in place for necessary additional IT spending (Bednarz, 2006;27).

When companies consider implementing a telework policy, they often do not plan for the IT expenditures associated with a remote workforce (e.g. equipment, maintenance, logistical support, and replacement costs). In addition, when the start-up cost is considered, many smaller firms find it to be an insurmountable burden (Bailey and Kurland, 2002;388).

The IT needs for telework are different than those needed in the office. With less "face-time," employees, work groups, managers and clients may have to rely more on technology to interact. According to Microsoft, some of the most common challenges that employees and employers face when it comes to working remotely are accountability, continuity, security and collaboration (Brubaker et al., 2006). Microsoft offers a number of products (mostly through its Microsoft Office Suite) that enables managers, teams and remote employees to work almost seamlessly, as though they were all in one place (Brubaker et al., 2006).

Telework Causes Security Concerns

Along with concerns over providing the proper IT equipment needed, many managers, employers and employees worry about the security of sensitive data. A data breach occurs when information held by an "individual, company, or government agency is mishandled, lost, or stolen resulting in confidential information falling into the wrong hands" (Cyber Security Industry Alliance, 2007). This could include confidential information on clients (e.g. social security numbers, medical information, driver's licenses, financial account information) or confidential company information (e.g. product designs, business plans, intellectual property). There have been many cases in the news recently in which sensitive data has been stolen from computers or employee's homes. These reports

appear to have made already reticent managers more resistant to the idea of adopting telework policies. In addition, employees and managers may become nervous about the possibility of being fired from their job if data is stolen from their home computer.

The Internet also poses security risks. As Kuhn explains,

“With dedicated broadband connections, a computer is connected to the Internet – and capable of sending and receiving data – whenever it is on. If the computer is turned on in the morning and off in the evening, connection time may be 10 – 14 hours a day, which significantly increases the risk that the computer may be attacked. Even though a user may be using the machine only a few hours each day, the machine remains connected to the Internet and therefore vulnerable to attack.” (2002;14).

Clients may also be wary of contracting with a firm they know practices telework if they are concerned about the security of their data. There are two ways that organizations can address the problem of security concerns, through organizational policy development and through a number of IT solutions. These approaches will be discussed in the Implementation Considerations section.

Ergonomics & Home Office Design

The literature suggests few employers monitor or train employees on proper ergonomics for their home office. In a 2004 study of 50 randomly sampled teleworkers, over 85 percent of participants had not received training on ergonomics but 44 percent reported having pain or discomfort while working from home (Harrington & Walker). Employees who received ergonomics training as part of the study were found to be much more likely to take steps to make their offices more ergonomically correct than those who did not receive the training.

When workers are injured, businesses pay direct and indirect costs. Direct costs include payments made to the worker and their health provider. Indirect costs of worker injuries include a loss of productivity, overtime, training and replacement, and potentially raised insurance premiums (Michael, 2002). Repetitive stress injuries associated with computer use are on the rise. A study by OSHA concluded that employees diagnosed with carpal tunnel syndrome miss 25 workdays on average and the cost to treat each case averages \$22,000. OSHA estimated that it would cost only \$150 to provide ergonomically correct workplaces to minimize such injuries (Winkle, 2000).

Potential Taxation Deterrent

In some situations, teleworkers who work in a state other than the one where they reside in may be taxed on their earned income twice. This occurs when a worker telecommutes to a company outside of their state of residence and then must pay income taxes in their home state and also in the state where they telework. For example, New York requires

nonresident teleworkers to pay tax on 100 percent of their income. If a worker lives in Connecticut, they are taxed again on their earned income (PRWeb, 2006). The frequency of this double taxation is unknown; and no incidents outside of New York were found during this literature review.

Implementation Considerations

The literature review found that employee attitudes, information security concerns, and information technology were common barriers to implementing telework programs. The following section draws on the literature to suggest ways organizations can overcome these barriers and implement successful telework programs.

Employee Training and Support is Essential

Training is essential to the success of telework programs (Futrend Telework Training) and should be a part of implementation from the very beginning. A lack of training and communication difficulties is the most common reasons teleworking programs fail (Piskurich, 1996;24). It is important organizations understand the transition to teleworking will be stressful, but that training can minimize the stress and chaos associated with organizational change. Training can help organizations:

- Learn more about the benefits and challenges of telework
- Address concerns of both managers and employees before they become an issue
- Define “teleworking” and set clear expectations
- Educate teleworkers and managers on teleworking policies and procedures (e.g. technology, ergonomics and home office design)
- Provide IT training and protocols for logistical support
- Provide professional development; managers learn to “manage by results” and employees learn skills to become productive remote workers

In addition to initial and new hire trainings, on-going employee support is an equally important training component but often overlooked by companies. Gil Gordon, a national teleworking training expert, states that training should become, “as routine as any other training that you’d expect to happen normally in an organization. That means that it’s not offered once, but on some regular interval” (as quoted in Gensing-Pophal, 1998). Trainings on a regular basis help reinforce positive work habits, provide an opportunity for “face-time,” and keep employees up-to-date with technology and policy changes.

Plan for IT Support & Investments

A study conducted for the U.S. General Services Administration found that establishing formal arrangements for IT support for teleworkers was “essential” to the success of a telework program (This study can be found at: <http://www.gsa.gov/telework> in Word format). Remote workers have increased IT needs; providing logistical support minimizes downtime.

Another study completed for the U.S. General Service Administration found that in most federal agencies, IT required for teleworking was not a part of the agency’s strategic budget plan; resulting in ill-equipped teleworkers (Booz, Allen, Hamilton, 2007). If a teleworker does not have the appropriate technology to complete their jobs, the organization will suffer from a loss of productivity and increased security risks. It is important that organizations plan for both short-term and long-term investments in IT infrastructure for teleworkers. IT infrastructure includes everything that supports the flow and processing of information. This includes the physical hardware used to interconnect computers, routers, software, servers, operating systems, computers, mobile devices, storage and networking.

Develop Security Protocols

Information security is a top concern of companies desiring to implement a telework program. Information security refers to the process of protecting against data breaches. As stated above, there have been several news stories of lost or stolen sensitive data recently. Incidences at the VA, the IRS and the Social Security Administration all resulted from laptops that were stolen or lost while being used outside the office (Curl, 2006). However, security fears should not deter companies from implementing a telework program.

The Cyber Security Industry Alliance points out that the majority of data losses are because of human error (e.g. accidental deletion, overwrite, losing a laptop, or theft) (2007). Information technology policies and procedures can help prevent data loss due to human error by educating employees on how to protect company data. Policies should include simple strategies employees are expected to use to minimize risk such as not leaving laptops unsupervised, using security cables for laptops when traveling, data back-up and encryption, and using strong passwords for mobile devices.

In addition to safeguarding data by implementing policies and procedures, organizations adopting telework need to provide appropriate security technology for their networks and mobile devices. Security for networks (Internet and intra-net) includes using firewalls to block unauthorized traffic from entering the servers, virus and spyware protection to detect and prevent intrusion, configuring internet browsers appropriately, and using virtual private networks to make sure data transmission is secure.

These are all common ways of protecting against an internet or intra-net data breach.

Companies should also provide appropriate security technology for physical data on mobile storage devices (laptops, desktops at home, PDAs, telephones, video conferencing equipment, etc) (Cyber Security Industry Alliance). Like networks, mobile devices should also be secured with anti-virus and anti-spyware software, properly configured internet browsers adjusted to appropriate security settings, and use firewalls. Mobile devices should also use authentication technology to verify the identities of users, web-sites, and computers. Data should be encrypted to prevent unauthorized users from viewing sensitive information (Cyber Security Industry Alliance).

Policy Development Protects both the Employer and the Employee

In conjunction with proper training and IT development, it is important for organizations to establish policies concerning telework from the outset of the program. Much like training, adopting policies concerning telework will help employees understand things like how to manage security issues, how work is evaluated, and basic expectations. Policies are essential to protect both the employer and the employee.

During training, presumably when the telework agreement is drawn up, it is important to establish whether the teleworker is a full-fledged employee of the company, or whether they are contract employees. This will protect both the employee and the organization (DiMartino and Wirth, 1990: 545).

When an employee engages in telework it is also difficult to enforce health and safety regulations and to make sure the amount of time worked is strictly regulated (DiMartino and Wirth, 1990: 540 and 542). For this reason it is important to clearly cover the relevant regulations and work out with the employee a mechanism for tracking work hours to make sure they do not exceed the limit.

For teleworking to be successful, employees and managers should have a clear understanding of expectations and responsibilities. To this end, a telework program policy should address eligibility for a telework program, procedures for finalizing a telework agreement, and obtaining necessary equipment. Companies should also have a policy on security and technology needs (GSA, A Guide to Telework in the Federal Government: <http://www.opm.gov/pandemic/agency2a-guide.pdf>).

The Future of Telework

With the threat of pandemic flu and the possibility of other national security threats, it is very possible that the number of people who telework will continue to grow. This section addresses the future of telework, and the necessary considerations for that future.

In 2004 the House Committee on Government Reform met to discuss why the many Federal agencies have failed (or been slow) to adopt telework policies as required by Congress. At this hearing Chairman Tom Davis noted that for many years telework has been considered an advantageous or beneficial policy, but is now a necessity of emergency preparedness (Davis, 2004: 1). Davis also notes that the increasing availability and affordability of technology like laptop computers and blackberries makes the location of work less relevant than ever before (House Report, 2004: 1).

While the literature does not attempt to make predictions concerning telework, from Chairman Davis' comments the likely future of telework can be discerned. Concerns over emergency preparedness and the establishment of continuity of operations plans for many businesses almost certainly ensures that the future of telework will be one of growth.

Summary

The number of companies offering telework opportunities has increased 41 percent since 1996 (US Telework Scene, Facts and Stats). While it is unclear what the exact number of teleworkers nationwide is, estimates place it between 11 and 16 percent of the workforce. This means as many as 20 million Americans are taking advantage of telework opportunities.

The largest hurdle that telework programs face is the attitude of middle managers towards the practice of telework. While telework has proven to make employees both more satisfied and more productive, managers remain skeptical. Successful telework practice requires a shift in the way managers approach the management of their employees. Because employees are not constantly present, managers must learn to manage by results rather than by activity.

Similarly, some employees have concerns over the practice of telework. Employees are mainly worried about a feeling of isolation and a loss of social connection with others in the office. These employees are also concerned that they may be passed over for promotion, or that their contribution to the workplace may be perceived as inadequate because they are not always present during normal working hours.

Offering adequate training to both managers and employees can assuage most of these fears. These trainings should address ways that managers can change their process of evaluation, the types of IT available and how employees can cope with feelings of separation and maintain a clear division between work and family.

With rising concerns over national security and the development of continuity of operations plans, it is likely that the number of teleworkers will increase in coming years. Additionally, as awareness of global warming increases, and if gas prices continue to rise, more and more firms and employees may be tempted to seek out telework opportunities. For

these new teleworkers it will be important that they are adequately trained so that their transition from the office to the home can be a smooth one.

Section 3

Case Studies

To refine our understanding of trends in telework and what makes training and outreach programs successful, CPW interviewed five companies about their teleworking activities. Two of the companies use teleworking programs and three companies provide telework training services.

Purpose and Methodology

CPW completed telephone interviews with the five companies. Two separate interview scripts were created – one script for the companies using telework programs and one script for the companies that provide telework training programs. The interviews lasted an average of 40 minutes.

CPW chose to focus on one small-sized company and one large-sized company to compare and contrast their telework programs and their successes and failures. CPW also focused on companies located in Oregon in order for ODOE to understand issues of teleworking specific to ODOE's geographical area.

The two case studies using telework programs are:

1. **Office Space Planners, Inc.** The company employs six people and is located in Portland, Oregon.
2. **Intel.** The company employs approximately 16,500 people and has its headquarters in Hillsboro, Oregon.

The three case studies that provide telework training services are:

1. **Rideworks.** This non-profit company trains companies in Connecticut interested in starting a telework program. Their services are free.
2. **Fleming, LTD.** This telework consulting company is located in Davis, CA; however is no longer providing telework training.
3. **E-works.com, Inc.** This e-learning and consulting company is located in Peach City, GA.

Summary of Key Findings

The key findings from the four case studies are summarized below.

Companies with Telework Programs

- Companies were generally satisfied with their telework systems;

- Overall manager and employee job satisfaction has increased with teleworking;
- Productivity appears to have increased as well;
- Companies suggested that it was important to provide formal telework training for both employees and managers;
- Companies also expressed that it was important to create telework policies that govern the managers and employees; and
- Finally, companies also expressed that it was important to provide proper computer hardware for their teleworkers.

Companies that Provide Telework Training Programs

- These companies stressed that it was important for businesses to realize telework requires an attitude and organizational culture shift;
- Managers will need to learn how to manage by results;
- Times of change are stressful for organizations and the transition to telework is no different. Management must be prepared to lead through the transition;
- Telework must fit with the company's priorities and be seen as a valuable business strategy. Public benefits (e.g. reduced pollution, less traffic congestion) are often secondary reasons for private companies to engage in telework;
- Finally, these companies noted that communication about the expectations of both managers and employees is paramount to a program's success.

The remainder of this chapter discusses in detail CPW's findings from the five case studies.

Case Study: Large Company Using Telework

Background

Intel Corporation is the world's largest semiconductor company and the leading manufacturer of microprocessors in IBM PC-compatible computers. Intel's successful "Intel Inside" advertising campaign of the 1990s made it and its Pentium processor household names. There are around 16,500 employees in Oregon. Intel has provided teleworking to its employees for at least 12 years, and is expanding its number of teleworkers each year because it is more technologically possible and more feasible. At certain points, up to 70 percent of Intel's employees have teleworked at one time. Intel believes employee satisfaction has increased since implementing a telework program.

COMPANY INFORMATION Intel Corporation

Bill Mackenzie, Communications Manager

2111 NE 25th Ave

Hillsboro, OR 97124

(503) 264-1330

Mail address:

JF3-107

5200 NE Elam Young Parkway

Hillsboro, OR 97124

Number of Employees: 16,500

Why telework?

Intel provides teleworking to their employees because they believe it saves the company money. According to the Communications Manager, Intel has a more efficient work force because if employees can work wherever they wish, this flexibility enhances productivity.

Secondly, the company believes teleworking is the right decision to make for greater community issues such as lowering traffic congestion. By allowing employees to telework, they do not have to commute to their office.

Third, Intel uses their telework program as a way to entice potential employees. Their telework policy helps build Intel's image as a great place to work, and can especially attract younger employees. The company recognizes that younger employees care about the footprint of the company. Lastly, teleworking allows employees to have flexible schedules, which is important to many people who have other responsibilities, like caring for children.

Who can telework?

Any of Intel's employees may utilize the telework program, except for employees who hold positions in their factories where they must be present to do their job. Approximately one-third of Intel's employees work on the fabrication side, thus two-thirds of the employees may telework if

they choose. Intel supports telecommuting as a work option when it increases individual productivity without compromising team objectives and results.

Intel's telework policies are flexible. Employees may choose how often they telework, and then notify their manager about their work schedule and follow the Intel telework guidelines. Written guidelines for its teleworkers exist to make employees aware of the telework policies and provide helpful information, tips and resources for setting up a telework arrangement if the employee chooses to do so.

Responsibilities of Teleworkers

At Intel, telecommuters are responsible for learning and complying with all safety and ergonomic requirements when telecommuting, and are required to apply Intel's high workplace safety and ergonomic practice standards whenever they work remotely or at home. Telecommuting guidelines apply to all employees who may elect to work from a remote location one or more days a week on a consistent basis. Almost all Intel employees are provided with a laptop to facilitate mobility. Employees are required to install Broadband at their home if they choose to telework.

Telecommuting does not change the terms or conditions of employment. It only changes the location of work. All telecommuters must follow company guidelines and business principles during work hours. Management approval of these alternative work options is required.

Training Teleworkers

Intel does not have a formal training program for teleworkers. Intel has an online training for installing and accessing their Virtual Private Network (VPN), which is a set of software and hardware that enable a computer to transparently connect to a remote network as if you were physically attached to that network. Through these online trainings teleworkers also learn about the telework policies and guidelines. In addition to these online modules, teleworkers may have individual discussions with their direct manager, but no formal in-person training exists.

Benefits

Overall Benefits to Company

According to Intel, the implementation of teleworking has definitely made the company more efficient in many ways. First, workers do not have to drive to work, wasting the time it takes to drive to and from work that could be spent working. Intel does have initial costs for supporting its teleworkers, like providing laptops and other hardware to the teleworkers. But, the company recovers more than its costs because employees are able to work more, thus producing more. In addition, the company saves costs in other areas. Intel does not have to provide as many parking spaces, as less people work from the offices. As well, when weather does not permit people to travel to the office, they can still work from home. This is a huge

benefit to the company because they continue to be productive, regardless of environmental factors. For example, in January 2004, an intense snow/ice storm caused streets to become impassable for about a week, forcing Intel employees to stay home. Less than 25 percent of employees could make it to the office. A record 8,000 Intel Oregon employees connected remotely to the company's Virtual Private Network (VPN), which held up well.

Benefits to Employees/Managers

Teleworking is family-friendly, and most importantly it recognizes that people have different work styles. For example, some employees may want to stay home for their mornings and come in the afternoon, while others may want to work from a remote location the entire day. The flexibility leads to happier and more productive employees. According to Intel's Communications Manager, employees who have a choice to telework are generally more productive and happier. Because the employees are generally happier, the managers benefit from higher productivity and healthy working relationships with their employees.

Challenges

One of the barriers to teleworking for Intel employees is that there are still times when face-to-face meeting is critical. Intel is still very much a face-to-face meeting company, thus there are times when telecommuting is not practical. The employee must accept the fact they must come together as a team.

Intel's telework program has not caused many barriers for its managers. They reported telework is not a problem because it's part of their culture. Because they do a large percentage of internal communication by email, it is not necessary for everyone to work from the same location.

Lessons Learned/Suggestions

Intel suggests to companies that are starting telework programs to first understand the culture of your company. If a company has never implemented a telework program, it must realize it will change the culture of the company and the company must be open to changing. The company needs to understand teleworking will eliminate the "command and control mentality" and places a lot of trust in their employees. Managers must trust their employees and need to evaluate their employees based on their productivity not their presence at an office. This means that managers need to know how to evaluate their employees work skills, and not base their evaluation on the presence of their employees. Intel recommends the company use a checklist of tasks the employee must complete. The employee should be evaluated on whether they completed their list.

Second, Intel said that the company must have a Virtual Private Network (VPN) system or the company cannot maintain a private system.

Third, employees must be trained on how to access the VPN, as well as how to use the wireless system. Additionally, employees should be trained on how their performance will be measured differently now that they are teleworking.

Intel suggests that managers need to learn not to send the wrong signals to their employees. For example, a manager should not show preference towards an employee who works from the office versus an employee who choose to work from a remote location. This behavior will convey to the team that the employees who work from the office are going to get a bigger raise, thus discouraging teleworking.

As Intel put it, “[Teleworking] really defines the culture of your company and it is not simply a matter of saving money on gas and transportation, but it changes your culture. It increases productivity.”

Case Study: Small Company Using Telework

Background

Office Space Planners, Inc. is a small company in Portland that assists other companies in organizing and designing their office spaces. The company, with six employees, began its telework program almost two years ago.

COMPANY INFORMATION

Office Space Planners, Inc.

Derek Hille, Founder President

9570 SW Barbur Blvd.

Portland, OR 97219

(503) 244-7047

Number of Employees: 6

Why telework?

Office Space Planners chose to implement a telework program for various reasons. First, retaining employees was an important reason for the president to implement a telework program. Another reason is to save time and money that would be needed to train a new employee. After two employees had children, it became necessary for the company to provide teleworking to its employees so they can work from home and care for their children. One of the employees now works completely from home and the other employee works part-time from home. The flexibility with teleworking has enabled the company to retain those employees. Secondly, by teleworking the company uses less energy. The company does not have to provide as much office space.

Who can telework?

All Office Space Planners employees are able to telework if they choose, and all employees do telework at some level. Employees decide when they want to telework. They can choose to work completely away from the office if they choose. The company only requires that at least one person in the office, which is normally the president.

In general, the teleworkers are the project managers and support personnel. As well, two of those employees are new mothers.

Training Teleworkers

Setting up the telework program consisted of a contract employee networking the computers together and physically setting up the systems for each employee. This contractor was also available for troubleshooting set-up issues. Training of the employees consisted mainly of the president visiting each employee at their homes to train them on accessing the company network files.

A few of the employees have Voice Over IP (VOIP) telephones. The VOIP system allows them to answer the work telephone at their home when it rings. As well, they use a Softphone that is connected to a laptop and

works using the Internet and a headset. An employee can talk on the phone through their laptop, as if they were at the office. Thus, someone at the office can transfer a phone call to someone working remotely as if they were in the office. The computers they have at their home are owned by the company and are all networked together.

Responsibilities of Teleworkers

Office Space Planners, Inc. conducts weekly staff meetings. All employees are required to either be present at the office for the meeting or call in. Besides this requirement, employees can choose their own schedules. The meeting helps the company reconnect, because many of the employees telework at least part of the week. As well, the employees' only technical requirement is to have a high-speed Internet connection.

Benefits

Overall Benefits to Company

There have been few cost advantages to implementing the telework program for Office Space Planners, Inc. but telework has provided many other benefits.

First, they have been able to retain employees they may have lost due to family needs of those employees. As well, Oregon Department of Energy (ODOE) offered a tax credit to the company which helped off-set the costs of setting up the telework network. Office Space Planners, Inc. realizes they could probably increase the benefits of their telework program by leasing out their extra, unused office space. But, because the space is initially small, they do not rent it.

As well, employee satisfaction has increased. By simply having the ability to do what they need to do from home, even if they do not commute on a daily basis, improves the level of content of the employees, which directly improves the level of productivity and quality of work for the company. By avoiding the commute to and from work, employees potentially have a little more time to spend on work.

Benefits to Employees/Managers

First, the flexibility of work hours and location is a great benefit to employees. Second, employees do not have to spend time preparing for work – i.e. showering, ironing clothes, making lunch, etc. Lastly, particularly for one employee, they do not have to make their normally long commute to the office.

In addition, each teleworker received a computer, hardware, and software from the company for their home. Employees may use this computer for personal purposes also. There is basically one manager, who works from the office daily. The benefit for him is happier employees who are more productive. Employees seemed very interested in teleworking.

Challenges

Challenges for Employees

A few technical problems have arisen for Office Space Planners. The voice quality is not always perfect if the speed of the connection is slow. As well, because the home computers are sometimes slower than the office computers, working remotely can cause printing issues and other technical difficulties with the design software. Periodically there are these technical issues, but they work with them and it does not overshadow the benefits of teleworking.

Secondly, because the employees all telework to some degree, the company sometimes loses that "team environment."

Challenges for Managers

Keeping track of what employees are actually doing everyday is a little more difficult. As well, potentially employees may work too much because access to work is readily available. The manager needs to be cautious of how much employees are working.

Lessons Learned/Suggestions

Office Space Planners recommends that a company beginning a telework program should be involved with the initial technical set-up of the system. Hire, or have an internal person understand all of the aspects of the system hardware and set-up. For example, make sure the telephone system works properly with the network system. Make sure all parties involved in setting up the telework system are communicating with each other. If possible have an internal staff person be the project manager for the initial set-up of the telework system.

Secondly, research the technology options that can alleviate barriers to communication, like a video system.

Lastly, for larger companies, create a proper training program and telework policies so there is no confusion on what is expected of employees.

Office Space Planners, Inc. foresees continuing to use teleworking as a business strategy in the future.

Case Study: Telework Training Company I.

Background

Rideworks is a non-profit company, established in 1984, with the purpose of helping people commute and telecommute more efficiently. It receives funding from the State and Federal Departments of Transportation for its "Telecommute Connecticut!" program and other commuter service programs. The telecommuter program began eight years ago and is a comprehensive resource that helps employers in Connecticut design, implement and maintain a telecommuting program.

COMPANY INFORMATION

Rideworks, Non-profit Telecommute Connecticut

Jean Stimolo, Founder

195 Church Street
New Haven, CT 06510
(800) 255-7433
telecommutect.com

Number of Employees: 12, plus private consultants

Telework Training Services Provided

Rideworks provides telework training as a free service for any company, organization, or agency in Connecticut who is interested in starting a telework program. They provide varying levels of assistance in their trainings for different size companies. Rideworks trains companies ranging in size from small to mid-size (less than 20 employees to more than 500 employees). Rideworks tailors trainings to the specific needs of every company, thus no two trainings are the same. Rideworks uses a team of private consultants who work with the companies on an individual basis. The consultants focus heavily on the human relations part of teleworking by placing emphasis in their training on the importance of communicating properly between managers and employees. As well, the consultant team helps each company make decisions about the technical hardware and software. The team usually helps companies work with the technology they have, but in some instances they recommend hardware that may be useful to the company.

Rideworks has done a small amount of training for government agencies. Currently they are training the Department of Environmental Protection (DEP) and wish to increase their involvement with the government because government agencies are a good example for other companies.

Typically, Rideworks follows a basic training process for companies:

- **Initial Company Needs-Assessment:** Rideworks assesses the specific needs and concerns of the company, then develops a program tailored to its needs.

- **Pilot Program:** the company tests out their new teleworking program for 3-6 months to confirm if it needs tweaking or is running smoothly.
- **Program is rolled out company-wide:** the company offers the program to all employees that are suitable for telework.
- **Follow-up and Program Evaluation:** evaluate operation of company's program.

Initial Company Needs-Assessment and Pilot Program

The team of consultants visits the company and assesses everything from the type of computer programs, software and hardware they use, to the internal communication of staff. The consultants interview staff, present information about teleworking and answer all staff questions. The interviews help the consultants understand the key reasons the company wants to implement a telework program. The consultants ask questions of the employees and managers, like, "How do you want your employee to work with you?"; "Do they need to check-in in the morning?"; "What are the current policies of checking-in?"

The consultants also help the company create and come to consensus about their new telework policies. After the telework program has been created, Rideworks suggests companies try it for 3-6 months to see if there are problems and if they can work through them. After this pilot program stage, Rideworks assesses if the company needs more assistance or if they are doing well.

Follow-up and Program Evaluation

Rideworks follows up with companies by calling them within a year of their initial assessment. They hold an evaluation meeting with some companies to discuss any issues or concerns. As well, Rideworks provides the companies with a follow-up questionnaire about their satisfaction level with their telework program.

Materials and Support Provided

Rideworks provides different training materials for each company. The Web site provides a variety of materials that cater to different company needs. Rideworks has a variety of forms to aid companies in the training process. The forms include questionnaires about the employees' needs, How-to guides, examples of telework company policies, proposal forms for employees interested in teleworking, and many more.

Benefits of Training

A company can implement a telework program without formal training, but the likelihood of a successful and organized telework program is greatly reduced. Rideworks reports the following benefits for proper training for a company:

- Improved communication between managers and staff
- Telework policies and procedures clearly explained
- Clear understanding of staff and manager work performance expectations

Benefits of Teleworking

Every company experiences different benefits of going through training and beginning a telework program. But, some general benefits of teleworking affect most companies. Rideworks reports that companies trained in a telework program can enjoy the following benefits:

- Companies retain valued employees
- Company costs significantly decrease. Rideworks says the average costs savings is about 10-15 percent. A few of those cost savings include:
 - a. Less need for retraining new employees
 - b. Less office space costs
 - c. Less parking spaces
- Never a need to move office locations for larger space
- Companies can be more flexible and continue to work even in situations that don't permit employees to get to the office, i.e., severe weather, security threats, or disease scares.
- Companies benefit from an increase in employee productivity
- Air quality can improve as less people are driving
- A decrease in traffic congestion can occur
- Companies can improve their internal communication with the help of the consultant team.

Most companies have shown a high level of satisfaction with their training and telework program. Higher productivity levels are usually the most noted reason for company satisfaction. In some instances, companies have reported up to a 60percent increase in productivity of employees. Rideworks believes the reason for this is increase in productivity is a direct cause of its telework training, where managers and staff are taught the proper way to implement a telework program.

Challenges & Concerns

This section details the challenges and concerns that Rideworks has heard expressed by employees and managers during the course of their trainings.

Employees

Rideworks does not usually receive complaints from employees, but could foresee employees being concerned that their manager is not recognizing their hard work in the same way they did when they worked from the office daily. As well, some employees may feel disconnected and separated from the daily operations of the company because they are not physically in the office. To overcome this issue, Rideworks suggests companies require employees and staff to email each other at the beginning of the day, checking in and discussing any pressing issues. The idea of this is to create a connection with each other at the beginning of the day. Rideworks has found this has helped companies immensely with satisfaction levels of telecommuting.

Sometimes employees may feel they are not being recognized for their work the same as another employee who works from the office. The employee may worry his/her managers will not appreciate or be satisfied with their finished product. Employees sometime express fear that they will be passed over for a raise if they do not work from the office. As well, if employees and managers do not put in extra effort to communicate, employees may feel communication has decreased. Additionally, employees have expressed fears of isolation and missing out on the social aspects of the office atmosphere. Companies overcome this issue with such strategies as having a weekly/monthly “company bonding day.”

Managers

Rideworks is not aware of any specific concerns or complaints from managers. Possibly the fact that managers have less face-to-face contact with their employees may strain communication at times. But, in general, managers seem to be satisfied with their telework program.

As well, if managers do not research teleworking, they may become frustrated with easily avoidable situations. Rideworks provides a training video and many forms and documents that are beneficial to managers – but only if they read them.

Outreach/Marketing Strategies

The rollout of Rideworks’ telework program has required them to advertise in a variety of ways, including: billboards, radio, Google Ad words, their own Web site, presenting at conferences, newsletters and through DOT. Their marketing plan includes highlighting the benefits of teleworking, such as the fact that companies receive a tax benefit for teleworking. Rideworks also provides people with information about how teleworking will improve their organization. They have realized that every company is unique, thus they stress different benefits for different

businesses. Companies contact them when they are interested in setting up a program. Interest in teleworking is growing. In 2001, 117,000 people in Connecticut teleworked, now it is up to 158,000 people.

Lessons Learned/Suggestions

Customize Trainings to Companies

Companies want customized assistance from an independent, non-biased outside group who can decide the best approach to training that particular company. They do not want to be prescribed a general training. This is difficult for trainers, but necessary. Trainers must understand each company well and then assess how telework will run for the company, why the company is implementing a telework program, and what the cost savings will be to that particular company. Rideworks understands specifically what the company needs and then caters to its needs.

Companies are concerned about technological issues for their individual company. Rideworks researched network systems and now consult each company on the exact software and hardware they need. Usually, the consultants focus on the company's existing network system and how to work with their system rather than purchase new software and hardware. They always suggest the company has protection for their network. If the consultants view teleworking as an unproductive choice for the company, they may advise the company against it. The trainers also create and use existing documents as good examples for the company. For instance, "Best Practices" and "Telework Policies" documents exist that can be used to help the company develop their own.

Focus on Human Relations

Rideworks stressed the importance of training all employees and managers on the importance of communicating properly, as the company dynamics will change with teleworking. The consultant team focuses much of their training on the human side of teleworking. Companies must realize teleworking is a culture, not just an aspect of their job. As well, companies should use Rideworks' Best Practices guides or create their own. The consultant team meets all staff members who will be affected by teleworking. They stress it is important to assess every department at the company to understand their individual needs and if they should or should not telework. Finally, Rideworks suggests trainers strongly encourage staff to read all of the materials provided to them about teleworking.

Develop a Robust and Knowledgeable Consultant Team

The consultant team is the most important aspect to training companies. In terms of being the most effective trainers, Rideworks emphasizes the need for highly intelligent and competent consultant team. Each person on the team has their strong skills, thus together they can solve each companies issues. The consultant team should consist of at least someone knowledgeable about network software, hardware, phone systems and

someone should be well educated and experienced with the human relations issues, thus understanding the needs of everyone involved. Because every company needs a tailored telework program, the consultant team has to be flexible and creative in solving many different issues. As Rideworks put it – the consultants are like physical trainers. They are there to help you and push you to do things correctly and point out when you are not doing something correctly.

Case Study: Telework Training Company II.

Background

Fleming LTD is a private consulting company founded by David Fleming. Fleming has been working on issues surrounding telework since 1984. Although Fleming works independently he has collaborated with many other experts in the field including Gil Gordon and Jack Nilles. One of the first major projects that Fleming worked on was the Telecommuting Program for the State of California.

COMPANY INFORMATION

Fleming LTD
Telework Consulting
David Fleming, Founder (Retired)

Davis, California, USA
530-756-6430
dfleming@cal.net

Number of Employees: 1, Mr. Fleming works independently

Mr. Fleming is now semi-retired, but he provides information to Washington State Students studying telework. He leaves the information about Fleming LTD on the Internet as a resource for others who might be interested in telework.

Telework Training Services Provided

When Fleming LTD first contacted a company, they would determine whether there was a need for teleworking within the company. Once a need was determined Fleming would offer one training to managers and one to employees. Even though managers and employees were separated for their initial sessions, Fleming and his associates would bring them back together to talk about things they had learned and issues/concerns they still had. After this briefing session was held Fleming would return to hold a planning session with the company after which a prototype program would be implemented.

Fleming and his associates would offer continual training to these companies for about a year. This continuing support was usually under contract, and after about a year companies did not seem to need much assistance. Fleming and his associates would, however, offer support not covered by the contract if the company needed something simple.

Benefits of Training

Mr. Fleming emphasized that the biggest benefit of training was the opportunity to assuage fears. The trainings provided a place for managers and employees to air their concerns and discuss their issues. It also allowed the trainers to address those concerns and lead the group through

workshops to understand the benefits of telework and possible solutions to problems.

Challenges & Concerns

Mr. Fleming said that in his experience the challenges and concerns were much the same for both employees and employers. He said the largest challenge was a resistance to change from managers. Mr. Fleming emphasizes that the largest challenge for managers was to learn to manage by results not by observation.

The largest hurdle for employees was a fear that they were not going to be working. Mr. Fleming said employees felt that they would be isolated from the workplace and that managers may forget about them. This fear of isolation causes many employees to be reticent about the concept of teleworking.

Both employers and employees were worried about the data security of teleworking. Employees were concerned that they may be blamed if data of a sensitive nature was lost or stolen. Employers on the other hand, were worried that other companies or hackers may have access to sensitive information.

Lack of appropriate technological support was another big challenge to companies successfully implementing telework programs. Mr. Fleming suggests that adequately preparing for technological challenges is an important step in easing the fears of both employees and employers.

Outreach/Marketing Strategies

Mr. Fleming stated that is often very difficult for managers to be convinced that telework is a good idea. Mr. Fleming suggests analyzing a company to assess its issues or concerns and then tell them how telework could help to solve those problems. Personalizing the message to the company was important to making the company see how telework could benefit them and their employees.

Lessons Learned/Suggestions

Although Mr. Fleming could not suggest any additional or new trainings, he helped to develop many of ODOE's current materials and feels that they are very useful. Mr. Fleming stressed that the most important thing to keep in mind is that, "work is something you do, not a place you go."

Case Study: Telework Training Company III.

Background

Michael Dziak is the president of two virtual telework training corporations: E-works.com, Inc. and InteleWorks. He has over 15 years of experience assisting private and public organizations implementing telework programs. Mr. Dziak has worked with small businesses to large

corporations; by having strategic partnerships, they can easily scale his services to fit the needs of clients wherever they are located.

COMPANY INFORMATION

E-work.com, Inc.
Enabling Remote Work Excellence

Michael Dziak, President

Peachtree City, GA
770-632-9996
michaeldziak@mindspring.com

Number of Employees: 2

Telework Training Services Provided

E-work.com, Inc. provides e-learning tools and private consultation to companies. The e-learning courses teach employees and managers the skills needed to telework or manage teleworkers. The courses can be customized to meet the needs and budgets of specific organizations by including items such as specific scenarios, logos, and language and are organization into the following topics:

Mobile Employee E-Learning Outline:

1. Course Overview
2. Maintaining Your Relationships & Credibility
3. Managing Your Time, Workload, and Performance
4. Setting Up Your Home Office
5. Course Summary

Mobility Manager E-Learning Outline:

1. Course Overview
2. Establishing a Solid Mobility Foundation
3. Creating and Managing a highly Effective Mobile Work Environment
4. Course Summary

In order for a telework program to be successful, change must also take place at the organizational level. Mr. Dziak also works with executives and human resource personnel to address policies, procedures, and the planning that must be implemented at the organizational level for teleworking to be successful.

The client determines the type and frequency of on-going support. Michael noted it is possible to establish long-term relationships with clients because the e-learning courseware will be constantly updated to stay current with changes in technology and best practices.

Benefits of Training

Mr. Dziak said that change management is the most important resource his company provides. He further explained that transforming from a traditional work environment to a remote environment requires a significant amount of change; each organization has habits and daily activities that have a pedigree in the industrial age. The workplace is a very different place now. E-work.com, Inc. helps get everyone on the same page when an organization desires to move into the communication age. This transition requires taking both a macro-view and a micro-view to bring the whole organization along with the change and not just an individual or two.

Challenges & Concerns

One of the biggest obstacles to telework is how it is defined. If it is defined as, "a way to allow a qualified knowledge worker to work in a remote location when it suits a task that needs to be done," then overall resistance to it goes away. After clearly defining telework, then companies can focus on the policies, procedures, and how to support people to be successful. It is important to have appropriate policies and procedures in place to reduce decision points; this minimizes chaos.

Mr. Dziak said that every company has its own quarks; but the most common concerns of employees during telework trainings were that they were going to be overlooked for promotions, would miss out on social activities, and be overworked. He said that managers must perform frequent reality checks with teleworking employees to keep them connected psychologically.

Managers are frequently highly resistant to change. Managers fear that telework will cause them to lose power or control. They view telework as an anomaly; successful implementation will make telework part of the normal operations of the company.

He also stated that teleworking amplifies pre-existing problems within organizations. If a manager has a poor work ethic, trouble with technology, or manages by sight rather than performance, that teleworking will expose this. It may be necessary to offer managers professional development opportunities; but ultimately teleworking may weed out managers that are a poor fit.

After telework is implemented, specific concerns really depend on the company. The most common complaints arise because companies take short cuts during implementation of the program. Mr. Dziak's training includes a twelve-step implementation process when companies skip steps, it makes the process more challenging.

Outreach/Marketing Strategies

In the past 10 years, there has been a shift from having to educate companies on what telework is to it being perceived as a practical solution

to business problems. It may be a strategy to recruit and retain highly qualified workers or minimize costs. For example, Mr. Dziak was approached by a business interested in implementing telework after they ran out of employee parking spaces. He also commented that telework can improve performance of businesses; however many businesses must first learn how to measure performance.

IT Suggestions

Mr. Disk's business partner worked in the IT field before helping him start E-works.com, Inc. In their experience, their clients typically already have good IT Departments and support. Frequently, companies already know what IT infrastructure will be required. However, companies must plan appropriately for the impact of teleworking. Teleworking can create unexpected demands on the IT Department's time. They may need to set up a logistic support system to get hardware fixed, minimize downtime, keep track of people who leave the company, and train new employees. Companies may also want to think about requiring a certain level of IT proficiency for teleworkers.

Lessons Learned/Suggestions

Mr. Dziak stated the advent of e-learning is changing management systems. He envisions organizations will be able to private label the products and certify employees as telework managers or telework employees.

Section 4

Key Considerations and Recommendations

This section draws on the literature review, case studies, and ODOE's current materials to outline the components of an effective telework training program. This section is separated into content and format recommendations. The content section addresses the subject matter comprehensive trainings materials should include and the format section provides suggestions for how to deliver the curriculum.

Content

This section describes the topics a comprehensive set of training materials should include. Many of these elements are already included in ODOE's current materials and do not need to be refined, while other elements may be present but need to be enhanced in the revisions. The content section is organized into three general training topics:

- I. Introducing Telework: The Benefits and Challenges,
- II. Implementation Guidance, and
- III. How to Maintain a Successful Teleworking Program.

Important considerations for companies to know about when they decide to implement telework are listed under each training topic. Each consideration includes more specific, recommended key points to include in training materials.

I. Introducing Telework: The Benefits & Challenges

The teleworking materials presented by ODOE need to introduce the concept of teleworking and address both its benefits and challenges. Outlining the general benefits of a teleworking program can pique the interest of managers and employees and encourage them to explore the possibility of a telework program further. The benefits of teleworking fall into three main types: employee, business, and public benefits. It is equally important for business to be aware of potential challenges. The main challenges that businesses face when considering telework center on changing organizational culture, employee and managerial resistance, and start-up costs.

Introduction

Introducing Telework

Trainings and materials should begin with an introduction and definition of what telework is. This helps dispel popular myths and reassure employees that teleworking is simply working from a different location. Reiterate telework does not change the conditions of employment, expectations, or FTE of employees.

Recommended Key Points to Include:

Definition of Telework: Telework can be defined in several ways, but the key is that managers and employees have a shared definition of what telework is in their agency from the very beginning. Agencies should have a policy that employees read and sign that affirms they understand and accept the terms and conditions of teleworking.

Benefits

A. Employee Benefits

Potential employee benefits should be explained in telework materials and in trainings. It is important for organizations to know how teleworking can positively impact their workers. In optional telework programs, explaining the benefits may increase employee participation rates.

Recommended Key Points to Include:

- 1. Telework Expands Options for Non-traditional Employees:** The ability to continue working even if homebound (or if travel is difficult) is extremely appealing to many people. For this reason providing information on these benefits is important. Telework can be a viable option for employees that face entry or returning-to-work barriers. For example, teleworking speeds the return to work for injured or ill workers. Finally, this type of information is helpful for managers in realizing how they can comply with the Americans with Disabilities Act.
- 2. Telework Increases Employee Job Satisfaction & Work/Life Balance:** Several studies have affirmed that teleworking can greatly improve employee job satisfaction and work/life balance. Teleworking can increase the amount of free time workers have; creating more time to spend with families, friends, and pursuing personal interests. Telework, combined with flexible scheduling, allows employees to work when they are the most productive, reduces stress, and improves productivity.
- 3. Telework Saves Employees Money:** The costs of commuting, a professional wardrobe, childcare and work lunches add up. In 2005, the federal government estimated that the average federal employee spent \$10,580 commuting to work five days a week (Telework Exchange,

Nov. 2005). Telework can reduce trips to work, the hours needed for childcare, and clothing costs.

B. Public Benefits

Teleworking also has important public benefits. The public benefits will be especially pertinent to government agencies and companies interested in more sustainable business practices. As stated in the literature review, environmental benefits were at the forefront of telework literature a decade ago. Teleworking has other important public benefits; it can improve travel safety and lower traffic congestion.

Recommended Key Points to Include:

- 1. Telework Is Good for the Environment:** Telework results in fewer auto trips, reduced emissions, and may help alleviate poor air quality issues. Teleworking also reduces energy consumption due to decreased automobile use and fewer resources used in the offices. Georgia Power, which has about 150 teleworkers, has reduced annual commuting miles by 993,000 miles and automobile emissions by 35,000 pounds (Cascio, 2000;81). Teleworking may reduce the footprint of participating organizations because they need less office space and fewer parking spaces. IBM estimates it saves 40 percent to 60 percent each year at each of its site by only having the essential office space and relying on telework (Cascio, 2000;81)
- 2. Telework Improves Safety:** Telework reduces traffic on the road during peak travel times which increases safety. The less time people spend commuting, the less likely they will be to get into a traffic related accident. By skipping the commute, teleworkers avoid frustration and road rage.
- 3. Telework Can Reduce Congestion & Vehicle Miles Traveled:** Telework is a promising transportation demand strategy. Telework has been shown to reduce commuting travel and peak period trips while not increasing other vehicle trips (U.S. Department of Transportation, 1992). This reduces traffic congestion, helps manage trip predictability, and decreases demand for public road infrastructure.

C. Business Benefits

Teleworking materials must address how telework fits into the company's overall business plan. The reasons why businesses engage in telework are varied; but for teleworking to be successful, there must be motivation to realize business gains through telework. As one consultant explained, "The environmental benefits of telework are great, but they are not the reasons why businesses implement telework. The fact that telework improves the environment is just gravy."

With the threat of pandemic flu and the recent experiences of Hurricane Katrina and September 11th, business continuity is a high priority to many companies. Retaining and recruiting qualified workers, lowering costs, and

increasing productivity are important business benefits and educating companies on these key points will be important marketing tool for ODOE.

Recommended Key Points to Include:

- 1. Telework Can Improve Business Continuity:** Companies with teleworking policies are much more likely to experience nearly seamless continuity when disaster strikes. This makes them more resilient, flexible, and better able to adapt to changing external conditions. As of 2000, every federal agency is required to have a teleworking policy as part of its business plan.
- 2. Telework Retains & Recruits Highly Qualified Workers:** As the baby boom generation retires and the U.S. economy relies more on competitive knowledge workers, highly qualified workers will be in increased demand by companies. Intel is an example of a company that uses telework as part of its image building strategy as a great place to work. By providing more flexibility, telework can retain employees that may have to move, live in a rural area and would have a long commute, desire to “semi-retire,” or have familial obligations.
- 3. Telework Lowers Overhead Costs:** Telework lowers costs in several ways. Telework has been demonstrated to effectively minimize productivity lost due to bad weather, natural disasters, and other interruptions. Telework has been estimated to save \$2 for every \$1 invested (Cascio, 2000;81). These savings are realized in primarily reduced overhead costs: lowered real estate expenditures, reduced fleet maintenance and operation if applicable, reduced energy bills, and fewer office supplies consumed.
- 4. Telework Increases Productivity:** Contrary to popular myths, telework typically increases worker productivity on an average of 22 percent (Office of Personnel Management, 2006). After implementing telework, IBM reported productivity increases ranging from 10 percent to 40 percent and USWest credits telework with increasing individual productivity of employees by as much as 40 percent (Cascio, 2000;81). Workers experience fewer interruptions, can work when they feel most productive, and are often more motivated to accomplish tasks when telecommuting.

Challenges

A. Employee and Managerial Resistance and Concerns

As described in the literature review, one of the main barriers to implementing a successful telework program is employee and managerial resistance. Employees are concerned that they will miss out on social activities, promotions, and be overworked.

Managers are worried that employees will not be productive or that the managers will lose importance. Some managers believe that if their employees are teleworking, the need for middle-management supervision

will be reduced or eliminated. Managers may view telework as a threat to their jobs. It is important that training materials present these concerns so that the managers and employees feel that they can openly discuss and understand each others' fears.

Recommended Key Points to Include:

1. **Present and Discuss Common Manager/Employee Concerns:** The video, *A Manager's View of Telework*, does a wonderful job of pointedly addressing many of the concerns of managers. However, additional questions should be added to the current eight questions to address business continuity, information security, and new home office requirements. Training materials should reassure employees that teleworking will not jeopardize career advancement. Furthermore, have employees and managers identify potential areas of conflict and problem-solve solutions in trainings.

Employees that are not participating in the telework program should understand how the program is going to work. The training materials should make it clear that teleworkers will be expected to do their fair share and will be evaluated appropriately.

2. **Present Strategies to Maintain Communication:** Teleworking requires new ways of keeping employees psychologically and socially connected. With reduced "face-time," teleworkers require more frequent "check-ins" to make sure things are going well. Establishing ground rules for communication between managers and employees beforehand is important and should establish the frequency, tone, and times frame during which the teleworker is expected to be available. For example, Office Space Planners, Inc. requires employees to attend a weekly staff meeting or call to stay connected with each other; but otherwise workers can determine their own schedules.

Part of communication includes regular evaluation and feedback. Managers must learn to "manage by results" rather than visual supervision. This pushes managers to develop new skills and they may need to receive training on performance management.

Organizations may also want to consider new communication technology such as video conferencing, collaboration software, and voice over phones part of their teleworking infrastructure.

3. **Teach Ways to Cope with New Challenges:** The transition to telework will be stressful. Employees should be presented with ways to manage feelings of isolation and strategies for balancing family and work time.

B. Costs

The initial investment in teleworking infrastructure can be a deterrent. The Oregon Business Energy Tax Credit can help offset the costs associated

with implementation. Telework investments should be incorporated into companies' strategic budget planning.

Recommended Key Points to Include:

1. **The Oregon Business Energy Tax Credit:** The Oregon Business Energy Tax Credit is an incentive for companies to implement energy conservation programs. Since telework can reduce both energy consumption and commuting miles, telework projects may be eligible for the tax credit. The tax credit applies to 35 percent of the eligible project costs which helps off-set the cost of implementing a telework program (Oregon Dept. of Energy).
2. **Budget for Telework Investments:** The literature review found most large organizations do not budget strategically for teleworking. Many companies mistakenly view telework as a one-time purchase rather than an on-going program expense. Equipment has a limited lifespan and it is important that companies are prepared to replace and update equipment to stay competitive.

Companies should create a budget that includes start-up costs, maintenance logistical support costs, insurance, equipment (e.g. hardware, software, office supplies) and account for depreciation. To gain a clearer picture, companies should also account and track the savings realized through telework.

Costs will depend on the size and needs of the organization. Several Web sites have user-friendly cost-benefit analysis tools to help determine if telecommuting is appropriate for the specific organization. Training materials should include links to these Web sites, such as <http://www.commuterchallenge.org/costbenefit.html>, or worksheets for organizations to fill out.

II. Materials Need to Provide Implementation Guidance

The literature review and case studies reinforced that training and education is essential to successful implementation. After deciding to pursue telework, companies will need to be educated on how to navigate IT concerns and office design.

IT Concerns

A. Information Security

One of the top concerns of organizations implementing telework is information security, but these concerns should not deter an organization from starting a telework program. There are five actions a company should take to secure its remote networks: installing firewalls, configuring Internet browsers and operating systems, protecting against viruses, using virtual private networks, and establishing technology policies and procedures. The National Institute of Standards and Technology's, *Security for*

Telecommuting and Broadband Communications: Recommendations of the National Institute of Standards and Technology provides a detailed analysis of security measures for remote workforces.

Recommended Key Points to Include:

- 1. Firewalls:** All home networks using a broadband connection to the Internet should use a firewall device (in addition to the hardware firewalls already on the computer) (Khun et al, 2002). Firewalls are security devices that filter and control the information that is passed between private computer networks and the Internet. Installing another firewall for teleworkers provides increased security, is relatively inexpensive, and easy to install. However, it is important that the firewall is properly configured to the appropriate settings; otherwise they will be ineffective. Companies without an IT department may want to work with a consultant to configure their firewalls.
- 2. Internet Browsers and Operating Systems:** Internet browsers and operating systems need to be configured beyond their default settings appropriate security settings. Also, it is important that automatic update is set to run daily. It is estimated that “90 percent of security problems can be avoided by keeping browser and operating system software updated with the latest security patches” (Kuhn, R., 2006).
- 3. Virus Protection:** Teleworkers should be provided with properly configured antivirus and spyware detection tools (Kuhn, 2006). “Computer viruses are software programs that are deliberately designed to interface with computer operation, record, corrupt, or delete data, or spread themselves to other computers” (Microsoft, 2006). Spyware are software programs that can cause advertisements to pop-up or record personal information (Microsoft, 2006;b). To stay protected, it is important teleworkers have anti-virus and spyware tools installed, automatically update virus and spyware protection, are cautious when opening e-mail attachments, and system administrators stay atop of current threats (Microsoft, 2006).
- 4. Virtual Private Networks (VPN):** “A VPN serves as an encrypted tunnel between two organizations, or hosts, that makes it possible for secured communications over public networks” (Kuhn, 2006). VPNs greatly increase security because only authorized users can access the network and data cannot be intercepted during transmission. However, although they offer a high degree of security, they can also be costly and difficult to administer (Kuhn, 2006).

Alternatives to VPNs for workers logging in from remote locations include Secure Sockets Layer (SSL) VPN appliances, Microsoft Terminal Services, and remote control software programs (e.g. Symantec’s PC Anywhere) (Rohan, 2005). As teleworkers increase in numbers and become increasingly mobile, organizations may find that these options are more cost-effective while still provide adequate

security with easier administration. An organization should weigh the cost of installing and administering VPNs or a VPN alternative against the level of security they need, their IT resources, and needs of teleworkers.

5. Technology Policy and Procedures: It is important that companies establish policies and procedures to guide telecommuters on the appropriate use of technology (Kuhn, 2006). Teleworkers should be educated on the agency's IT and security rules, regulations, and protocols. Examples of topics that may be included in technology policies include:

- Appropriate use and authorized users of company equipment
- Use of personal computers for teleworking
- Security standards
- Responsibilities for updating virus and spyware protections
- Liability for lost, stolen, or damaged equipment
- Data protection guidelines (e.g. backing-up work, encryption)
- Portable storage security (e.g. PDAs, USB Flash Devices)

B. Teleworker IT Support

One of the most frequent downfalls of teleworking programs is that companies underestimate the demand for IT support. Technology difficulties can lead to frustration, loss of productivity, and could threaten security.

Recommended Key Points to Include:

- 1. Standardized Equipment:** It is recommended that companies issue standardized equipment to teleworkers. Issuing company laptops, printers, and/or personal computers to be solely for work purposes enhances security by limiting access to authorized users. Also, consistency of equipment streamlines technical support, guarantees each computer has the appropriate hardware and software installed, and makes planning for technology investments easier.
- 2. Consider Screening Employees for Telework that are Computer Proficient:** This helps ensure employees are less reliant on IT support and are more likely to maintain equipment properly.
- 3. Provide Training:** Train employees on the proper use and maintenance of equipment. This includes educating them on policies, responsibilities for maintaining security, authorized users, and types of use permitted on company equipment.

- 4. Plan for extra logistical support:** Provide employees with access to IT help, streamlined systems for repairing equipment, and develop a way to keep track of company equipment.

Home Office Design

A. Ergonomics and Home Office Injuries

Teleworkers may be especially prone to repetitive stress injuries due to the long hours spent on the computer and lack of a corporate designed workplace. Yet it appears that few companies provide ergonomic training for teleworkers. The “Keys to Successful Teleworking” video that ODOE provides covers many of the requirements of the home office. These recommendations, however, should be updated to reflect recent advances in technology and ergonomic understanding. ODOE also provides a checklist for the home office, This is a useful document and should also be updated to reflect recent technological advances.

Recommended Key Points to Include:

- 1. Home Office Injuries are Costly:** It is estimated that the average case of carpal tunnel syndrome costs companies \$8,000 but that providing ergonomic training and equipment would cost only \$150 on average (Winkle, 2000).
- 2. Ergonomic Home Office Design Minimizes Risks:** Designing the home office with ergonomics in mind can help reduce the likelihood of employee injury. Employees provided ergonomic training are much more likely to take steps to implement an ergonomically correct home office. Companies should consider the type of work the employee will be performing from home: Will they be using the phone a lot? Typing reports? Using a mouse to surf the Internet? The type of work the employee performs can determine priorities for designing a healthy home office. Table 1 provides some risk reduction tips for the home office worker.

Table 1. Home Office Risk Reduction Tips

Keyboard	Keyboard should be adjusted so that your shoulders are relaxed, elbows bent at 90 degrees, wrists are straight, and the home row is the same height as your elbows.
Monitor	Pain can result from tilting the neck to look at the monitor. Make sure the monitor is directly in front of your line of sight, text is size is easy to read, and the screen is glare-free.
Chairs	When chairs are adjusted properly: feet rest on the floor or a footrest, thighs are parallel to floor, the lumbar curve is supported, and armrests fit slightly below your elbows when your shoulders are relaxed.
Workstation	Equipment and supplies should be within an easy reach to prevent straining for items.
Phone	Use speaker phone, head set, or phone rest. Always use at least one hand to hold the phone.
Pointing Devices	Use elbow to move the mouse, not the wrist. Use control keys or macros for repetitive tasks. Mouse should be at or slightly above keyboard height and the same distance away from the key board. Relax hand when not using a pointing device.
Eyestrain	Take regular breaks and use a glare screen on the monitor if needed.
Posture	Change positions often, make sure furniture feels comfortable, take breaks.
Environment	Make sure the home office has appropriate lighting, an acceptable noise level and is properly ventilated.

Source: Compiled by CPW with data from: Environmental Health & Safety <http://www.dehs.umn.edu/ergo/office/>; The University of Sydney http://www.usyd.edu.au/ohs/ohs_manual/ergonomics/posture_checklist.pdf; CROETweb.com http://www.dir.ca.gov/dosh/dosh_publications/ComputerErgo.pdf

3. **Home Office Policies:** Employees should agree to and sign policies agreeing to work in an ergonomically correct way when working at home. Policies should include protocols for at-home emergencies (e.g. home burglary, equipment computer problems, network problems).

Home burglary has been in the news recently when laptops with sensitive information stored on them have been stolen from employees' homes. Employees should know who to report the burglary to in the company. Organizations should consult with their insurance to review their coverage for home equipment.

Companies can address this issue by implementing policies to both minimize the risk of the equipment being stolen from the home and to improve the chance of recovery. There are several physical and technological security devices that can help prevent theft. For example, the KryptoVault lock can help secure a laptop to a secure object and a motion sensor will sound if the lock is moved. Computrace 7.0 is an example of software that will trace a stolen computer back to its

Internet Protocol address or telephone number it is using to access the internet. The organization should evaluate the cost of investing in such items versus the risk of losing confidential data.

III. How to Maintain a Successful Teleworking Program

After the initial implementation, companies will be faced with the challenge of operating the new telework program.

A. Telework Program Maintenance

Telework is a long-term business strategy companies invest in that requires regular training, evaluation, and maintenance. ODOE's materials should address how companies can maintain a successful teleworking program.

Recommended Key Points to Include:

- 1. Regularly Schedule Training is Important:** Training can be a forum to keep people up-to-date with the latest technology, policies and procedures, a part of new hire orientation, to improve areas of weakness, and celebrate successes. Trainings can help keep employees and managers engaged in the organization by offering opportunities to expand their skill set. Training is not just a one-time occurrence, but teleworking training should be part of the regularly scheduled company trainings.
- 2. Program Evaluation:** Program evaluation is necessary to determine if telework is achieving its desired outcomes. In speaking with telework consultants, it is very common for businesses not to have a set of performance metrics. Without performance metrics, businesses will not know if telework is improving productivity, absenteeism, employee satisfaction, profits, etc. ODOE should encourage businesses to perform program performance evaluations and set benchmarks for reaching teleworking goals.
- 3. Telework is a Long-Term Investment:** Although this has been touched previously, it is important that companies plan to invest in the telework program. This includes capital expenditures for equipment, IT support, training costs, and for personnel. Often, telework programs are funded in a piecemeal and incremental way. This can end up costing more in the long-run due to missing out on savings realized by bulk purchases, workers not having the resources to adequately perform their jobs, and it can make the program more difficult to manage without having standardized equipment.

Format

This section describes what ODOE should consider when redesigning their trainings and educational materials.

Company Specific Training

Much of the literature and the case studies suggest that it is beneficial to tailor training materials to the company. This tailoring does not necessarily have to be an extensive process, but should involve some background research into the company to determine their main issues and concerns and the ways in which telework will benefit the organization. Non-profit and governmental organizations may be more interested in the public benefits of teleworking, whereas private businesses may be more interested the business benefits.

This kind of personalized presentation will most likely make both managers and employees more receptive to the idea of telework. Below are some suggested questions to learn more about the client's needs:

1. What is the motivation for implementing telework?
2. Is the company interested in learning more about telework or ready to train workers?
3. How many employees will be teleworking?
4. What kind of work will employees be performing?
5. What is your level of experience with telework?
6. What types of IT resources/experience does the company have?

Web site

ODOE currently has an informational Web page on telework (<http://www.oregon.gov/ENERGY/TRANS/Telework/telehm.shtml>). The case studies, however, suggest that a Web site solely dedicated to telework is extremely useful. ODOE should consider developing a Web site entirely devoted to telework.

This Web site could include streaming video of ODOE's training videos, downloadable PDF files of all their training materials, PowerPoint presentations, as well as example worksheets. This Website should also offer a resource list of other Web sites and books where employees and managers can look for more information.

Videos

ODOE currently has several training videos available. CPW recommends that these videos be updated to include references to more current technology and benefits. These videos should also be reformatted to be made available on DVD and as streaming video on the Web site.

Example Worksheets

There are several example worksheets included with ODOE's materials. These include worksheets on how to develop policy, how to select a good teleworker and a sample telework agreement. All of these are beneficial and should continue to be provided. ODOE should, however, consider

making them available on a CD as downloadable files and also as PDFs on their Web site.

Short Products

The case studies (and sample materials provided by Telecommute Connecticut!) suggest that training materials should be very accessible. This means ODOE should consider developing short documents (2 - 10 pages) with lists and short paragraphs. These types of materials are easy to read and understand. The step-by-step guide is a useful tool, but somewhat daunting, especially when a manager may not be very excited about adopting telework materials.

Appendix A

Summary of Current ODOE Materials

This appendix contains a description of each element of ODOE's current telework training materials.

Oregon Business Energy Tax Credit

This pamphlet provides a description of the tax credit program. It also includes examples of the types of projects that are eligible for a tax credit.

Telecommuting: An Option for Oregon Workers with Disabilities

This newsletter is seven pages long. It contains information on how telework can benefit employees with disabilities. It also includes several personal stories about teleworkers with disabilities.

Telecommuting: An Alternate Route to Work

This step-by-step guide is over 94 pages long with six appendices. This guide includes directions on how to set-up a telework program and provides examples of policy documents and directions on how to fill them out. This guide also includes a floppy disk with copies of the training materials and sample worksheets.

Telecommuting and the Eco Rules

This is a two-sided pamphlet on the benefits of teleworking to the environment.

Telework Basics Pamphlet

This seven page document covers what telework is, how telework benefits the organization, the employee and the community, and how to set up a telework program.

The Manager's Quick and Easy Guide to Telework

This 21 page guide focuses on telework from a manager's perspective. This guide offers tips on implementing telework, selecting teleworkers, and equipping and training those teleworkers. This guide also offers five appendices that include templates for policy, selection guides and a sample telework agreement.

Why Work Isn't Always the Best Place to Work Pamphlet

This double-sided pamphlet offers a brief introduction to telework and why companies should consider developing a telework program. This

pamphlet also offers a description of the types of materials that ODOE offers.

Telecommuting Training Workbook

This sixteen page pamphlet is included in the Telework Training Kit for employees and managers. This workbook includes samples of a telecommuting agreement and telecommuting policies, this workbook is to be used with the “Keys to Telecommuting Success” video.

Video: The Keys to Telecommuting Success

This 17-minute video accompanies the “Keys to Telecommuting Success” and provides an overview of essential elements of a successful teleworking program.

Video: A Manager’s View of Telework

This 15-minute video presents eight basic questions that managers might have about telework. The questions cover a range of topics including benefits of teleworking, communications with staff, safety and ergonomics of the home workplace, and upfront investment costs.

Appendix B

Case Study Questions

CPW conducted four case studies – two with organizations that offer teleworking to their employees and two with organizations that provide telework training and produce educational material. After reviewing information on the company’s Web site, CPW researchers conducted interviews with each of the organizations. This appendix lists the questions asked.

For Organizations that Engage in Telework

Questions About Company’s Policy

- Why did you choose to implement telework in the first place?
- What does your telework policy consist of?
 - a. How many days a week do you allow employees to telework?
 - b. Are your employees required to telework on days allocated for that, or may they work from the main office? What types of positions do you allow to participate in the telework program?
 - c. What other specific criteria must employees follow in order to telework?
 - d. Other information about your telework policy?
- Describe the telework training process that your company went through. How did you implement your telework policy/program?
- Have you employed incentives to encourage telework? (Maybe list types of incentives they can choose from – like, they pay for Internet or extra phone line at the employee’s home, etc?)
- What are the benefits for your organization as a whole? How have overall costs been affected? Where have costs increased? Where have they decreased?
- Do you foresee continuing to use telework as a business strategy?

Employee Questions

- What percentage of your employees practice telework? Is there a particular type or profile of employee who chooses to engage in telework?
- What are the barriers to teleworking for employees?
- What strategies have you implemented to overcome these barriers?
- What are the benefits of teleworking for employees?
- Would you say that employee satisfaction has increased/decreased?

Manager Questions

- What are the barriers to teleworking for managers?
- What strategies have you implemented to overcome these barriers?
- What are the benefits of teleworking for managers?

Basic Function Questions

- Another company in your area is about to implement a telework policy, what advice would you give them?
- What advice do you have for us about what needs to be included in training materials?

For Companies that are Telework Trainers

Company Profile Questions

- How long have you been training companies to do telework?
- How many staff do you employ?
- How many trainings do you offer?
- Do you offer continuing support? If so, what kind of support, and for how long after a company has been trained?

Specifics about Materials

- What kind of materials do you provide? Do you make one set of materials for employees and another for managers?
- How do you tailor your materials for private/small businesses vs. government organizations?

- From your perspective, what is the most important resource you provide? Why? What does it include?

Marketing

- Has there been a shift in the emphasis of your telework trainings over time?
- What are the most compelling messages/reasons for doing telework?
- How easy or difficult is it to encourage companies to explore the possibility of telework?
- How do you market your materials?

Client Management

- What is the most common employee concern during training?
- What is the most common manager concern during training?
- What is the most common employee complaint after telework is implemented?
- What is the most common manager complaint after telework is implemented?

General Question

- If you could create one new training document or actual training, what would it be?

Appendix C

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