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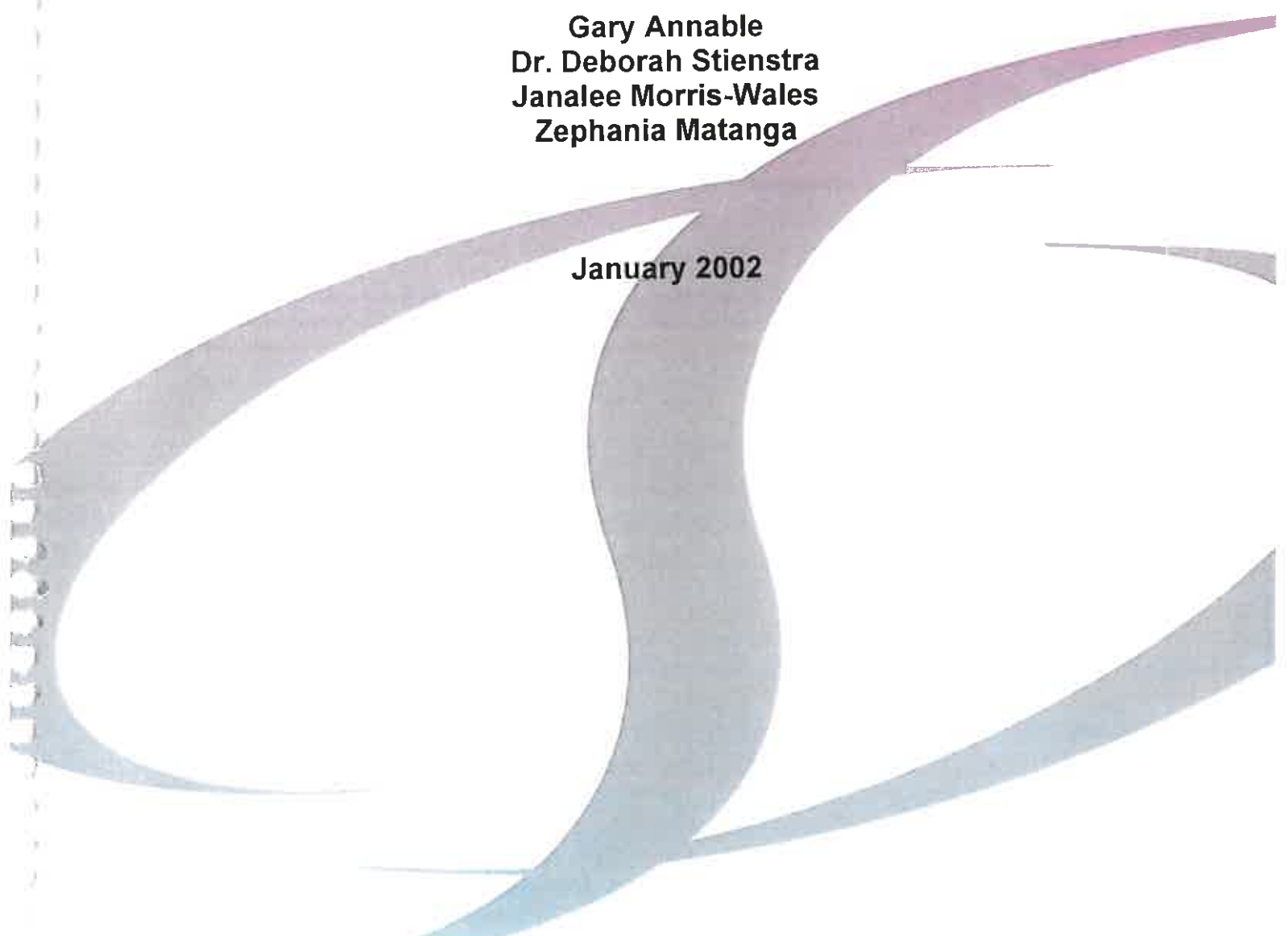
Final Report of a Study of Best Practices in the Home-Based Employment of People with Disabilities

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Additional copies of this report and the companion handbook *Best Practices in the Home-Based Employment of People with Disabilities* can be obtained in print and other formats from:

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EXECUTIVE SUMMARY

Overview

This report describes the findings of a Manitoba study that examined the opportunities, challenges and risks that persons with disabilities may experience when they do paid employment at home. The study focused on workers who were paid employees rather than self-employed persons or operators of home-based businesses. It included persons who work at home all the time, as well as workers who split their time between their homes and a traditional workplace. It did not include people whose only work at home was paid or unpaid overtime work done in the evening or on weekends after working a full day or week at their employer's workplace.

The main findings of the study are based on the first hand experiences of 21 people with disabilities who worked at home. They completed a questionnaire and attended a focus group meeting or interview. Eleven also recorded daily diaries about working at home for two weeks. Most of them also attended a workshop where the preliminary findings were presented and discussed.

For background information, the study also reviewed previous research and conducted focus group meetings with disability agencies, employers, unions and supervisors of people with disabilities who work at home.

Key Findings

Reasons for Working at Home

Most of the study participants worked at home for reasons related to their disabilities, including:

- flexibility to work when they felt most productive and rest when necessary
- because their employers' workplaces were physically inaccessible or lacked assistive technology they required
- better access to attendant care or pain management strategies that were unavailable or difficult to arrange at their employers' workplaces

- to avoid extreme weather conditions that exacerbated pain related to their disabilities or created risks of falling on slippery winter surfaces
- because previous employers had not accommodated them satisfactorily when they disclosed their disabilities and/or requested accommodation

Additional Benefits of Working at Home

In addition to the reasons they worked at home, the study participants identified a host of additional benefits and advantages of working at home, including:

- freedom from distractions and office politics
- less stressful
- reduced time spent traveling to and from work
- save money on lunches and work clothing
- flexibility to care for sick family members
- flexibility to attend to non-work activities (e.g. going to bank, doctor)
- flexibility to work when disability would make it difficult to go to employer's workplace

In contrast to the reasons they worked at home—which were usually related to disability—many of the additional benefits they reported are similar to those reported by persons without disabilities who work at home.

Challenges of Working at Home

Although most participants were relatively satisfied working at home, they identified a lengthy list of challenges they had encountered.

Setting Up the Arrangement

Some participants reported that they experienced resistance from their employers when they requested to do some or all of their work from home. Some were reluctant to ask their employers to provide or pay for equipment or services required to work from home. Some felt that persons with disabilities who are unemployed or receiving income assistance may not have the confidence and self-esteem required to request and negotiate a home-based work arrangement.

Isolation

Some participants reported that they sometimes experienced feelings of isolation working at home. In general, however, relatively few participants indicated that they experienced major feelings of isolation. More reported that they enjoyed the solitude of working at home. The fact that many of the participants did not work exclusively at home may minimize their risk of isolation.

Co-workers

Some participants indicated that they felt well-supported by their co-workers, but others reported that some of their co-workers resented their ability to work at home.

Communication

Participants indicated that they had less access to informal communications than they would have if they worked in the same location as their co-workers. They also said that they were sometimes inadvertently excluded from work-related communications, such as postponement of meetings that they only learned about after traveling to the meeting site.

Meetings

Most participants reported that they physically attended meetings at their employer's workplace. Others indicated that they participated in meetings by telephone. Interestingly, however, some home-based workers who experienced difficulty traveling to attend meetings had not considered conference calls as a solution.

Career Development and Advancement

Study participants did not say much about the impact working at home had on their career development and advancement opportunities. Approximately half of the participants worked for small non-profit organizations that often have limited budgets for professional development. Some had only recently started their jobs and hadn't begun to consider career development and advancement opportunities within their organization. More than half of the participants were over 45 years of age,

and some of the older participants indicated that they did not foresee further career advancement opportunities.

Maintaining Healthy Boundaries

Many of the study participants identified the flexibility to work outside standard hours as a benefit of working at home, but some people who worked flexible hours described significant challenges maintaining the boundaries between their work and family/personal lives. In most cases, persons who discussed this challenge talked about difficulties keeping their work life from intruding on their non-work lives, rather than situations where their family and other non-work responsibilities intruded on their work.

Technology and Telecommunications

All of the study participants used a telephone to do their work. Most also used computers, faxes, e-mail, and the Internet. Most participants did their work without assistive technology, but some participants used specialized keyboards, voice recognition software, screen reader software and hardware, large monitors, Braillers, scanners and Optical Character Recognition (OCR) software.

Most participants indicated that their employers provided or reimbursed them for work-related supplies and long distance telephone charges, but most employers did not provide computers, printers or fax machines. Most participants paid for their own equipment from their own pockets. Most of the minority of participants who indicated that their employers supplied computer hardware, software or assistive technology worked for large organizations.

Most employers also did not provide separate telephone lines for work-related calls, faxes, and Internet usage. Most participants used their residential phone for work. As a result, some indicated that they sometimes missed personal calls or faced challenges avoiding work-related communications outside of their usual work hours.

Technical Support

Only a few participants reported that their employers provided technical support for the equipment they used to work at home. These tended to be

persons working for large organizations with Information Technology specialists. Most participants who used computers indicated that they had to solve their own technical problems. A few indicated that they paid external service providers for technical assistance.

Conclusion

Despite this lengthy list of challenges, most of the participants in this study liked working at home. Some who described significant challenges indicated that they would prefer to continue working at home even if their employers were willing to accommodate them in the workplace.

Nevertheless, home-based work is not a broad solution to the employment problems of persons with disabilities in Canada or anywhere else. Working at home may be an effective way of accommodating disability, but it is not a substitute for accommodations in traditional workplaces. Many people with disabilities—just like many people without disabilities—are not interested in working at home.

Persons with disabilities who want to work at home for reasons unrelated to their disabilities should have the same access to those opportunities as persons without disabilities. Additionally, persons with disabilities should also have additional access to home-based telework if they see working at home as an attractive way of accommodating disabilities.

A companion handbook to this report entitled *Best Practices in the Home-Based Employment of People with Disabilities* provides practical advice for workers with disabilities who work or want to work at home. It also offers best practices and other suggestions for employers, unions, policymakers, researchers, organizations of persons with disabilities and agencies that provide job search and other employment supports to persons with disabilities.

ACKNOWLEDGEMENTS

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1. INTRODUCTION

Research conducted during the 1980's and 1990's found that persons with disabilities in Canada face considerable barriers to employment, resulting in significantly lower employment rates compared to persons without disabilities. During the same period, a variety of social, economic and technological factors led to significant growth in the number and proportion of Canadian workers who do some or all of their work at home.

As home-based work and telework/telecommuting have become increasingly practical and common, working at home has been suggested as a strategy that may provide additional employment opportunities for persons with disabilities. A number of studies have examined the benefits, challenges and risks that may be experienced by persons with disabilities who work at home, but there have only been a handful of these studies in Canada. As a result, there are significant gaps in our understanding of the experiences of persons with disabilities who work at home in Canada.

This report describes the findings of a study of 21 persons with disabilities who do paid employment at home in Canada, mostly in the city of Winnipeg, Manitoba. A companion handbook entitled *Best Practices in the Home-Based Employment of People with Disabilities* provides practical advice for workers with disabilities who work or want to work at home, employers, unions, policymakers, researchers, organizations of persons with disabilities and agencies that provide job search and other employment supports to persons with disabilities.

2. PREVIOUS RESEARCH

2.1 The Employment of Persons with Disabilities in Canada

Research conducted during the 1980's and 1990's found that persons with disabilities in Canada face considerable barriers to obtaining and keeping jobs, and have consistently lower employment and labour force participation rates than persons without disabilities (Fawcett 2000; Fawcett 1996; Roeher Institute 1992; Ross and Shillington 1990). For example, Statistics Canada's 1991 Health and Activity Limitation Survey found that only 48 percent of persons with disabilities between 15 and 64 were employed, compared to 73 percent of persons without disabilities in the same age group.[1] For persons with disabilities that Statistics Canada defined as having moderate disabilities, only 37 percent were employed. Only 18 percent of persons with severe disabilities were employed (Statistics Canada 1993).

2.2 The Growth of Home-Based Work and Telework/Telecommuting

Also during the 1980's and 1990's, a variety of social, economic and technological factors led to significant growth in the number and proportion of workers who do some or all of their work at home. Statistics Canada's 1995 Survey of Work Arrangements (SWA) found that nine percent of all paid employees in Canada—approximately one million people—did some of their work at home (Pérusse 1998a), an increase from six percent and 600,000 workers in the 1991 SWA (Siroonian 1993).[2] Statistics Canada expects the 2001 census to show continued growth in the number and proportion of Canadians who do paid work at home (Johne 2000).[3]

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[1] Although the results of this survey are ten years old, they remain the most comprehensive national statistics about the employment of persons with disabilities in Canada. Statistics Canada conducted a similar survey called the Participation and Activity Limitation Survey in the fall of 2001. The findings of that survey are expected to be published in 2003.

[2] The 1995 survey also found that 1.1 million Canadians operated home-based businesses (Pérusse 1998b). The current study, however, focuses on paid employees who work at home instead of at their employers' workplaces.

[3] A recent survey of 5,008 Canadians found that 52 percent of employed Canadians felt that working from home was appealing (Ekos Research Associates 2001).

However, despite frequent media portrayals of persons with sophisticated home offices who work at home most or all of the time (Quigley 1999), relatively few Canadians do much of their paid work at home. For example, 42 percent of the one million Canadian employees who worked at home in 1995 worked at home fewer than five hours a week (Pérusse 1998a). That survey did not distinguish persons who did overtime work at home from persons who work at home for some or all of their *normal* working hours. Nevertheless, closer examination of the survey's findings suggests that many of the one million Canadians who worked at home in 1995 were not truly home-based workers or teleworkers/telecommuters. For example, 28 percent of those who reported working at home were teachers, an occupation in which it is common to do overtime work at home on evenings or weekends after doing a full day or week of work at the employer's workplace.

In fact, only 206,000 employed Canadians spent at least half of their normal working hours doing paid work at home in 1995. Although this was a substantial increase from 147,000 in 1991, the proportion of Canadian workers who work at home most or all of the time remains very low: less than two percent of all Canadian workers and approximately 20 percent of all paid employees who do some of their work at home. Instead, this survey indicated that 80 percent of Canadians who worked at home in 1995 actually did the majority of their work at their employers' workplaces.

Despite the small numbers of truly home-based employees in Canada, it is clear that more and more work is being done in the homes of Canadian workers. The factors fueling this growth are varied and complex.

Workers

Some people work at home to complete tasks or projects that require intense concentration and freedom from interruptions (Blake 1999). In large cities, persons who work at home are liberated from the stresses and lost time of lengthy commutes (Aschaiek 2000; Johnson 1997). Many workers are seeking more flexible working arrangements to balance work and other responsibilities. Although the telecommuting literature warns against combining work at home with childcare (Duxbury, Higgins, and Neufeld 1998), working at home can provide workers with greater flexibility to balance work, family and other non-work responsibilities. For example,

people who work at home some or all of the time may have greater flexibility to adjust their work schedules to attend to the short-term needs (e.g. minor illnesses, doctors' appointments) of children, spouses or parents/elders (Ashton and Ashton 1999; McCloskey and Igbaria 1998; Heck, Rowe and Owen 1995; Gray, Hodson and Gordon 1993). Home-based workers and teleworkers/telecommuters often report reduced costs for business clothing, parking and restaurant lunches (Mann 2000). Smoke-free workplaces have made home-based work a desirable option for some heavy smokers.[4]

Employers

Employers can incur substantial cost savings by eliminating office space that would otherwise be occupied by employees who work at home (Nilles 1998). The potential savings can be so substantial that some companies mandate telecommuting for entire departments (Sibley 1997). Even when employees only work at home part-time, companies have cut overhead costs by creating shared generic workspaces which telecommuting employees reserve and use on the days when they are in the office (Johnson 1997). Employers also have flexibility to expand (temporarily or permanently) without moving to larger premises (Gray, Hodson and Gordon 1993).

Some companies have created broad flexible work programs which include working at home as well as job sharing, part-time work, flexi-time and compressed work weeks (Owen, Rowe, and Saltford 1995; Christensen 1992). The option of working at home can provide employers with a powerful tool for attracting and retaining skilled workers who have considerable choice of employers, particularly during tight labour markets (Ramsey 1997). Home-based work also provides the opportunity to recruit and employ persons who would not consider relocating to the city where the job is located (Johne 2000).

Much of the telecommuting literature contains claims that employers can achieve productivity increases when employees work at home or do other forms of telecommuting (Gray, Hodson, and Gordon 1993). Claims of 15-20 percent productivity increases are common (International Telecommuting

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[4] From a discussion on the Canadian Small Office/Home Office (SOHO-CAN) e-mail listserv (http://groups.yahoo.com) October 24-26, 1999.

Association and Council 2000; Ashton and Ashton 1999; Hartman, Stoner, and Arora 1992). There are, however, numerous reasons to be cautious about these claims. Many are based exclusively on self-reported data provided by telecommuters who may be inclined to provide data they believe will allow them to maintain their work arrangement (Aschaiek 2000; Mann 2000; Hartman, Stoner, and Arora 1992). Other studies claiming productivity improvements are based on anecdotal reports about organizations within the telecommunications and computer industries "which have vested interests in reporting results favorable to telecommuting." (Westfall 1998: 257)

Other Factors

Economic, technological and social factors are also driving or facilitating the growth of home-based work. Prior to the mid-1980's, most Canadians who worked at home were industrial workers, often immigrant women doing piecework for garment manufacturers (Borowy and Yuen 1993). Industrial home-based work continues to exist, but much of the recent growth in home-based work has been in information-based occupations and industries. Advances in computer and telecommunications technologies have reduced the need for information-based workers to be assembled at central work sites (Owen, Heck, and Rowe 1995). Telephones, fax machines, computers, e-mail, networks and teleconferencing provide efficient means of transmitting information between workers in different locations. As a result, workers who create, process or communicate information can work at home, in hotels, even on airplanes.

2.3 Challenges of Home-Based Work

Workers

Some people who work at home appreciate the solitude and freedom from common workplace distractions. This is common amongst persons just starting to work at home and those who work at home infrequently (Costello 1988). Other home-based workers, however, miss the social interaction of the workplace. They have less ability to discuss problems with colleagues, participate in informal meetings and share non-work experiences (Blake 1999). A recent British study comparing the experiences of journalists who worked at home to those who worked at an employer's premises found that feelings of loneliness, isolation and frustration were more common among

those who worked at home. They were also more likely to feel overworked and guilty, and suffer from more stress-related disorders (Martin 2000).

Two studies which had otherwise positive findings found that telecommuters identified communication problems with co-workers as a disadvantage (Duxbury, Higgins, and Neufeld 1998; Hartman, Stoner, and Arora 1992). Ramsower (1985) found that persons who worked at home full-time experienced difficulties communicating with subordinates. A British study found that nuances of tone, meaning and body language are minimized by electronic communication, rendering the interaction "cold and unsociable" compared to the "rich and emotionally charged domain of face-to-face communication" (Mann 2000).

Home-based workers must create boundaries between their work and non-work lives to minimize their mutual interference (Haddon 1998). Those who have difficulty establishing and maintaining these boundaries can experience personal stress and conflict with family members (Blake 1999; Heck, Rowe, and Owen 1995; Costello 1988).

The business and mass media often feature telecommuters who work in sophisticated home offices, but this may be a luxury available only to persons who can afford homes with "extra" rooms (Haddon 1998). Those who don't have dedicated home offices must use spaces they and other family members use for other purposes. These shared arrangements can create conflict with other family members (Costello 1988). Home-based workers must also control other family members' access to work-related computers, telephones and information (Haddon 1998). Shared space can also make it difficult for persons who work at home to create an image, for themselves and others, that they are truly "at work" when they work at home (Haddon 1998).

Some telecommuters experience difficulties preventing their work from intruding on the non-work aspects of their lives. For example, some feel compelled to answer their home office telephones after their normal working hours (Brelis 1999). Those who see telecommuting is a perk or privilege may feel pressure to work longer or harder to maintain the arrangement, which can lead to burnout and resentment (Brelis 1999; Schellenbarger 1993).

Some employers may cultivate working conditions that can lead to overwork (Schellenbarger 1993). For example, at a Minnesota county government, "most departments require telecommuters to do more work to make up for the lack of a commute" (Harreld, 2000). The employer can monitor the times home-based workers are connected to the county's computer network, and found that most work more than eight hours a day.

Many studies have identified issues with technology as challenges for home-based workers (Mann 2000; Kistner 2000; Martin 2000; Haddon 1998). These issues include hardware, software and access to technical support (Hartman, Stoner, and Arora 1992). High-speed broadband connections are essential to the productivity of home-based workers who send and receive data over networks or the Internet. Residential broadband connections (e.g. DSL, cable) are sometimes unreliable and available only in large urban centres (Dunham 2000; Tapscott 2000; O'Hara and Haubold 2000; Kistner 2000).

Critics of telecommuting argue that the cost savings incurred by employers are often shifted to home-based workers (Chamot 1988). In a recent survey of U.S. teleworkers, only 24 per cent reported that their employers paid the full cost of providing and maintaining the equipment the telecommuters utilized to do their work. Forty-six per cent reported that they paid for their own equipment and its maintenance (International Telecommuting Association and Council 2000). Another U.S. survey found that only 18 per cent of employers paid the full cost of their telecommuters' business phone, fax and modem connections (American Management Association 1999).

Some studies have found that some telecommuters feel that their career advancement opportunities have been harmed by working at home (Martin 2000; Blake 1999). Hartman, Stoner, and Arora (1992) suggest that home-based workers' career advancement opportunities may be harmed because they are less visible than those in the office, have reduced access to information that is exchanged informally in the workplace, and have fewer opportunities to take on additional assignments and responsibilities.

Employers

Employers may experience challenges monitoring dispersed teams when employees telecommute (Harris 2000; Gray, Hodson and Gordon 1993). Employers may find conflict between employees who work in the office and

those who work at home (Harris 2000; Harreld 2000; Public Service Alliance of Canada 1993). Some media reports have argued that teleworkers "leave gaps in the workplace", and make it difficult for managers to facilitate creative teamwork (Harris 2000). For example, a Vice-President of a U.S. Internet services business said "We're creating new things and building new solutions...We need people working side by side, in the office, sharing ideas" (Dunham 2000).

Organizations may see employee loyalty and organizational culture weakened (Dunham 2000; Konrad 2000; Mann 2000; Gray, Hodson and Gordon 1993). Some employers regard the cost of the technology required by teleworkers as a barrier (Harris 2000). Information Technology departments may have concerns about the additional demands of providing technical support to employees who work at home (Harreld 2000). There are also security issues when employees access company networks from home computers (Berinato 2000). High-speed cable and DSL connections that are always connected to the Internet are particularly vulnerable to security breaches (Berinato 2000; Wolk 2000). Additional security risks may exist because anti-virus and firewall software on teleworkers' home computers may not be updated as regularly as on computers in traditional workplaces (Wolk 2000).

The telecommuting literature often states that managers who are uncomfortable supervising employees who do not work in the employer's workplace can be a significant barrier to the continued growth of telecommuting (Harreld 2000; McMahon 2000; Gordon 1988). A recent survey of 769 human resource professionals in the U.S. found that 68 per cent said telecommuters are not more difficult to manage than on-site employees (Kleiman 2000). A spokesperson for the human resources company that conducted the survey suggested that:

> ...employees who telecommute must first establish their credibility in a traditional setting, and what makes them good employees in the office makes them good telecommuters. That's why they're not more difficult to manage. (Kleiman 2000)

Societal Challenges

As companies seek new ways to save costs, the distinctions between employment and self-employment are becoming increasingly blurred (Gray,

Hodson, and Gordon 1993). Home-based self-employment is sometimes the only alternative to unemployment or early retirement for workers whose jobs are eliminated when companies downsize. Terminated employees are sometimes offered the "opportunity" to continue working for the company as independent contractors (Haddon 1998; Owen, Rowe, and Saltford 1995; Christensen 1992). These persons are typically paid only for the completion of specific tasks or projects, receive no employment benefits, and have limited access to the companies' facilities and supports. Labour unions have expressed concerns that telecommuting and related changes may lead to the erosion of some worker protections (Public Service Alliance of Canada 1993).

2.4 Home-Based Work in Canada

The Government of Canada implemented a Telework Pilot Policy from 1992 to 1995. Approximately 549 federal government teleworkers responded to a survey evaluating the pilot (Treasury Board Secretariat, 1996).[5] The most frequently cited reasons for wanting to telework were to have more control over work conditions (e.g. fewer interruptions disturbing concentration), to reduce commuting time, to save money (e.g. on transportation, parking, clothing) and to have more flexible work hours. When asked if they had experienced any changes in their personal and professional lives since beginning to telework, the teleworkers reported major improvements in control over their work environment, job satisfaction, overall stress level, flexibility to coordinate work/personal responsibilities, work interruptions, balancing work and personal life, general health, productivity, absenteeism, and ability to meet deadlines (Treasury Board Secretariat 1996).

Although almost all of the teleworkers indicated that they were satisfied or very satisfied with their work arrangements, there were small negative changes on measures of work-related and social interaction with co-workers, sense of belonging to the organization and career opportunities. Some of the teleworkers and their union representatives also expressed concerns about occupational health and safety issues, primarily regarding

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[5] Most worked in Ontario and Quebec. Twenty-seven federal government departments were represented, but 62% of the teleworkers worked at Revenue Canada. Most (80%) had some post-secondary education. Seven percent identified themselves as persons with disabilities.

responsibility for ensuring that teleworkers' home offices were ergonomically sound (Treasury Board Secretariat 1996).

Duxbury, Higgins, and Neufeld (1998) studied 54 persons who participated in telework pilot projects at three Canadian organizations between 1993 and 1995.[6] Six months after starting to work at home one to three days a week, the most frequent advantages identified by participants were increased productivity, freedom from distractions and interruptions, not having to commute, flexibility to deal with non-work demands (e.g. doctors' appointments, home repairpersons) and having more time to spend with family members. Many participants were unable to identify any disadvantages related to working at home, but the disadvantages reported by some were problems communicating with co-workers, being summoned to the office for unscheduled meetings on work-at-home days, a tendency to work too much and being interrupted by family members.

Duxbury, Higgins, and Neufeld conclude that working at home helps professional parents balance work and family demands. They warn, however, that their sample is non-representative and the generalizability of their findings may be limited to other highly educated professionals who earn high incomes. They also note that the evaluation lasted only six months, which prevented any assessment of long-term impacts telework may have on work-family conflict.

Mirchandani (1998, 1999) interviewed 50 teleworkers in Ottawa, Montreal and Quebec during 1993-94.[7] She found that the study participants perceived numerous risks associated with working at home, and developed various ways of maintaining the boundary between their work and non-work lives. Most reported that they had a separate room in the home that was used exclusively for paid work activity. They also reported that they had developed various rituals of "going to work" at home to substitute for the transition usually provided by the traditional commute to work. For example, one participant carried her briefcase into her home office each morning. Another put a nameplate on the door of her home office to

6 All participants were married, had spouses who worked for pay, and had children living with them. Most were highly educated professionals with high incomes: 49% earned $40,000-60,000 annually and 42% earned more than $60,000 a year.

[7] Most were married to spouses who also did paid work, and had children.

reinforce that the room was her office, not a spare bedroom (Mirchandani 1999).

Most also maintained the psychological separation between their work and non-work lives by following regular work schedules. Within these schedules, however, participants reported having flexibility to attend to non-work demands such as house cleaning, grocery shopping, cooking, laundry, and childcare during work time.[8] Mirchandani found gender differences in teleworkers' reasons for maintaining these boundaries. Most of the male participants reported that they maintained the boundary between their work and non-work lives primarily for work-related reasons (e.g. to minimize interruptions while they were working.) Most of the women maintained this separation primarily to prevent stress associated with simultaneously juggling work and family responsibilities. Two-thirds of the women—but only one-third of the men—also indicated that they separated work from non-work to prevent work from intruding on their family lives (Mirchandani 1999).

As part of a larger survey, Ekos Research Associates (2001) surveyed 466 Canadians who did paid work at home in the fall of 2000.[9] A majority reported that working at home had improved their overall quality of life, working hours, finances, and standard of living. Most others reported that working at home had no impact in these areas, and only a small minority reported negative impacts. When asked about the impact of working at home on career advancement, the overwhelming majority reported that working at home had either a neutral or positive impact on their career advancement. Only 15 percent reported a negative impact on career advancement.

2.5 Home-Based Work and Persons with Disabilities

Within the general literature on home-based work and telecommuting, there are frequent suggestions that home-based work may provide new

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[8] Very few of the participants attempted to combine child-care with paid work at home, but almost all of the mothers were responsible for making arrangements for external childcare, and for organizing their paid work around the timings of those arrangements (Mirchandani, 1998).

[9] This survey included self-employed persons who worked at home, as well as persons who did overtime work at home.

employment opportunities for persons with disabilities (Johne 2000; Blake 1999; Robertson 1999; Haddon 1991; Grant 1985). This is also noted within literature on the vocational rehabilitation of persons with disabilities:

> [N]ew computer technologies and the growing trend toward home-based work appear to especially enhance the employment and earnings of people with disabilities. New information technologies that put a premium on intellectual and interpersonal skills offer solid employment opportunities for individuals with disabilities who have kept up with the changing business environment. (Radtke 1999, 7)

It has also been noted in mass media portrayals for at least twenty years:

> One reason for the growing appeal of moving a computer terminal into the home is that it allows employers to tap labor pools that could not otherwise be reached. And for those at home—either by design or necessity—it offers an opportunity to enter the ranks of the gainfully employed...Walgreen, McDonald's, and Mountain States Telephone & Telegraph are all installing terminals in the homes of the handicapped so that they can be employed to write computer programs without having to leave their homes. (The Potential for Telecommuting 1981)

> Telecommuting...can be the answer when a worker is disabled, temporarily or permanently... "Accommodating trained employees with health problems or disabilities while they're still able and willing to work is a driving force behind Canadian telework" says Bob Fortier, president of Innovisions Canada and the Canadian Telework Association. (Telecommuting Boosts Health, Productivity 1998)

> Three trends are working in concert to launch disabled people into the workforce: A record-high demand for skilled labour; advances in adaptive technologies—hardware devices and software programs that let the disabled perform common business tasks like searching the Web or using the telephone; and perhaps most important, an ever-increasing awareness and acceptance of workstyles such as telecommuting and flextime that let workers train for and perform full-fledged careers from home. (Cleaver 2000a)

Today's tight job market, coupled with employers' increasing comfort with flexible work arrangements, has yielded dramatic gains for America's 43 million, often-overlooked disabled workers. Thanks to technological advances, many disabled employees are spending all or part of their days working from home—and savvy companies see the competitive advantage of offering home-based jobs to this eager workforce. (Cleaver 2000b)

Canada

Between 1994 and 1999, four studies examined various aspects of home-based employment and disability in Canada. Price Waterhouse (1994) conducted five focus group meetings with persons with disabilities, three meetings with members of organizations representing persons with disabilities, and two meetings with employers.[10] Overall, the most frequently identified advantages of home-based employment were increased flexibility, not having to depend on unreliable accessible transportation, reduced stress and decreased costs. Disadvantages were isolation and barriers to career progression.

Persons with disabilities felt that home-based employment offered new opportunities to unemployed persons, while employers and persons from disability organizations felt that employers were more likely to provide home-based employment to existing employees than to new employees. Most participants felt that the opportunity to work at home would be most readily available to highly-educated knowledge-based workers who utilize computers. Lack of education, training and work experience, as well as the cost of special equipment, were identified as potential barriers to working at home. Many organization representatives said that more energy should be devoted to integrating persons with disabilities into regular workplaces rather than home-based employment (Price Waterhouse 1994).

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[10] The Price Waterhouse (1994) report does not attribute any comments to home-based workers with disabilities. A home-based worker with a disability who attended one of the focus group meetings of persons with disabilities reported that she was the only person in attendance who worked at home. It seems possible, therefore, that very few of the persons with disabilities who participated in Price Waterhouse (1994) had first-hand experience doing home-based work.

During 1995-97, the Canadian government conducted a $1.25 million pilot telework project for federal government employees with disabilities in the Ottawa-Hull area and Quebec (TECSO 1998; Lapointe, Massé, Beaudoin, Mabilleau, Szlamkowicz and Geoffroy 1998; Lapointe, Massé, Mabilleau and Beaudoin 1998a; Mabilleau et. al. 1997). The 18 participants worked at home two to three days per week and at their regular offices the other days. At the conclusion of the 18 month pilot, they reported that the greatest benefits of working at home were reduced time and effort spent in transportation, a more flexible work schedule, and access to a more adapted work environment suited to their individual needs (TECSO 1998).

Many of the participants—particularly those who were blind or had limited upper-limb mobility—reported that the quality of the assistive technologies provided by the employer often presented a significant challenge to working from home.

> …the technology in place was often obsolete, despite availability on the market of more effective solutions. (TECSO 1998)

The researchers suggest that the costs of providing assistive technology at two locations may be a barrier to persons with disabilities splitting their work time between their office and their home (Mabilleau et. al. 1997). TECSO (1998) indicates that there is a need for greater training for computer support staff responsible for installing and maintaining technical aids for employees with disabilities who work at home.

During 1997-98, a survey of 178 employers in B.C., Ontario, Quebec and Nova Scotia examined Canadian employers' attitudes towards home-based work by persons with disabilities. The project has not been completed and no findings or recommendations have been published. Employers reported that home-based employment opportunities would likely increase over the next five years. They also reported, however, difficulties recruiting candidates with disabilities, specifically that they often found gaps between the requirements of available jobs and the skills of job seekers with disabilities (Dena Maule, personal communication, January 2001).

A 1998-99 study examined the home-based work experiences of ten persons with disabilities in Quebec. A brief report indicates that some of the issues identified by the participants were the maintenance of boundaries between work and family life, the costs of technology, reduced career

development opportunities, supervision and the risk of increased stress and isolation (Boucher, Oullet, and Fournier 1999).

United States

A 1992 literature review found that there were relatively few U.S. telework initiatives which included persons with disabilities.

> Control Data Corporation ran a very productive program for disabled workers in which the only major problem stemmed from inexperienced or otherwise inadequate managers. A state of California project involving approximately 150 mostly professional level workers, which included mentally disabled workers, did find that telecommuting reduced commuting stress for these workers. (Bureau of Transportation Statistics 1992)

The report argues that those telework initiatives which included or were specifically for persons with disabilities "were discontinued in funding cuts that were due in part to the current preference of vocational rehabilitation specialists for mainstreaming."

As part of a larger program to increase the proportion of persons with disabilities in its workforce, the U.S. Department of Defense introduced a flexible work program for employees with permanent and temporary disabilities in 1993. An evaluation of the program's demonstration phase examined the experiences of 34 employees with disabilities who spent some their normal working hours at home (Hesse 1995, 1996). Persons with short-term disabilities tended to choose telecommuting for different reasons than persons with long-term disabilities. All those with temporary disabilities reported that working at home was the only alternative to not working at all. As a result, they worked at home full-time temporarily, returning to the employer's workplace after recovering from their disabilities. Most persons with long-term disabilities, however, worked at home part-time permanently. They worked at home some days (or some hours of a day) to accommodate medical demands, to avoid dangerous commuting conditions, or to accomplish more work.

A major advantage of working at home—both for persons with short-term and long-term disabilities—was the increased sense of control they experienced from being able to minimize disruptions caused by factors

such as inadequate transportation, attendant care, medical care, etc. Working at home also allowed participants who experienced fatigue or side effects of medications to work during the hours they were most productive. The participants and their supervisors reported that this increased sense of control resulted in improved productivity, health, and morale.

Most employees with short-term disabilities "reported being so grateful for not having to drain their sick leave accounts that they found the experience to be quite tolerable" (Hesse 1995, 421). Persons with long-term disabilities, however, reported a number of problems, beginning with difficulties initiating and negotiating a work-at-home arrangement. Some worried that co-workers perceived colleagues who worked at home as malingerers. As a result, some reported that they overcompensated by working longer hours. The author warns that "unclear boundaries in conjunction with anxiety over personal acceptance could set employees up for exploitation and burnout" (Hesse 1995, 422).

A 1994-95 survey of 160 American companies with telecommuting programs found that 24 percent of the organizations had employees with disabilities who telecommuted (Jarrett 1996a, 1996b, 1996c). The most common form of telecommuting by persons with disabilities was within employers' larger telecommuting programs, but Jarrett also identified three broad kinds of telecommuting arrangements specifically for persons with disabilities:

(1) programs—typically older ones—created to accommodate persons with permanent physical disabilities;
(2) newer programs developed to retain and re-employ employees with temporary disabilities as well as persons with permanent disabilities;
(3) informal arrangements to accommodate employees with temporary conditions such as cancer treatments, pregnancy complications, broken limbs, or family medical emergencies.

Most employers indicated that the requirements for successful telecommuting by persons with the disabilities were essentially the same as for persons without disabilities. Respondents identified isolation and the cost of assistive technology as additional considerations for persons with disabilities. To counteract the potential for isolation, employers reported that they adopted a variety of short-term and long-term policies and procedures. These included mandatory on-site participation at staff

meetings and limiting telecommuting to a maximum number of days per week (usually two or three). To prevent isolation over the longer-term, one U.S. federal agency has a policy that telecommuters with disabilities may request a change to an on-site position at any time, and must be offered on-site employment at least every two years (Jarrett 1996a).

In contrast to other literature which suggests that unemployed persons with disabilities face considerable barriers to telecommuting (Price Waterhouse 1994; Milpied 1995), 47 percent of the employers surveyed indicated that telecommuting is viable for new employees. An additional 19 percent said they "possibly" would allow a new employee to telecommute. Only seven percent said they would definitely not allow new employees to telecommute.

When asked what role telecommuting played in the broader provision of workplace accommodations for persons with disabilities, approximately one-quarter of the employers reported that telecommuting was the single most important workplace accommodation. The remainder viewed telecommuting as a supplement to accommodations at a central work site (Jarrett 1996a).

Analysing data from the 1997 Current Population Survey, Kruse and Hyland (1998) found that the percentage of U.S. workers with disabilities doing paid work at home (15.1%) was greater than the percentage of workers without disabilities who worked at home (9.8%). On closer examination, however, the higher overall rate of home-based work amongst workers with disabilities was due mostly to self-employed persons with disabilities who work at home.[11] The authors suggest that the high rate of home-based work among self-employed persons with disabilities may indicate that the number of persons with disabilities desiring home-based work exceeds the number of home-based jobs offered by employers (Kruse and Hyland 1998).

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[11] 63.5 per cent of self-employed persons with disabilities worked at home, compared to 52.5 per cent of self-employed persons without disabilities (statistically significant at p <.05). There were no statistically significant differences in the proportion of home-based workers with and without disabilities who were paid employees of governments, not-for-profit organizations and private industry.

Amongst employees without disabilities who worked at home, the most common reason for working at home was the coordination of personal and family needs (27.5 per cent). Only 5.1 per cent of home-based employees with disabilities cited this as their major reason for working at home. Instead, their most frequently stated reason for working at home was "illness, disability, and health reasons" (16.7 per cent). Less than one per cent of home-based employees without disabilities cited this as the major reason for working at home (Kruse and Hyland 1998).

On July 26, 2000, U.S. President Clinton issued a memorandum to heads of executive departments and agencies (Employing People with Significant Disabilities to Fill Federal Agency Jobs that can be Performed at Alternate Work Sites, Including the Home 2000). The memorandum directed heads of federal departments and agencies operating customer service call centres to identify positions that could be re-located to home-based or other off-site facilities, and filled by qualified persons with disabilities. The memorandum also directed department/agency heads to identify other positions—such as the processing of insurance claims and financial transactions—which could be re-located to home-based and other off-site locations, and carried out by qualified persons with disabilities. Departments and agencies that identified positions which could be performed at home-based and other off-site locations had until November 23, 2000 to develop a Plan of Action to recruit and employ qualified individuals with significant disabilities.[12]

On February 1, 2001, U.S. President George W. Bush created an "Access to Telework" fund as part of the U.S. government's New Freedom Initiative for persons with disabilities (New Freedom Initiative 2001). The fund provides state governments with matching grants to guarantee low-income loans for people with disabilities to purchase equipment to telecommute from home. This initiative also provides additional tax benefits for companies that contribute computers and Internet access to employees with disabilities who work at home.

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[12] Despite extensive inquiries to the U.S. Department of Labour, Office of Personnel Management, and Presidential Task Force on the Employment of Adults with Disabilities, we have not been able to ascertain if there has been any progress on the actions specified in this memorandum former U.S. President Clinton issued late in his presidency.

Europe

Ashok, Hall and Huws (1986) conducted a study involving nine persons with disabilities who worked at home in London, England. Most reported that working at home avoided some barriers to employment (e.g. freedom from traveling to work), but they also reported that it intensified other problems (e.g. isolation). All participants also felt that working at home was an inferior option to working outside the home. The report concludes by challenging the suggestion that home-based work is a solution to the transportation problems of persons with disabilities. Instead of using communications technology to "bring the work to the worker," the report argues that greatest priority should be given to the development of transportation systems which "bring the worker to the work" (Ashok, Hall and Huws 1986, 5).

Murray and Kenny (1990) conducted a study of 11 home-based teleworkers with disabilities in Ireland. Some of the advantages of working at home identified by the participants were flexible working hours, the ability to work without interruption and in a familiar environment, not having to rely on public transportation and not having to deal with inaccessible buildings and inclement weather. Disadvantages were lack of social contact, lack of work support and difficulties consulting others, as well as lack of structure, which necessitated considerable self-discipline and motivation. At the end of the project, several of the participating employers felt that telework was useful for retaining valued employees who needed the flexibility of work hours and location which telework could offer.

During the mid-1990's, the European Commission (EC) funded several pan-European research and development projects on telework and disability. One pilot project promoted the employment of persons with disabilities in telework centres in Ireland, Scotland, England, Finland, Italy, and Greece from 1994-95 (Mercinelli et. al. 1994).[13] The authors argue that teleworking is a feasible and promising employment option for persons with disabilities, but report that:

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[13] *Telework centres* (or *telecentres)* are facilities that provide generic workspaces and supports for teleworkers who cannot or prefer not to work at home.

…the development of disabled teleworking schemes in Europe has been slow. A number of pilot initiatives have taken place in the 1980s and 1990s, but generally these have struggled, both in the case of independent telecentres and in the case of regular employment of disabled teleworkers. (Mercinelli et. al. 1994)

A report on another EC-funded project that operated in France, Spain and Germany during 1994-95 argues that a major barrier to the expansion of telework for persons with disabilities is that employers are more likely to offer home-based work to current employees who become disabled or experience a progression of an existing disability (Milpied 1995). Unemployed persons with disabilities needing or desiring home-based work have greater difficulty because they must find an employer who is not only willing to hire a person with a disability, but is also comfortable with having employees working at home. Like other studies, Milpied cautions that isolation can result from working at home. She notes, however, that home-based work may provide an important source of new social contacts to persons whose unemployment was a major source of isolation (see also Pratt 1984).

Lilenthal, Goll and Zapp (1998) conducted a study involving 27 teleworkers with disabilities in Germany. The study participants identified four major advantages of telework, including the reduction or elimination of the need to regularly travel to work. Telework also provided them with freedom to establish a work schedule that accommodated their individual capabilities and needs. The participants also reported that the accessibility of an employer's primary workplace is not a barrier to teleworkers. Finally, the participants felt that, combined with emerging careers in information and communication technology, teleworking can provide new career opportunities for persons with disabilities.

The study participants also identified a number of disadvantages associated with telework. Nearly all of them were dissatisfied with the lack of personal contact and informal discussions with their colleagues and supervisors. They also reported that supervisors who cannot physically observe their employees working often make unrealistic demands of teleworkers with disabilities in order to prevent them from "slacking off." The study participants also reported that solving technical problems can be difficult and result in lost work time, with the burden of making up for this lost time often placed on the worker.

The authors also argue that two additional issues need to be addressed before large numbers of persons with disabilities can become teleworkers. First, many positions suited to teleworking require the use of e-mail and other features of the Internet. Vocational training for persons with disabilities must address these needs and adapt to other changing demands of the labour market. Secondly, technical aids allow many persons with disabilities to utilize computers, but accessibility to people with disabilities is often not given sufficient consideration during the design of software and documents on the Internet. The authors argue that international standards are necessary to ensure that these new media are accessible to persons with disabilities (Lilenthal, Goll, and Zapp 1998).

2.6 Learning Technologies and Home-Based Work

There is a vast and complex literature available regarding learning and educational technologies. Most of this research, however, examines the application of technology in education, and very little is directed at the use of technology by students with disabilities (Fichten, Barile and Asunciun 1999, 18). Additionally, there is little literature that describes the potential for applying learning technologies in the workplace, and almost none describes the possibility of using learning technologies to facilitate home-based work and telecommuting. This is surprising, since many challenges of home-based work (e.g. decreased contact with co-workers, exclusion from training, inability to participate in social events or meetings at work) could be addressed through the use of learning technologies such as video conferencing tools.

Development of European Learning Through Technology Advance (DELTA) is a European Commission program that provides hardware, software, and communications technologies for open and distance learning. DELTA defines learning technologies as:

> …all information and communication technologies which may be used in order to help the education and training processes. A more comprehensive definition of learning technologies should include all the media traditionally used in distance and open learning, i.e. printed text, telephone, postal services, broadcast and recorded radio and TV, but also encompassing the new media based on digital processing such as Computer Based Education, Fax, E-mail,

computer and video conferencing, interactive video, multimedia materials, etc. (DELTA 1990, 1)

In Canada, the federal government's Office of Learning Technologies has developed a definition of learning technologies with specific reference to disability:

Learning technologies for people with disabilities can be defined as tools that are used to carry out the tasks associated with the process of learning. The effectiveness of these tools in enhancing the learning and education processes for people with disabilities is mediated by instructional methods and strategies, curricula, and disabilities themselves or by others fostering inclusive social, educational, and economic environments for learning (Learning Technologies and People with Disabilities, 2)

In Canada, many of the technologies used to facilitate learning have become commonplace in office and white-collar work sites. Most office workers have access to phone, fax, computer and e-mail in their daily activities. According to the Office of Learning Technologies, "Canada is a pioneer in the application of telelearning and continues to be a globally recognized and respected source of research and innovation in the field" (Curry, Neill, Galan and Harasim 1998, 5). However, they add that, for the most part, Canadians have not utilized these technologies in their educational institutions or workplaces.

A group of Canadian researchers that developed a communication system to link hospitalized children to their classrooms sees potential for adapting this learning technology for use by persons with disabilities engaged in home-based work. PEBBLES[14] is a "video-mediated communication system" (Fels, Weiss and Talampas 2000, 2) with two components, one for the classroom and one for the hospitalized child. The classroom component consists of a "child-size, yellow, egg-shaped device which transmit[s] a live and interactive audio/visual image of the classroom to a computer located in the hospital. The hospital unit transmit[s] a full-sized, live audio/visual image of the remote student's face to the classroom" (Fels, Weiss and Talampas 2000, 2).

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[14] PEBBLES is an acronym for "Providing Education By Bringing Learning Environments to Students".

PEBBLES provides real time interaction between the hospitalized student, the classroom, and other students. The remote user controls the classroom PEBBLES unit with a modified Nintendo game controller. An animated hand located near the top of the classroom PEBBLES unit can be "waved" by the hospitalized child to get the attention of the teacher or other students in the classroom. This use of a technological avatar provides a physical presence for the child at the school site, increasing their presence in the classroom, and allowing for more meaningful interaction with their teacher and classmates.

Pilot studies of this technology have found that it successfully facilitates interaction between the remote user and other members of the group (Williams et. al. 1997). The participants reported feeling as if they were a part of the group, and were able to complete between 80-90% of all tasks (e.g. reading a blackboard, participating in a discussion, finding a person in the classroom). Children were familiar with the Nintendo game controller and found it effective, but an adult user found it awkward and unfamiliar. Other limitations identified by individual users included not being able to draw or type on the classroom computer, not being able to read the classroom computer screen, and difficulty in following group discussions.

These researchers have explored the possibility of adapting this technology for use by persons with disabilities who work at home. Weiss, Fels and Treviranus (1999) argues that PEBBLES-like technology could provide—as it does in the classroom—a "telepresence" for home-based workers, allowing them to better interact with co-workers and participate in on-site activities such as meetings and training. The possibility of adapting this learning technology for use by home-based workers has much potential. Unfortunately, there has been almost no research on the use of learning technologies by persons with disabilities who work at home (Deborah Fels, telephone interview, 3 October 2000). Fels and her colleagues have also been unable to secure funding to adapt and test their PEBBLES technology in home-based work settings.

Other learning technologies have the potential to assist home-based workers with disabilities. The development of "desk-top training"—training modules delivered via desktop computers to individuals—allows each person to train individually and at their own pace (Fichten, Barile and Ascuncion 1999, 1). These kinds of learning technologies could help to

solve some of the more common barriers to home-based work, such as the difficulty of delivering training to off-site workers. Ergonomically-designed computer hardware (e.g. keyboards) make computer access easier for people with carpal tunnel disorders (Fichten, Barile and Ascuncion 1999, 20). Aurora Systems Inc., a software development company, has designed a system of communication components that "can be used to attach augmentative communication devices, laptop computer trays and other equipment suitable for mounting on wheelchairs, beds, and tables (Aurora, quoted in Fichten, Barile and Ascuncion 1999, 20).

Fichten, Barile and Asuncion also examined the availability and use of learning technologies by students with disabilities in colleges and universities across Canada. They found that "computer and information technologies have the potential both to enhance the lives of people with disabilities as well as to deny them equality of access to education, jobs, and community life" (Fichten, Barile and Ascuncion 1999, 9). Throughout the report, they stress the importance of ensuring that new technologies are accessible, therefore ensuring that "people with disabilities are empowered by the use of learning and information technologies. Thus, they will be able to contribute to the new economy, allowing people with disabilities the opportunity to become experts in new technological fields" (Fichten, Barile and Ascuncion 1999, 17). They also point out the "software that is useful for students with a specific type of impairment may, in fact, create barriers for students with a different impairment" ((Fichten, Barile and Ascuncion 1999, 52). In the development of new technologies, it will be important to consider issues of access for all groups, or risk further excluding persons with disabilities through the use of technology.

3. METHODOLOGY

3.1 Project Overview

This study began in March 2000 and was completed in January 2002. An eight-person Advisory Committee of researchers and representatives of community-based disability organizations, employers, governments, and the primary funder provided guidance and advice. Mid-term and final evaluations of the project were conducted by an evaluation team consisting of a university professor, a former director of a consumer-based organization and a human resource consultant.

A literature review was conducted from April to August 2001. Focus group meetings with key informants were conducted in June and October 2000. Data collection with home-based workers with disabilities took place in December 2000 and January 2001. Analysis of this data occurred during February and March 2001. The preliminary findings were presented and discussed with the home-based workers and key informants at three workshops held in March and April 2001. A handbook entitled *Best Practices in the Home-Based Employment of People with Disabilities* was written during the spring and summer of 2001, and this report was written in the fall of 2001. Both documents were published in January 2002.

3.2 Definitions

This study focused on persons with disabilities who worked at home as paid employees. Because self-employed persons usually have greater control than employees have over their work arrangements, most self-employed persons and all operators of home-based businesses were excluded from the study. Several persons who were independent contractors were included in the study because their individual work arrangements (e.g. an extended contract with a single organization) were similar to paid employment.

The study included home-based workers who worked at home all the time, as well as persons who split their working times, in varying proportions, between their homes and their employers' workplaces. It excluded persons whose only work at home was paid or unpaid overtime work done on

evenings or weekends after working a full day or week at their employers' workplaces.

3.3 Data Collection

Key Informants

Two focus group meetings with key informants were held in June 2001. The first meeting was attended by nine representatives of disability consumer organizations and agencies that provide employment supports to persons with disabilities. Four representatives of employers attended the second meeting. A third key informant focus group meeting held in October 2001 was attended by five staff of unions and other labour organizations.

All persons who attended the key informant focus group meetings were issued $50 honoraria.[15] The agendas for the meetings are reproduced in Appendices 1, 2 and 3 of this report. The primary purpose of these meetings was to identify what each group regarded as the benefits and challenges that may be experienced by persons with disabilities who work at home. The findings of these meetings, as well as the literature review, shaped the development of the instruments that were subsequently used for data collection with persons with disabilities who worked at home.

Home-Based Workers with Disabilities

During December 2000 and January 2001, 22 persons with disabilities who worked at home were asked to (1) complete a questionnaire, (2) attend a focus group meeting or interview and (3) record a daily diary for two weeks. Twenty-two persons completed the questionnaire (see Appendix 4) that collected demographic data as well as information about working at home. Twenty-one attended a focus group meeting or an interview.[16] Eleven recorded diaries about their experiences working at home.

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[15] At various points in the study, some participants declined or returned honoraria, primarily because their employers did not permit them to accept payment or gifts for attending work-related activities. This allowed for the payment of additional honoraria to study participants who attended workshops where the study's preliminary findings were discussed, and/or reviewed draft documents.

[16] One person who completed a questionnaire was unable to participate in a focus group or interview.

The focus group meetings and interviews utilized an agenda with five broad questions (see Appendix 5). Time devoted to discussion of each question varied from meeting to meeting, depending on the experiences and interests of the participants. A few participants who lived outside of Winnipeg or had concerns about confidentiality participated in focus group meetings or interviews by telephone. All persons who participated in a focus group or interview were issued $50 honoraria.

Members of the research team alternated responsibility for facilitating each meeting. The other researchers assisted the facilitator by taking detailed notes of the discussion, operating the tape recorder and asking supplementary questions.

Eleven persons who attended a focus group meeting or interview subsequently agreed to complete daily diaries for two weeks during December 2000 and/or January 2001.[17] They were asked to answer six questions about their experiences working at home each day for two weeks (Appendix 6). Most persons recorded diaries for a consecutive two-week period, but a few recorded two weeks of entries over a longer period because Christmas holidays fell during the two-week period. Most of the people who participated in the diary phase of data collection provided daily e-mail submissions, but some persons who did not have access to e-mail submitted handwritten diaries. All persons who completed diaries received $50 honoraria.

Supervisors of Home-Based Workers with Disabilities

Each of the 21 home-based workers with disabilities who attended a focus group or interview was asked for permission to contact her/his supervisor. Seven gave their permission, and five of their supervisors attended a focus group meeting in January 2001. See Appendix 7 for the agenda used for that meeting. All supervisor participants were issued $50 honoraria.

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[17] Some participants who were working at home when they agreed to participate in the study were not working at home during the diary phase of data collection. Other participants did not complete diaries because they took extended vacations or business trips during the diary period. Others declined to complete diaries because they felt that they could not commit the time required.

3.4 Data Analysis

All of the focus group meetings and interviews were tape recorded and professionally transcribed.[18] A researcher compared the transcripts to the source audio recordings and edited the transcripts for improved readability. None of the words spoken by participants were changed, but some punctuation was added or altered. The researcher was also able to discern some words the transcriptionist found inaudible, corrected some technical terms and acronyms, and added contextual notes about laughter, lengthy pauses, interruptions and words emphasized by participants.

The edited transcripts were then reviewed for thematic content, guided initially by the research questions in the meeting/interview agendas. Notes were made of the discussion of each theme at each meeting or interview. After all of the transcripts had been reviewed, notes about each theme were compiled, providing a record of all discussion of that theme during all of the focus groups and interviews. The notes for each theme were then re-examined for sub-themes, patterns and deviations from these patterns. A similar process was used in the analysis of the diary data.

Following the completion of data collection and preliminary analysis, the preliminary findings were presented and discussed at three workshops in March and April 2001. Representatives of disability service agencies, consumer organizations and unions attended the first workshop. Supervisors, employers and human resource professionals attended the second workshop. The third workshop was attended by most of the home-based workers with disabilities who participated in the study. The meeting participants discussed the findings and suggested best practices. The research team reviewed written minutes of these meetings. Meeting participants received $50 honoraria.

3.5 Presentation of the Findings

To protect the anonymity of study participants, some personal pronouns (he/she, him/her) used in the presentation of the findings have been

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[18] The recording of one focus group meeting was found to be inaudible at the conclusion of the meeting. The researchers reconstructed main points of that group's discussion from extensive notes and a de-briefing discussion immediately following the meeting. Two persons who attended that meeting were subsequently interviewed individually.

changed, i.e. a participant described as "he" may be female. Selected quotations from the transcripts illustrate many of the findings.

4. FINDINGS

4.1 Key Informants: Service Agencies and Consumer Organizations

Nine representatives of disability service agencies and consumer organizations attended a focus group meeting in June 2000.[19] The majority of the participants were staff of disability service agencies. All of the agency representatives indicated that they had some experience supporting persons with disabilities working at home in the following occupations:

- news clipping service
- monitoring television advertising
- telemarketing, teleservicing, and telephone surveys
- garment manufacturing
- insurance claims
- banking

The participants at this meeting identified the following benefits persons with disabilities may experience by working at home:

- reduced time and effort for transportation
- freedom from negative aspects of workplace (noise, chemicals/fragrances)
- work hardening (gradual return to work after injury)
- conserving energy
- flexibility to rest when fatigued, work outside of normal work hours

Some participants discussed home-based work as a retention or return-to-work strategy for persons who were already employed, but the majority of the discussion focused on home-based work as an additional option for persons who were unemployed.

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[19] See Appendices 1-3 for the agendas used at the three key informant focus group meetings.

Participants identified the following challenges persons with disabilities who work at home may experience:

- isolation
- difficulty maintaining boundaries between work and home life
- motivation
- communication with colleagues

Participants identified the following factors that may be barriers for persons with disabilities interested in working at home:

- self-esteem and strong negotiation skills are required to request/negotiate working at home
- cost of equipment (many employers expect employees to utilize their own computers while working at home)
- contract work and piecework don't provide stable income for persons who currently depend on income assistance
- orientation and training traditionally occur at the employer's primary workplace

Participants also indicated that two benefits for employers are reduced overhead costs (i.e. office space) and reduced absenteeism (e.g. home-based workers may do some work while sick). They also indicated that many employers are hesitant to allow employees to work at home.

4.2 Key Informants: Employers

Four persons attended a focus group meeting for employers in June 2000. Three represented large employers, one in the private sector and two in the public sector. The fourth participant was a human resource consultant with broad experience working with small, medium, and large organizations. The participants were familiar with broad telework and flexible work arrangements, but most had little or no direct experience facilitating home-based work arrangements for persons with disabilities.

One participant indicated that her organization has a written agreement that must be signed by employees who will be working at home, the employer, and the union. Her company also provides or pays for the equipment and services required by employees who work at home.

Participants reported that Winnipeg does not have most of the conditions that are driving the expansion of telework in larger cities. Commute times are still reasonable, and office space is plentiful and affordable (particularly in suburbs and industrial parks). As a result, they do not expect demand for telework in Winnipeg to increase substantially, except from employees seeking greater flexibility to deal with family and other non-work responsibilities. One participant reported that most telework in Winnipeg occurs at large employers and small businesses in start-up mode.

Participants reported a lengthy list of challenges employers may experience when employees work at home:

- security/confidentiality of company documents/information
- difficulty identifying the competencies required by home-based workers
- some jobs are more suited than others for evaluating performance by results rather than activities
- employees working at home have reduced access to informal problem-solving support from co-workers
- isolation
- impact on co-workers (jealousy; extra work required to respond to home-based workers' information requests)
- barriers to career progression
- some assistive technology is still very expensive
- difficulty accessing information on technology
- additional expertise required to provide technical support for assistive technologies
- health & safety, workers compensation

Participants also indicated that unions are increasingly supportive of persons with disabilities, telework and other flexible work arrangements.

4.3 Key Informants: Unions

Five persons attended a focus group meeting of union representatives and staff in October 2000. Two participants were from unions that represent government/public service employees and two persons came from unions representing private sector workers. A staff person of a provincial labour organization also attended. All had previous involvement with the broad

issue of home-based work. Four also had direct experience with union members with disabilities who worked at home.

Participants reported that several unions and joint committees have conducted research on home-based work, including a major study conducted by a federal public service union in the early 1990's. One participant indicated that most of the issues identified in that research remain problems, but technological changes have reduced some of the factors that were problems six to eight years ago.

Some participants reported that their unions had negotiated formal letters of understanding or agreement about home-based work with employers. One indicated that language about home-based work has subsequently been incorporated into the collective agreement in one workplace where he/she represents workers.

The two public sector union representatives indicated that their language stipulates that (1) telecommuting can only be initiated by employees, and (2) the employee, employer, and union have to agree on the telecommuting arrangement. Although these employers can't initiate telecommuting arrangements, one participant clarified that employers ultimately control these arrangements.

Participants reported that employers can benefit several ways by having employees work at home:

- reduced workers' compensation costs (e.g. early return to work for injured workers)
- reduced overhead costs (e.g. office space)
- improved ability to retain employees

One indicated that some employers cite the environmental benefits of reduced automobile traffic and pollution, but another argued "that's usually a spin, that wasn't their motivation to start with." One participant also indicated that some research has found that telecommuting results in reduced absenteeism.

Participants reported that telecommuting has not grown significantly in Manitoba. One factor cited was employers' concerns about liability for injuries that occur while workers are working at home. Another participant

noted that another barrier to the growth of telework is that employers have greatest control when all workers are in central work locations.

Participants indicated that most persons who work at home are motivated either by family responsibilities or disability. They reported that persons with or without disabilities who work at home may face the following challenges:

- isolation
- reduced access to job opportunities
- time management
- maintaining boundaries between work and non-work time
- reduced access to supervisor
- confidentiality/privacy/security
- health and safety
- access to technical support
- conflict with co-workers who would like to work at home

Several participants described union members with disabilities who would be on long-term disability or retired if they didn't have the opportunity to work at home at least some of the time. One participant reported that many employers will make minor accommodations for employees who develop illnesses or conditions such as multiple sclerosis, but prefer to offer long-term disability or early retirement if the person subsequently requires increased accommodation.

Participants reported that persons with learning or mental health disabilities experience greater barriers to working at home than persons with other kinds of disabilities. A specific barrier was the risks associated with disclosing these kinds of disabilities to an employer.

Participants reported that it is difficult to represent union members who work at home. For example, one participant reported that one home-based worker she/he represents was not informed of a labour-management dispute, and continued to work for a week after the work stoppage began. Participants also noted that it is difficult for unions to organize home-based workers who are not union members.

Participants indicated that some employers may use home-based work as a premature and overly-aggressive return to work strategy that may negatively affect the rehabilitation of injured workers. Participants also reported that unions are concerned about employers who offer disabled workers early retirement packages that include the opportunity to create home-based businesses to which the employer will sub-contract work.

4.4 Home-Based Workers

Questionnaire

Twenty-two (22) persons with disabilities who worked at home completed a questionnaire prior to attending a focus group or interview in December 2000 or January 2001. The answers provided by one person who did not subsequently attend a focus group meeting or interview have been omitted so that the findings of the questionnaire and focus groups/interviews correspond to the 21 people who participated in both.

Gender and Age

Twelve of the 21 persons who participated in a focus group meeting or interview were women and nine were men. Most were between 35 and 54 years of age.

Ethnicity and Language

Three participants self-identified as Aboriginal persons, two were members of visible minority groups, and six reported that English was not their first language.

Disability

Approximately two-thirds of the participants reported that they experienced physical/mobility disabilities. Six participants had visual disabilities. Nine reported medical conditions such as multiple sclerosis, diabetes, fibromyalgia, arthritis or post-polio syndrome. Other participants reported disabilities related to learning, mental health and environmental sensitivities. Seven indicated that they had multiple disabilities. None reported hearing disabilities. Four participants reported that their disabilities were the result of workplace injuries.

Education

Sixty-five percent of the study participants had university degrees. Most others were college graduates or had attended some university. Only one participant did not have any post-secondary education, and that person was a high school graduate.

Family Status

Approximately 40 percent of the home-based workers were married or living common-law and approximately 40 percent were single. The remainder reported their marital status as divorced or widowed. Six of the 21 study participants reported that they had children under the age of 18 living with them.

Occupation

The participants worked in a wide variety of jobs, from managers and professionals to casual or contract workers. One-third of the participants were involved in some kind of research work, from coordinating major studies to doing telephone interviews for surveys. Other participants were project coordinators, counsellors, social workers, interpreters, translators, church workers, desktop publishers, engineering technologists and program officers. Others worked in accounting, banking and building maintenance.

Approximately one-third of the participants had worked for their current employers for less than a year, one-third for 1-10 years and one-third for more than ten years.

Income

Participants reported a wide range of employment incomes, from less than $10,000 a year to more than $50,000. Approximately half earned between $20,000 and $40,000 a year. Most of the persons who reported incomes under $20,000 were doing part-time, casual or contract work, or were not working at the time they completed the questionnaire. One-third of the participants reported that they received income from a government assistance or insurance plan.

Work Arrangement

Approximately one-third of the participants worked at home all the time. One-third worked at home 11-20 days a month and worked the other days at an employer's workplace. The other one-third did most of their work at the employer's workplace, and worked at home fewer than 10 days a month.

Approximately one-third of the participants had less than one year of experience working at home. Half had worked at home for 1-5 years and 20 percent had worked at home for 6-10 years. Most worked for employers with fewer than 20 or more than 100 employees. Approximately one-third had worked for their current employer for less than one year, one-third for one to ten years, and another third for more than ten years.

The vast majority of participants were employees, but a few self-employed independent contractors were included because their working arrangements and conditions were very similar to paid employees (e.g. they did not have multiple contracts).

4.5 Focus Groups and Interviews

During December 2000 and January 2001, four focus group meetings were held with persons with disabilities who worked at home. The size of these focus groups varied from three to six participants. Three participants were interviewed individually. In total, 21 people participated in this part of the study.

Question One: What is the main reason you work at home?

Most participants indicated multiple reasons for working at home. Some proposed working at home while already working for an employer, typically to accommodate a new or exacerbated disability. Some proposed it during negotiations with prospective employers. In a few cases, employers suggested it, either as a possible way of accommodating the employee's disability or as part of a broader organizational telecommuting program.

The reasons participants reported for working at home often related to employers' workplaces that were not fully accessible. The most common

accessibility issues concerned assistive technology that employers were unable or chose not to provide in their office workplaces. The most common examples were computer software/hardware that was expensive and/or required a more powerful computer than was available at the employer's workplace.

One participant began working at home because her employer's former location was not physically accessible. She reported that she continues to work at home partly because she has better access to attendant care at home. On days that she has to go to her employer's workplace, she usually has to ask co-workers to assist her with personal needs.

> …at home, I just pick up the phone whenever I need the help, and my orderlies are there…I'm at home, and at least I feel safe there, you know, because there I have the people that I need to get help from. So that's important.

One participant indicated that one of her most effective pain management strategies is simple to provide in her home, but would be difficult for her employer to provide in the office setting. Another reported that there was no place for him to lie down and rest at his employer's workplace.

Some participants reported that they worked at home because previous employers had not accommodated them satisfactorily when they disclosed their disabilities and/or requested accommodation. They utilize home-based work as a strategy to avoid further humiliation and/or disappointment. One participant with multiple hidden disabilities said she had turned to home-based work because:

> …when I have tried to go in the front door and either work without disclosing or work with disclosing, I'm not accommodated in the manner in which I need…I'm patronized and my sense of dignity and self-confidence suffers. So for me, instead of going in the front door…I've gone in the back door and looked for work that I can manipulate and massage to my purposes and my needs without the employer knowing that's what I'm doing.

Participants frequently identified the flexibility to work non-standard hours as a reason for working at home. In most cases, they required this flexibility

to work when they were most productive and rest/sleep when necessary. Fatigue was the most frequently cited reason for requiring this flexibility.

> Sometimes, if I slept all day, I was ready to go at eight or nine o'clock at night, and I could spend two or three hours on the computer. So that was really good.

> …you sort of work your own hours when you're at your peak. You know, if it's a bad day, you can spend an extra hour in bed and then you're at your peak…

> …since I really started feeling the onset of [chronic condition]…I get tired. And if I get tired, I can rest because I find I do get tired often, and I get tired very deeply, but I rebound very quickly…

Others indicated that the side effects of medications contributed to their need to work flexible hours.

Some participants who worked flexible schedules said that their workdays had fixed boundaries (e.g. 7 AM to 8 PM). Others reported that they worked at various times around the clock. Most persons in the latter situation indicated that working in the middle of the night was a way of managing pain that prevented them from sleeping.

> I only get [approximately three] hours sleep a night. On the bad nights, some nights I don't sleep at all…I can actually take my mind off my pain by going and putting myself in-depth in my work.

Most participants enjoyed the ability to work outside of standard hours, but this flexibilty resulted in challenges for some participants. These challenges will be discussed in a later section of this report.

Manitoba weather presented challenges to some participants. These were typically persons with mobility disabilities who risked falling and injury when walking on slippery winter surfaces. One person indicated that extreme temperatures exacerbated the pain related to his disability. Working at home reduces his need to go out on cold and hot days.

One participant who worked at home part-time and outside of the home at a different job indicated that working at home allowed him and his

spouse—who also has disability—to take care of their child. Some participants chose jobs that were advertised as being home-based work, or took jobs that had been done at home by the incumbents.

Question Two: *What are the greatest benefits and advantages of working at home?*

In addition to the factors they described as the reasons they worked at home, participants listed a host of additional benefits and advantages. In comparison to the reasons they worked at home—which were usually related to disability—many of the additional benefits they reported have also been reported by persons without disabilities who work at home. Many participants commented that they felt more comfortable working at home because of characteristics that distinguish their homes from conventional workplaces.

> The familiarity of the work environment is conductive to productivity, it seems to me.

> I think, partly because of the [mental health condition], I work a lot better when there's a lot of quiet.

Some participants reported that an advantage of working at home is freedom from the distractions and politics that exist in many workplaces.

> I work so much better at home. I get so much more done because of the lack of interruptions that it would not be my choice to go back to working in the office on a full-time basis.

> …I found that a lot of people are unproductive at work in the work environment. If it's a bad day, people sit around, spend a lot of time gossiping. And, you know, I just don't have a lot of time for that because I'm not really interested. [laughs] So you stay away from that environment, and I find that the time that you do work is pretty much all productive time…

> I don't have to deal with the office politics day in and day out, only once a week when I go in there.

Some participants reported a resulting increase in productivity.

What I've really noticed…when I'm working out of the main office…is that I'm not nearly as productive. So working at home…is a lot more productive than working in the main office. So that's the main benefit for me.

Others welcomed the freedom from unproductive and/or stressful time spent traveling to and from work. Others noted that they saved money by not having to wear dress clothes to work, buy lunches or pay bus fare or parking. One participant reported that he regarded flexibility to care for his spouse—who also has a disability—as a benefit of working at home.

My [spouse] also has a disability—she has [chronic condition] very bad—and she has good days and bad days…When she has a bad day and she can't work…I can be home with her and help her with whatever she needs. So, from that point of view, working from home is very beneficial for me as well.

Some participants who had done short-term contract work from home indicated that they liked the flexibility this combination provided.

…because I've worked for many years doing contract work and working by myself…I don't think I'd want to work in an office…

Some participants reported that working at home allowed them to remain productive during periods when their disabilities would have prevented them from going to their employers' workplaces.

Sometimes I have problems with my skin where I have to completely stay off of my [wheelchair]. And if I have to stay off of my chair, I'm off for sometimes three days to one week. So those are the times when the books are piled on my bed and I'm reading [laughs]. Still planning something to do, still writing in bed, still finding one way or another to at least get some work done without having to lie there and wonder what's going on at the office…

Question Three: Have you experienced any challenges or disadvantages working at home?

Setting Up the Arrangement

Some participants reported that they experienced some resistance from their employers when they proposed that they do some or all of their work from home.

> I said "I could work as much as possible at the office, but there are times when my [disability] gives me problems that I can't come into the office, and if there's a way to work from home, I will do it." At first, it was like "it [working at home] is not done in [name of employer], nobody works from home."

One participant who negotiated working at home with a new employer described how she addressed this issue during the interview.

> In my own mind I had already anticipated what might be some of the issues around [working at home]. What I did was look at resolutions to these anticipated problems, so that I would have answers at the ready if there would be any questions about what would happen...I think [employer] was really pleased that somebody had thought about these things ahead of time.

Most participants did not have formal written agreements stipulating the terms and conditions of the arrangement. Those who did have formal agreements worked in large organizations with unionized workforces. (Note, however, that some of the participants who did not have formal agreements also worked for large organizations with unionized workforces.)

Other challenges to setting up a successful home-based work arrangement included:

- Persons with disabilities who are unemployed and/or receiving income assistance may not have the confidence and self-esteem required to request and negotiate a home-based work arrangement.
- Some home-based workers are reluctant to ask their employers to provide or pay for equipment or services used to work from home.
- Some employers are resistant to home-based work.

Working at Home and at Employer's Workplace

Some participants who split their time between their employers' workplaces and home indicated that this provided a positive mix of social interaction (with colleagues, consumers or customers) and uninterrupted time for tasks like reading, writing and research. Others indicated that working at two locations can be more challenging than working at home exclusively. For example, co-workers need to be advised more frequently about one's schedule and location.

One participant who worked at home and at her employer's workplace reported that when she telephoned customers from home, she didn't reveal that she was working at home. This sometimes led to problems, because customers would sometimes drop into the office later, only to discover that she was not there.

Isolation

Some participants reported that they sometimes experienced feelings of isolation working at home.

> You can become isolated. Sometimes you get too much time to yourself. It can be—it can spiral you down, especially in the winter time.

A person who does self-employed contract work indicated that she sometimes feels isolated, and suggested that persons who work for employers have a network of co-workers and may be less susceptible to feelings of isolation. In general, however, relatively few participants indicated that they experienced major feelings of isolation. In fact, some reported that the solitude afforded by working at home was a good match for the requirements of their jobs.

> I don't find it particularly isolating working at home, because when I'm working at home I'm so darn busy I don't even have time to think about [laughs] whether I feel isolated or not, because usually I've got too darn much to do. If I need to hook in with somebody, I just do it, either through e-mail or phone or whatever. But that's because I'm working for an employer where there's other—we have had other

people in this office who have done some work at home...But I think if you sort of feel like you're the one and only, it can get very, it probably can get very lonely.

The fact that most participants did not work exclusively at home may also alleviate isolation that exclusively home-based workers may be more likely to experience.

Co-workers and Supervisors

Although relatively few participants indicated that they experienced major feelings of isolation, a frequent theme concerned the effect working at home has on one's connection to the organization, and on relationships with co-workers and supervisors.

> ...I knew what I needed to do to do my job. I didn't know who was cheating on their husband [laughing] and I didn't know who was pregnant all the time, but that's stuff that you learn in the lunchroom that's really isn't essential to your job. It's one of those things where I knew the important stuff because I was involved in all the staff meetings, but there is a different feeling and there's no doubt about it...the important stuff I knew, but it was differently a different relationship.

> ...losing touch with staff and what is happening in the office is definitely a negative.

> Sometimes it was annoying, because people would come into your office and they want to chat, but then you're busy and you really don't want to get into this, and you're concentrating on your work and they're sort of spoiling your train of thoughts and you can't tell them "listen, I'm busy, get out of here." So in that way, it's sort of easy, but it's very important not to lose that contact with people and I think you could lose it easily without even realizing it. That's one thing that I made a conscious effort as not cutting myself off.

Several participants who have home-based co-workers indicated that they communicate frequently.

…we have each others' phone numbers, so when we're running into a problem area, we phone each other and—I think the word is *commiserate* together.

One reported that he keeps up on informal information by communicating with a co-worker he used to work with in the office.

One participant who manages other teleworkers said that in an office setting, colleagues may notice signs of declining health in a co-worker with a disability. The reduced visibility of home-based workers may be risky for persons with disabilities whose health declines.

Some participants indicated that they felt well supported by their co-workers, but several told of co-workers who were insensitive to the participants' reasons for working at home. One reported that some of his colleagues expected him to complete projects on short notice even when he was experiencing disability-related problems that prevented him from working.

> Sometimes some people in the office don't understand. We do have a couple of those that don't understand my situation. Even though they've been there for a while, they just can't get it through their thick skulls that I need to do this…They push, they want their thing, their product ASAP. And if you're sick, it's not an excuse. There are [people in the organization] that are like that…They tend to forget because—the way I work at the office, it doesn't look like I have a disability, even though I have my [assistive technology] and all that. To them, I don't really have a disability.

Some participants felt that some of their co-workers resented their ability to work at home.

> I think I had the sense—when I first started working at home—that there was some resentment from the staff. That may have been imagined, I don't know. [*Facilitator asks: "Resentment around…?"*] Just the flexibility in my position. Well, I don't know that they [co-workers] ever requested it, but they were not working from home, so maybe they were seeing that as sort of special arrangements.

One participant felt that having co-workers already working at home minimized resentment from office-based co-workers.

> I found it really hard at the beginning, but luckily, other people—men and women—who had children at home were already working at home environments. So I was lucky that way.

She indicated that her manager was also helpful in addressing co-worker resentment.

> [He said to co-workers] "I'll tell you what: if you want to work at home, you come up with an arrangement that will make you do your job better, and we'll consider it…" But also a couple of times he said, "Would you like to have [disability] or would you like to be [laughs] in good health like you are?" A lot of them, you know, the ones that were kind of simple minded, then they didn't think that way anymore.

One participant who is one of the most senior employees on his team indicated that he did not sense that co-workers had any jealousy about him working at home. He did suggest, however, that "there could have been some noses out of joint" if he had been a younger employee who worked at home.

Communication

Participants in most focus groups indicated that they have less access to informal communications than they would have if they worked in the same location as their co-workers.

> Things like somebody getting a promotion at the end of the day. At 4:00 the doors would close, they'd pull everybody together and say "so and so is going on to a new job". Obviously, nobody ever thought to phone me for that. But you know what? I wouldn't have thought to phone anybody for that either, because you just, you know, getting in the moment and you'd go and you forget that there's a person who's at home that doesn't know about this. I found out about it eventually, but there's always that spirit of excitement of new things happening…I wasn't always thought of, but I couldn't expect to be, you know. It's just one of those things you have to stomach.

A participant reported that his workplace has occasionally neglected to advise him that a meeting he is attending has been cancelled or postponed.

> …occasionally, I will miss communications. Not very often, but it does happen, where there might be a meeting, or something's been cancelled or changed…People mostly remember to e-mail me or phone me, but the rare occasions when it happens, you know, I have come in for a meeting that's been cancelled…So that can be a disadvantage sometimes, in that you don't hear absolutely everything, because you're not on site.

Some participants emphasized that it is important for home-based workers to advise co-workers when they will be working at home, when they will be in the office, and when they will be working elsewhere. A participant who is part of a team of persons who spend varying amounts of time at home and at their employer's workplace reported that problems sometimes arise when some colleagues don't advise other team members where they are going to be working each day.

A participant with a visual disability indicated that it is important for co-workers to understand that he requires print and electronic documents in formats that are compatible with the assistive technology he uses.

Meetings

Most participants reported that they physically attend meetings at their employer's workplace. Others indicated that they participate in meetings by telephone. Interestingly, however, some home-based workers (and their employers) who experienced difficulty traveling to attend meetings had not considered conference calls as a solution.

One participant's organization had recently begun to utilize videoconferencing technology, but had encountered barriers related to the technology's requirements for powerful computers and high-speed Internet connections. Another participant reported that his organization is also considering obtaining this technology.

One participant said that it is important to have regular meetings with all team members, including conference calls. Group scheduling software can

simplify the process of finding a date and time suitable to all members of the team.

Supervision/Performance Management

Many participants indicated that they work relatively independently and have minimal contact with supervisors. One participant indicated that his computer activity can be observed by his supervisor over the employer's network. Another said that her co-workers had all received pay raises following recent performance evaluations, but she had not. Several participants had supervisors who worked in a different city. One indicated that this was a challenge, that they "always seemed to be passing like ships in the night, never quite being able to connect".

Professional Development

There was relatively little discussion about the impact of working at home on professional development. Approximately half of the participants worked for small non-profit organizations that often have limited budgets for professional development. One participant indicated that some training events are held in locations where the distance from the parking lot to the facility challenges his physical capabilities. Some participants reported that they trained co-workers in their homes, countering the belief that home-based employees have limited opportunities to orient and train co-workers.

Career Advancement

As with professional development, there was very limited discussion on this topic. Some participants felt there wasn't potential for career advancement within their current organizations. Others had only recently started their jobs, and hadn't begun to consider career advancement opportunities.

More than half of the participants were over 45 years of age, and only three were under 35. One of the older participants indicated that career advancement is not a great concern for him because "my career, as such, is finished."

A few persons who indicated that their careers had not been progressing later attributed their lack of progression to the nature of the job rather than home-based work. One person indicated that her career advancement

opportunities had been "smashed," but as the result of down-sizing, illness and discrimination, not because she worked at home.

Maintaining Healthy Boundaries

Some participants—particularly those who worked flexible hours—described challenges maintaining the boundaries between their work and non-work lives. Overwork was a frequently-discussed theme.

> One of the problems with me—and I think this goes hand in hand with the type of disability I've got—is that it's not always easy for me to walk away from the work. When you're in an office, if you work 9:00 to 5:00 or 8:00 to 4:00, at quitting time, it's quitting time, and you can walk away.

A participant who does not have a separate telephone or e-mail address for work indicated that can make it.difficult for her to ignore work during evenings and weekends.

> I've got one e-mail and one phone line, and it's sometimes difficult to turn it [work] off. Like, if I go to check my e-mail on the weekend, I get work messages [laughing] and then I have to make a conscious decision: am I going to take two seconds to answer this, or am I just going to ignore it?

Several participants described strategies for enforcing the boundary between work and non-work. These strategies included asking co-workers to communicate with them via e-mail, which minimized disruptions while they were resting and allowed them to respond outside of 8 to 5 hours. Others used voice mail to allow them to respond to messages when they were most able to.

Participants reported that they sometimes worked—or felt they should be working—when they were ill. One participant reported that he felt obligated to prove that he could be productive working at home. As a result, he sometimes worked over 12 hours a day when he initially began working at home. This led to conflict with his wife and children.

> I wanted to prove to myself that I could do this, that I could work from home, that I could prove this to my employer... Now [employer] knows

> I can do the work...So I have been...spending time with my kids. But for a while there, we were having problems, my wife and I. She was always getting mad. "Why are you working so much, why...?" You'd get the questions from the kids. "Why Dad can't you spend time with me?" I just wanted to prove myself, and I have proved myself. I still work a lot, don't get me wrong. I still put a lot of work in.

Several participants with teenaged children reported that they had established guidelines for when it was and was not appropriate for their children to interrupt them while they were working.

> She's old enough now that if I say "You know what? I've got to spend the next three hours doing this," she would say "okay" and she would leave me alone...But I can see how it would be a difficulty for people with young children.

Several people indicated that they have had to enforce the boundary between their work and family or social lives when friends or relatives expect them to have flexibility to engage in non-work activities (e.g. babysit) during their normal working hours.

> ...I find that people don't recognize a home office unless you make it defined as a home office. People still call you in the afternoon and ask if you want to change your long distance service, and people will knock at the door trying to do something. I had... it wasn't just friends or family, I mean strangers. So you really have to make it an office at home. I put a sign up on my door "not available from three to six o'clock," number one, if I was sleeping and I didn't want the doorbell going off. Also, I wouldn't answer the telephone during that time, so I think we really have to define an office at home as a respected space and we can only do that, we can't expect other people to do that. It's up to us to do that.

Office Space

Most participants had dedicated home offices, usually in spare bedrooms. Others worked in spaces used for other purposes, including living rooms, dining rooms, kitchens and bedrooms. Participants with separate home offices tended to be more satisfied with their home work environments than persons who worked in rooms used by other family members and/or for

other purposes. One participant who works with files that contain confidential information described the inconvenience of not having a separate office.

> I basically use the dining room table…So if somebody comes over for a visit, well then I have to clear everything away, which is a bit of a hassle.

Some participants who had extensive experience working at home reported that new home-based workers often choose the smallest or least-desirable room in the house for their home office. They argued that this is not a good idea, e.g. basements have poor lighting, and are often cold and damp. Participants also warned against working and sleeping in the same bedroom. Participants also stressed the importance of windows and natural light. Others talked about the enjoyment of being able to hear sounds of nature while they work.

One participant described some of the tactics she used to make her spare bedroom seem like a true workspace:

> You have to, I think, have the space as appealing as possible. I've got my little signs up for my designations that I've got…So I've tried to set up like my office was so that it makes me feel like I'm working too. I've got my little name tags and stuff around that I would have for work, just to remind me that when I walk in here, this is work.

One participant who sometimes had meetings with co-workers in his home indicated that working at home requires him to keep his home neater and cleaner than when he did not work at home.

Technology and Telecommunications

All participants indicated that they used a telephone to do their work. Most also used computers, faxes, e-mail, and the Internet. Participants indicated that they use the following assistive technology:

- One-handed keyboard
- Large keyboard
- Voice recognition/activation software
- Screen reader

- Large monitor
- Scanner
- Palm Pilot
- Brailler

Some had separate telephone lines for their work telephones, faxes and/or Internet connections. Others used their residential phones, faxes and Internet connections. One participant indicated that he uses a cellular phone. Several participants reported that their employer's telephone system could forward calls to their homes. One participant even reported that he could dial into his employer's telephone system from home, and make long distance calls on the organization's account.

Most were relatively satisfied with the technology they had, but some indicated that their computers were inadequate. One who did not own a computer felt that he would have greater opportunities to do more work at home if he did have one.

Most participants indicated that their employers provided or reimbursed them for work-related supplies and long distance charges. However, most employers did not provide computers, printers or fax machines. Most participants paid for their own equipment from their own pockets. A few received equipment or financial assistance from external sources. Most of the minority of participants who indicated that their employers supplied at least some of their computer hardware or software worked for large organizations.

Most employers also did not provide separate telephone lines for work-related calls, faxes and Internet usage. Most participants used their residential phone for work. As a result, some indicated that they sometimes missed personal calls or faced challenges avoiding work-related communications outside of their usual work hours.

Technical Support

Only a few participants reported that their employers provided technical support for the equipment they use to work at home. These tended to be persons working for large organizations with Information Technology specialists. Most participants who used computers indicated that they had

to solve their own technical problems. A few indicated that they paid external service providers for technical assistance.

Confidentiality/Security

Participants who had names of clients, customers, or consumers at home reported that they kept this information secure from other family members and/or visitors. One had a paper shredder in her home for destroying confidential information. One reported that he was reluctant to have confidential information in his home.

Computer users who were connected to their employers' networks reported that they took precautions to prevent compromising the system integrity. A participant whose computer was provided by her employer said that a password prevents unauthorized persons from gaining access to her data. One participant said that she had to take greater precautions to protect confidential information when she was working at her employer's office than when she was working at home. Some participants reported that co-workers sometimes came to their homes for meetings or training. They indicated that they knew the persons who came to their homes, and did not feel they were risking their personal security.

Transmission/Transportation of Materials

Persons who work at home and at their employer's workplace either need to maintain two sets of files, or transport files and other work materials between the two locations. One participant who transports materials between her employer's workplace and her home said that she picks up and delivers materials herself several times a month when she has to go to the office for meetings. In between, a courier brings work to her home and picks up materials that need to be delivered to her employer.

> Hauling stuff back and forth is a bit of a problem, I've got to tell you. Especially paper, which is very, very heavy.

One participant who works with large documents indicated that his employer's e-mail system will not accept large electronic file attachments, which is a barrier to collaborating with co-workers via e-mail. As a result, he must save large files to portable media, then have a courier pick up and deliver them to his colleagues.

Unions

Two participants commented that unions had some resistance to home-based work. One indicated that her union has recently become less resistant.

> When telework was first mentioned as a possibility…the union was not in favour of it to begin with, but they have since come to find that this is actually—as far as accommodating people's personal lives—it's actually much more, a much better situation…It was an untried practice…I think they thought that the employer might take advantage of that and expect people to work longer hours that what the contract called for, and so forth…It now is, not only is it well-tried, it's right across Canada and people are scrambling to get it.

One participant who felt that his productivity was about 60 per cent of a person without a disability said that he should be able to do unpaid overtime to make up for the productivity shortfall. Unions, he said, insist on strict working hours and paid overtime.

Other Challenges

A participant who split her time between her home and her employer's office indicated that not being able to go to the office on short notice was a challenge.

> …one of the disadvantages that I have is I cannot leave my home on a spur of the moment…if there's an emergency with one of the consumers that I work with on a daily basis, and something comes up on the spur of the moment, especially at this time of year [winter].

A participant reported that he sometimes feels guilty about being able to work at home.

Question Four: Is there anything about your current work arrangement you would like to change?

Because of time constraints, this question was omitted at two of the focus group meetings. Despite the lengthy list of challenges participants

described earlier, this question did not result in extensive discussions when it was asked at the other meetings. The most commonly desired changes addressed conflict with others in the workplace. Some participants said they would like to have a different boss or pursue strategies to reduce conflict with their supervisors or co-workers. One commented that she has little ability to change these things.

> What would I like to change? Some of the co-workers in there. Sometimes when you go in there, you could cut the air with a knife, because I think they're feeling pressure too from the boss. What would I like to change? I guess, really, things that just—I don't know. I know I can't change anything, so I just—the things that I'd like to change, I can't, so I know it's not realistic to be thinking about it.

Some participants would like to be able to connect to their employers' computer networks from their homes. One wanted her manager to visit her home so that he/she would have a better appreciation of how the participant worked at home. Another who did most of her work alone expressed a desire for more opportunities for teamwork.

Question Five: Based on your successes, what do you think others can use as models for working at home?

Participants suggested the following as best practices that would help other persons with disabilities who are interested in working at home.[20]

Self-Discipline

Participants in most focus group meetings reported that a successful home-based worker requires considerable self-discipline. During the discussion of best practices, one group had an extended discussion of this issue.

> You have to be careful, because it probably is not an arrangement that can be successful for everyone. As sure as there are people in

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[20] This report's companion handbook *Best Practices in the Home-Based Employment of People with Disabilities* provides more detail about best practices for persons with disabilities who are interested in working at home. It also provides additional best practices for employers, service agencies, consumer organizations, unions and policy makers.

the office who sort of slack off, there's going to people who work from home that slack off.

Two of the participants in that group suggested that tools be developed to help persons with disabilities and employers assess individuals and jobs for their suitability for home-based work.

Setting up the Arrangement

Some participants said that persons who want to work at home should be prepared to address the concerns of an employer who may be hesitant about granting the request. Prospective home-based workers should also talk to others who already work at home.

Scheduling

Some participants worked structured schedules similar to colleagues that worked at their employers' offices. Other participants worked various times around the clock and/or seven days a week. Most participants' work schedules fell between these extremes. During its discussion of best practices, a group which included a person with very structured work schedule explored the relative merits of structure and flexibility. One participant suggested that the other participant's structured schedule was a best practice that could minimize some of the challenges that home-based workers may experience. However, in her next sentence, she added that she would be reluctant to give up the flexibility of her less-structured arrangement. Another participant in that meeting also indicated that she could not work an extremely structured schedule.

Communication

Participants indicated that it is important to stay connected with colleagues at the office.

> Be careful not to [cut yourself off], because I think getting cut off and isolated could sort of creep in, and all of a sudden you realize that no one knows you, you know nobody, and no one cares.

> …keep up as much contact as you can with the boss and the co-workers. Don't become too detached from them because they might

interpret it as you don't want to bother with them. I think, just to maintain office contact as much as possible, it's very important, even if you don't like the people or don't want to bother with them I think, like, you have to keep up appearances.

Some participants said that home-based workers should take advantage of the forwarding and voice mail features of telephone systems (e.g. to forward calls from office to home, use voice-mail to respond when able to). Others said employers should use conference calls to include home-based employees in meetings.

One participant said that it is useful to have a supportive co-worker at the office who collects and forwards information that is distributed internally. This is one way of identifying information that is currently not being distributed to the person at working at home. Once identified, a strategy can then be developed to improve communication

Some participants recommended that home-based workers should have formal agreements with their employers, and the terms of the agreement should be clearly communicated to other staff as a strategy to address possible resentment from co-workers who would like to work at home and/or feel that people who work at home create additional work for those in the office.

Maintaining Boundaries

Participants also reviewed ways of maintaining boundaries between the work and non-work parts of their lives.

> I like what [other participant] said, how she set her boundaries by saying to people "between one and three o'clock or whatever, don't call me because..." you know, whatever time she put on it. And I like the fact that she put a note on her door [indicating she is working and does not want to be disturbed]. I think that's really good. I never thought to do that, but that's an excellent thing to do.

Technology

To avoid compatibility problems, participants said that employers should upgrade home-based workers' computer hardware and software when

office upgrades occur. Participants who work at home and at an employers' workplace described the benefits of remote access software (e.g. PC Anywhere, Reach Out) that allows them to access information on their office computer from their home office computer.

Costs

Participants said that persons negotiating a home-based work arrangement should establish at the beginning what costs employer will cover.

Office Space

Participants felt that a separate room with a door is best. If that is not possible, some participants recommended using the room in the home that is least-used for other purposes. Others argued that working in the least desirable room is not conducive to productivity. Working in a basement is a poor choice because of cold, dampness and lack of natural light.

Network of Home-Based Workers

Some participants said that an organized network of home-based workers—with and without disabilities—would be a valuable resource for people who work at home, and people who are interested in working at home.

> I think that a network is probably a very productive idea that any new person who's going to be working at home, to have a network of people who would voluntarily speak with him about their experiences. It's a small community of people working at home. It's bigger as the days go on, but it's still a relatively small community in a work force. And I think that anytime I touched upon somebody who worked from home, I'd say "really? Well, what do you do? Do you have a computer? Do you...?" It's an interesting community to be in. So anytime you can share that information, I think it can only help. I think a network would be a good idea.

Miscellaneous Comments

Some participants reported that their employers sometimes contacted them for advice when other employees request home-based work arrangements.

Some participants were not aware that they may be entitled to income tax deductions for using their home as their workplace.

Some participants offered opinions about the relative advantages or disadvantages faced by persons who acquire disabilities while employed compared to those who already have disabilities when they are hired. Others discussed the additional challenges faced by persons who have hidden disabilities.

Some participants said that many employers require education about the capabilities of persons with disabilities. Some described past negative experiences attempting to work from home for disability organizations.

4.6 Diaries

Eleven (11) study participants recorded daily diaries for two weeks after attending a focus group meeting or interview.

Disability Management

During the period that participants were completing their diaries, many reported dealing with illness. The frequency of illness may have been influenced by a variety of factors, including the time of year (late December), the prevalence of colds and flu during this season, or the weather. Whatever the reason, participants who completed diaries spent a total of eight days off work due to illness.

Many participants also reported working even though they were ill. In many cases, the participants mentioned that working at home allowed them to carry out work related tasks in between resting or for short time periods during their illness.

> Due to [disability] I haven't felt well. Working at home allowed me to still put in a full day's work.
>
> I was able to rest my eyes for approximately 20 minutes today. I have been having sinus headaches the last couple of days. This I would not have been able to do at the office.

> I am still battling a case of influenza so staying home allowed me to work anyway where I doubt I would have gone into the office.

In total, the participants mentioned working in spite of illness on 21 days, as compared to the 8 taken off due to illness. Most felt that this was possible only because they worked from home.

In some cases, having a disability requires people to manage illness differently than for those without disabilities. Often when participants mentioned illness they also discussed the way illness interacted with their disability.

> Today was not a great day for me as I had the flu. This effects my disability, because when I am sick, my blood sugar becomes much harder to control. When my blood sugar gets too high, which it did, my vision becomes blurred. When I take a large shot of insulin, to bring down my blood sugar level, it gives me a major headache.

A few participants also mentioned their ability to get to medical appointments during the day that they would be unable to get to if they were confined to working in an office for strict working hours.

> Yes - I had a medical appointment at [the] hospital in the afternoon. Working from home allowed me to accommodate this appointment which was from 2:00 - 3:15 p.m.

Due to their disabilities, many of the participants reported that they need to rest regularly or deal with pain on a regular basis. Working at home allowed them to take time for rest and pain management in between working.

> My hand was very sore and I was able to take my medication and rest when I needed to.

> I didn't sleep very good all night therefore I had the luxury of resting from 3:00 - 5:00 p.m. due to the fact I was at home

> I cannot stand and walk for a long period. That's why I always give preference to working from home.

I was able to take breaks in-between to collect my thoughts and deal with my pain.

I was really struggling with pain management today, but I had a lot of work to do, so I did work while soaking in the tub, and sitting in bed with my feet propped up on pillows.

I put the conference call on speakerphone and I was able to lie down for most of the call. This was important because today was not a good day for my diabetes as a result of the flu that I had over the weekend.

Interestingly, some of the participants used their work itself as a sort of pain management, preferring to do work in order to take their minds off their pain. Some also did work when they couldn't sleep because of the pain, an option they had because their offices were in their homes:

As outlined above I had blurred vision and a major headache due to the flu and what being sick does to my blood sugar level. Working at home allowed me to work on the weekend, to catch up as a result of the time I took off.

Work Schedules

Participants reported remarkably different work schedules. Some worked relatively regular and predictable hours (e.g. Monday to Friday, 8:00 am to 4:30 pm). Others, however, worked very flexible hours, because of the nature of their jobs (e.g. part-time, casual) and/or as an accommodation for disability. One participant sometimes worked 6-8 hours over an extended period from the morning until late at night some days, with several extended breaks. On other days she would work 2-4 hours in the middle of the day.

Some participants worked very long hours, with the most extreme case being a person who often started work before 6:00 am and was still working late at night. On some days he took frequent coffee and meal breaks, and took time to rest in the middle of the day, but there were five days during the two-week diary period that he worked more than 12 hours.

One participant who worked part-time reported that she spent 30-45 minutes making work-related telephone calls on some of her days off.

Challenges and Disadvantages of Working at Home

Overall, most of the study participants reported that they were relatively satisfied with their home-based work arrangement. However, a number of challenges were identified in the diaries. Consistent with the findings of the literature review, key informant focus groups, and home-based worker focus groups, some participants mentioned feeling isolated working from home.

> It was a bit isolated—I could have used someone around for an occasional distracting chat just because I wasn't feeling well.

> I have no one to commiserate with. I was friendly with previous [employees], however there are three new [employees] I haven't met. The office has great difficulty retaining staff. I miss comparing notes with my co-workers.

In some cases, home-based workers found the transfer of information between home and work to be a challenge.

> One of the files that I needed for a client meeting was at the office. I usually have duplicate files for each client, one at home and one at the office. In this case there was only one file and it was at the office. I therefore had to drive to the office, before I went to see the client, as the file was too large to have it faxed or e-mailed to me.

In other cases, teleworkers reported that occasional face-to-face interaction is necessary or preferred.

> I needed to talk to one of my staff [today]…I could not get my staff member on the phone, because they were on their phone for an extended time period…If I had also been in the office, I could have walked in and interrupted them. Instead I had to fax, leave a voice message, and e-mail them asking that they call me ASAP.

> Part of the reason that I had 109 e-mails to answer today was that I was working from home. If all my staff and I worked from one office,

they could have directly spoken to me, versus sending an e-mail. There were certainly several cases today where face-to-face conversation would have been more efficient than sending e-mails back and forth.

Some participants reported that when they work at home, they experience challenges delegating tasks to subordinates and obtaining office or technical support.

If I had been at the office, I could have delegated some of my work to one of my staff so that my being sick did not effect customer service or work flows. As I was at home, and I did not get really sick until the afternoon, it was not viable to have my staff come to me to get the files and then return back to the office. My duplicate office files were not available to my staff, as my office desk is locked for confidentiality reasons.

I had to send another member of my household out to get supplies needed to finish a job; these might have been more readily accessible in a work place setting. Other than that, the benefits of working at home certainly outweighed those of working elsewhere today.

In some cases, work was interrupted by family or other responsibilities in their homes.

I tried to [get my child to sleep] because my wife was not at home. She was not sleeping. Finally, she fell asleep.

Some participants reported occasional difficulties using couriers for work-related deliveries.

UPS tried to deliver the [telecommunications equipment] but I wasn't home. I told them to send it to the office and I will pick it up Monday or Tuesday.

I had trouble today convincing a courier that I could sign for a [company] document that was not being delivered to a branch or business unit. He did not want to give me the document as he thought it must be addressed wrong. I did however convince him after

he checked with the sender of the document, which was my downtown office.

Some participants occasionally held meetings in their homes. This posed a challenge for some who felt that they had to keep their homes cleaner than they normally would.

> I might not have shoveled the walks if I had not had staff coming to see me today. We also had to clean up the house from our New Year's party prior to my staff coming for their performance reviews. Cleaning might have waited until next weekend if I did not use my home to work from.

One of the often-mentioned advantages of telework is the ability of home-based workers to save money on transportation, parking, clothing, and other things. However, when completing his diary, one participant reported spending more money because he worked from home:

> It has started to cost more personally to work from home. With the recent substantial increase in natural gas heating costs my December gas bill was over $100 higher than usual. Some of this additional cost would not have occurred if I did not work from home, as I could have kept the heat lower during the day. My employer does not fund any of my gas or electrical costs so this is a direct increase in non-recoverable expenses to me.

Benefits/Advantages of Working at Home

One of the many benefits of working from home cited by the participants related to transportation issues. Some discussed problems they have had with Handi-Transit, Winnipeg's para-transit system. One person who had several part-time jobs commented about the transportation difficulties he experienced with one job he traveled to using Handi-Transit.

> If I am working from home I would not face this problem [of Handi-Transit being late]. Because, if you miss your ride somehow you have to call a taxi and whatever you earn you have to give this to the taxi on that day.

Others simply referred to the hassles of driving to work, finding and paying for parking, issues which are relevant to teleworkers without disabilities as well.

> …I needed to come downtown today. I was reminded how much of a hassle it is to try and park downtown and that "coming and going" is much easier from my home.

As in the questionnaire, focus groups and interviews, many participants identified flexibility as a major reason they worked from home. Home-based work offered them the opportunity to plan their days around their needs, to work more or less than the 'normal' working hours, or to make up for time taken off.

> I only planned to work one hour today, but pushed it to two hours. Working from home affords me the luxury of determining how long I work and when I can stop if I don't feel up to it (within reason, of course).

> I took some afternoon time to go to a doctor's appointment which I made up by working late. My employer does allow for time off for doctors' appointments which do not have to be made up. I worked late due to deadlines that I was behind on due to my recent [out-of-town] trip. Normally I would not work late or extra time to make up for doctors appointments.

Working from home also allowed the participants to attend to non-work related activities, including medical appointments, family responsibilities and other non-work activities.

> I could also prepare food for my family at the same time as I was working.

> My wife is suffering from [chronic illness]. She got some fever and cold. I take care of herself and our baby girl because my wife has gone to the rehabilitation centre to see her doctor.

> I have a school assignment due next Monday and I needed the afternoon to get to the library and resource centre to do research.

Participants' diary entries often mentioned the difficulties that cold winter weather imposed on them because of their disability, and that working at home allowed them to minimize their exposure.

> Wonderful mild weather has set the arthritis in the joints in my legs acting up so I am very grateful I do not have to do a great deal of walking today.

> I needed to take that rest in the afternoon. The extreme cold is also a real deterrent to going outdoors because of inflamed joint difficulties, so I spent some time soaking in the tub and reading work-related articles at the same time.

> Today the weather was bad and it was very icy. Working at home allowed me the safety and comfort of not having to face it.

Anecdotal reports of the benefits of home-based work often include references to increased productivity. One participant offered their comments on the subject.

> I often wonder if I really am getting far more done at home than at the base office until I have a day like today when I accomplished a tremendous amount of output. I am quite sure that I would not have been able to do this much in-house.

Technology

Some participants used assistive technology in their work. These technologies made it possible for them to work more efficiently and without further exacerbating their disabilities:

> As I spent virtually the whole day answering e-mails this resulted in my spending a great amount of time staring at my computer screen. With my vision problem, it is a very good thing that my employer has provided me with a large screen monitor, or I would have ended up with a massive headache. Prior to my having this large monitor I used to get major headaches if I continuously looked at the screen for more than a few hours.

I spent most of the day working on a Power Point presentation. My large screen monitor certainly helped me complete this task in regards to my vision disability.

One of the reasons a few of the participants work at home was the availability of technology. In some cases, employees simply had better equipment at home than in their workplace. In other cases, the employer was not able to provide the technology required to accommodate the participant's disability.

As is the case every day I work at home, I utilized the computer with screen reader and scanner (which are necessary because of my blindness) and the phone and fax to communicate with my office. Because of my disability, I require a screen reader to tell me what is on the screen and a scanner to read print, and both of these needs are accommodated through working at home. [My workplace] does not currently have a screen reader and appropriate scanner software.

However, at times, working from home led to challenges surrounding the use of their technology:

Due to a telephone line problem, my office phone, fax, internet access, and Palm Pilot all stopped working for three hours this morning. Thank god for cell phones!!!!!.

I could not restart the LAN myself, I had to get [head office] to do it!

Some older homes, such as mine, have a limit on the number of incoming telephone lines. In my case, my home has a limit of two lines, including my personal line. The other line and my cell phone are paid for by my employer. This morning my daughter was using the personal line, I was faxing a document on the business line, and explaining the document to the fax recipient on my cell phone. This shut down my internet, for a few minutes, as there were not enough lines to make everything work. As I forgot to save my data prior to the internet shutdown I lost everything when the fax took over the business line.

…the headset doesn't seem to be compatible with my phone and I had to figure it out. It took a long time and still doesn't fit. Very

frustrating as I had no one to help me and a manual was not provided. If I was working at the office, a headset would be there and I wouldn't have this problem.

Effect of the Research

Each participant was asked to discuss what effect, if any, recording a daily diary had affected how they thought of their jobs. Although a few felt that keeping a diary did not change the way they felt about their jobs, most felt that it had some impact. Many reflected on the way they schedule their work time, and became more aware of their own work schedules.

> I am more conscious of the time I put into a job (as opposed to working until the job is done.); I'm more aware of the times in the day that seem to be most optimum to complete work related tasks—I hadn't really noted these patterns before.

> I seem to plan my day better now. Have more free time to rest foot. Gives me a schedule, lets me see how I spend my time, how I can manage my time better

> I found it instructive to keep track of work hours, something I have never done before. When I am well I average an eight-hour workday. Therefore, the average of 4.25 work hours for the last ten days probably indicates that my [condition] is flaring.

> I always thought everyday was the same, but it looks like there is slight variation in my routine.

In other cases, keeping a diary validated the reasons that these individuals chose to work from home.

> I am grateful that [employer] has made telework an option for staff. I am very tired after a day spent answering between 35 and 55 calls...I appreciate not have to drive home. Incidentally, taking these calls while trying to keep up with the normal workload. I find it hard to explain how stressful this can be. Working at home means less interaction with colleagues but that can also be a good thing when it is so busy.

> [Keeping a diary] has allowed me to consider the pros and cons of working from home that I really never really thought about before. It has also made me think about all the things that my employer does provide so that I can work from home.

> I believe that because of my type of disability with good and bad days, and good and bad seasons, working at home is probably the only practical option I have. The flexibility of home-based work is the main benefit for me, which I indicated throughout the diary.

> This survey made it a lot easier to explain to my new boss why I wanted to continue to work from home. All of the information that I provided for this survey are things that I would normally not think about. By doing the survey I was much better prepared to explain to my new boss why I wanted to continue working from home. I probably would have never thought to ask my new boss to come visit my home office if I had not been part of this survey.

> Working at home for [employer] is very gratifying. I can work at my speed with little or no interruptions. And [employer] has provided the best in equipment and technology as well as having colleagues who are in the office who are willing to assist in whatever way they can— printing from e-mails such things as urgent letters, etc.

Keeping a diary gave many participants an opportunity for self-reflection, for thinking about their jobs, and for considering their disability in this context:

> Keeping a diary means checking your activities/problems faced by you and try your level best to remove those problems. To maintain a diary for my two weeks really helped me a lot. In this way, I maintained the record, what time I start my work, when I finish my work, what problems I faced. Really, I appreciate this step that you give us a chance to check out problems faced by persons with disabilities. This diary really helps me to tell something about myself, my problems, my disability, my work, my activities. I am really happy to have maintained it.

> It made me realize how much I do work to get away from the pain.

> I did find it interesting to see how the inclement weather affects me as a person with a disability and my job. I also think that on days that I don't get a chance to come home in between appointments, I feel more stressed or tired at the end of the day. Thanks for letting me take part in this project and I hope that I gave you some valuable information on working at home. Have a great holiday!

One person who took part in the research expressed gratitude that the Canadian Centre on Disability Studies was conducting a study of home-based work by persons with disabilities.

> The step you are going forward is that you are trying your level best to recognize the feelings/problems of physically handicapped/person with disabilities. I personally and with my family appreciate this step.

On several occasions during the completion of his diary, he requested that CCDS try to arrange a program to offer home-based work to persons with disabilities.

> Please after this survey, try to contact those association/companies/factories others who can give work from home to persons with disabilities.

4.7 Supervisor Focus Group

Seven of the home-based workers who participated in focus groups consented to allow the researchers to contact the focus group participants' supervisors. Five of their supervisors subsequently attended a focus group meeting in January 2001.

Three of the participants represented governments, one a private sector business, and one a not-for-profit organization. Most of them supervised home-based workers with disabilities who had been office-based employees of their organizations for some time prior to making the move to working at home. Three supervised multiple home-based workers.

Question One: How did you, your organization, and your employee initially work out the arrangement to work at home?

Most of the employees with disabilities requested the opportunity to work at home as accommodations for increasing disability. Most of these arrangements were negotiated as individual accommodations, but some were arranged within organizations' broader telework programs that allow employees to work at home for a variety of reasons in addition to accommodating disability.

The supervisors reported that most of their employees who participated in the study do most of their work at home, but go to their employers' workplaces for staff meetings and other meetings. One supervisor indicated that the employee's job description changed because he now works at home. Instead of doing a variety of short-term and long-term projects, the employee now works exclusively on long-term projects, primarily to reduce the need to courier work to and from his home.

One supervisor indicated that the organization's management was apprehensive about having an employee working at home, primarily because of a previous unsuccessful home-based work arrangement. The organization wanted the employee to sign a formal contract, but the employee and supervisor negotiated a less formal agreement describing each party's expectations. Most of the other supervisors indicated that they also have informal arrangements rather than formal contracts, primarily because the employees had demonstrated positive work habits and performance before beginning to work at home.

Most of the employers provided the computers and other equipment used by their home-based workers. The others indicated that their employees utilize their own computers, which they owned prior to beginning to work at home. The person representing a not-for-profit organization indicated that the organization would not have been able to provide a computer to the employee that worked at home using her own computer.

In a few instances, supervisors' descriptions of the negotiation of the arrangements did not fully correspond with the descriptions their employees provided.

Question Two: Compared to supervising employees who work on-site, have you encountered any unique challenges supervising an employee who works at home?

Communication

Most of the supervisors indicated that it is important to develop the discipline to ensure that home-based workers are included in formal and informal meetings and discussions. Some indicated that it is easy to "forget about" home-based employees. Some include home-based workers in meetings via telephone. One who had not considered this option indicated that he felt it was a good idea. Some supervisors indicated that decisions in their organizations/departments tend to be made in face-to-face discussions, and telephone and e-mail are less satisfactory forms of communication.

Some supervisors indicated that maintaining adequate communication is a joint responsibility of the supervisor and the home-based worker. One reported that the home-based employee she supervises sometimes does not alert the office when he is temporarily unavailable because of disability.

Isolation

Several participants indicated that they felt their home-based employees could become isolated. Some who supervise multiple home-based workers reported that they attempt to reduce this risk by encouraging home-based workers to form a "buddy system" or meet occasionally.

Performance Management

Some of the supervisors indicated that managing persons who work at home wasn't any more difficult than managing employees in the office. Others reported that they had some initial difficulties or had to make adjustments to evaluate the performance of employees who work at home.

> I can evaluate the staff who are in the office very easily because I see what they're doing on a very regular basis. I see the assignments come in and go out and so on. It's a lot easier to evaluate them.

One supervisor indicated that he initially monitored his home-based employee's work via the organization's computer network. He said that he felt uncomfortable doing this, and now uses other means of evaluating performance.

Co-workers

Some of the supervisors reported that responding to home-based workers' information requests sometimes creates conflicts with the office-based workers who deal with the requests.

> We did run into that to some extent, we still do. There are some things people just can't do from home, so they have to ask someone in the office to do it for them. Sometimes that's a little bit of a problem.

Couriers

Some of the supervisors indicated that the cost of couriering materials to and from their employees' homes was an issue.

Professional Development

One supervisor indicated that his employee's disability sometimes prevents him from participating in scheduled training, or can only attend part of multi-day training sessions. The supervisor indicated that he is considering a "train-the-trainer" arrangement where another staff person who attends the training is assigned to subsequently deliver the training to the home-based employee in a flexible manner.

Some supervisors indicated concerns that home-based workers are not exposed to informal learning that occurs in the workplace. They reported that they are considering having regular meetings or occasional retreats specifically to discuss recent informal learning.

Accommodations

The supervisors indicated that flexibility and creativity are important to solving accommodation issues. One described a situation where several technical solutions were attempted before finding one that was satisfactory.

Some supervisors who work for large organizations indicated that their organizations have resources dedicated to the funding and/or provision of accommodations for employees with disabilities.

Security

Supervisors whose home-based employees are connected to the organizations' networks indicated that network security was an issue. One indicated that this makes Information Technology staff nervous about teleworkers. Another indicated that part of the negotiated telework agreement stipulates how and when the employee will access the network.

Technical Support

One supervisor indicated that her organization is replacing teleworkers' desktop computers with laptop computers to facilitate sending the computers for servicing, rather than having techical support staff travel to the employees' homes.

Question Three: Based on what you've learned from supervising somebody who has a disability who works at home, what do you think are best practices in home-based employment?

Most of the discussion about best practices indicated that successful home-based work arrangements require "motivated, responsible" employees and flexible supervisors who are committed to "making it work." The participants emphasized the importance of finding ways of including home-based workers in informal meetings, and communicating informal learning to home-based workers.

5. DISCUSSION

Some of the experiences and opinions reported by the 21 home-based workers in the previous section provide new information about people with disabilities who work at home. Other findings of our study support the findings of previous research and the key informant focus groups with supervisors, service agencies, consumer organizations, employers and unions. This section highlights and expands on key findings from the study.[21]

5.1 Education

We were startled by the educational achievements of our study participants. Sixty-five percent of them had university degrees. Most others were college graduates or had attended some university. Only one participant—a high school graduate—did not have any post-secondary education. This finding contrasts sharply with Statistics Canada's 1991 Health and Activity Limitation Survey which found that only six percent of Canadians with disabilities of working age were university graduates and 65 percent did not have any post-secondary education (Statistics Canada 1993).

This finding highlights the importance of eliminating barriers to post-secondary education for persons with disabilities. Until those barriers are eliminated, the educational requirements of many jobs suited to home-based work will remain a significant barrier to persons with disabilities who do not have post-secondary education (Price Waterhouse 1994).

5.2 Reasons for Working at Home

Some of the home-based workers in our study reported that they worked at home because previous employers had not accommodated them satisfactorily when they disclosed their disabilities and/or requested accommodation. They told us that they utilize home-based work as a strategy to avoid further humiliation and/or disappointment. We found no

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[21] Where a finding of this study corresponds to findings of previous research, the previous studies are referenced within the text.

mention of this reason for working at home in our review of previous research.

Some of the home-based workers in our study told us they worked at home to avoid extreme weather conditions that exacerbated pain related to their disabilities or created risks of falling on slippery winter surfaces. Our review of previous research found only one previous study from Ireland that identified weather as a reason some persons with disabilities work at home (Murray and Kenny 1990).

Our review of previous research found that most people *without disabilities* who choose to do paid employment at home do so for reasons such as: to have greater flexibility to coordinate family/personal life (Ashton and Ashton 1999; McCloskey and Igbaria 1998; Heck, Rowe and Owen 1995), to avoid long commutes (Aschaiek 2000; Johnson 1997) or because their work requires intense concentration and freedom from interruptions (Blake 1999; Treasury Board Secretariat 1996).

Some of the home-based workers with disabilities who participated in this study listed these factors as desirable *benefits* or *advantages* of working at home. When they were asked, however, to describe the specific *reasons* they worked at home, most identified reasons related to disability (Kruse and Hyland 1998). In addition to the reasons listed above, some participants in our study indicated that they worked at home for the flexibility to work when they were most productive and rest when necessary, or to attend medical appointments (Hesse 1995). Others told us that their employers' workplaces were physically inaccessible or lacked assistive technology the workers required (Lilenthal, Goll and Zap 1998; Murray and Kenny 1990). Others explained how working at home provided them with better access to attendant care or pain management strategies that were unavailable or difficult to arrange at their employers' workplaces (Hesse 1995).

Many of the previous studies of persons with disabilities who work at home identified reduced transportation difficulties as an advantage of working at home (TECSO 1998; Lilenthal, Goll and Zapp 1998; Price Waterhouse 1994; Ashok, Hall and Huws 1986). Some of the home-based workers with disabilities in our study noted that working at home reduced their need to travel, either by car or by Winnipeg's Handi-Transit. However, very few of

them identified transportation challenges as the main *reason* they worked at home.

5.3 Challenges of Working at Home

Relatively few of the study participants reported that they experienced feelings of isolation. In fact, many told us that they enjoyed the solitude of working at home. The small number who described feeling isolated tended to be persons who worked at home most or all of the time, although other persons who worked at home most or all of the time were also amongst those who reported liking the solitude of working at home. Many previous studies have reported that some people with disabilities who work at home can experience feelings of isolation (Boucher, Oullet and Fourier 1999; Price Waterhouse 1994; Murray and Kenny 1990; Ashok, Hall and Huws 1984). Participants in all three key informant focus groups also described isolation as one of the challenges and risks of working at home. The findings of this study suggest that isolation may be a problem experienced by only a minority of people with disabilities who work at home.

Many of the study participants reported that they experienced personal stress and conflict with family members related to difficulties establishing and maintaining the boundaries between their work and family/personal lives. Some described situations where friends or family members disturbed them while they were working, but the majority of discussion about this topic focused on participants' difficulties keeping their work from intruding on their family or personal time. Some told us they had trouble "walking away" from their work at the end of their workday. Others reported that they sometimes worked—or felt they should be working—when they were ill. One participant told us that he often worked more than 12 hours a day, partly because he wanted to prove to his employer that he could be productive working at home. These findings correspond to previous research on people with and without disabilities who work at home (Brelis 1999; Haddon 1998; Blake 1998; Costello 1998; Hesse 1995; Heck, Rowe and Owen 1995). In particular, these findings remind us of a previous study's warning that "unclear boundaries in conjunction with anxiety over personal acceptance could set [home-based employees with disabilities] up for exploitation and burnout" (Hesse 1995, 422).

None of the home-based workers in our study reported that working at home had affected their career advancement opportunities. This contrasts

with some previous studies that found that some people who work at home feel their career advancement opportunities have been harmed because they work at home (Martin 2000; Blake 1999; Hartman, Stone and Arora 1992). Our finding corresponds with a recent survey (n=466) that found that most Canadians who worked at home felt that working at home had a neutral *or positive* impact on their career opportunities (Ekos Research Associates 2001).

The home-based workers in our study did not raise occupation health and safety as an issue during discussions of the challenges of working at home. This contrasts with the findings of the key informant focus groups: employers and union staff both identified occupational health and safety issues as challenges for people who work at home and their employers. A federal government study also found that some teleworkers and their union representatives expressed concerns about health and safety issues, primarily regarding responsibility for ensuring that teleworkers' home offices were ergonomically sound (Treasury Board Secretariat 1996). Some of our study participants may not have identified health and safety as an issue because they have ergonomically sound home offices. Some participants, however, indicated that they worked at kitchen tables, sitting on their sofas, etc. They may not be aware of the health risks of these kinds of working conditions.

Home-based workers with disabilities in our study reported challenges communicating with co-workers, supervisors and subordinates. This finding corresponds to findings of the key informant focus groups and previous research (Lilenthal, Goll and Zap 1998; Hartman, Stoner and Arora 1992; Ramsower 1985).

Most of the participants in our study paid for their own computers and other equipment and used their residential telephone lines for work. This finding corresponds with previous research that found that most employers do not supply or pay for the equipment and services their teleworkers utilize to do their work (International Telecommuting Association and Council 2000; American Management Association 1999).

5.4 Differences Within the Group

The small sample size (21) limits our ability to perform detailed analyses of differences within the group of home-based workers with disabilities who

participated in this study. Nevertheless, there were some notable differences within the group that may explain some of the diversity of experiences described in the findings of the study.

At one extreme were long-term professional or managerial employees of large private and public sector organizations. Most had disabilities when they joined their organizations, but worked in traditional workplaces for many years before beginning to work at home, usually as an accommodation for increasing disability. Most of them worked for organizations with broad telework or flexible work programs, and arranged to work at home within the policies and supports of those programs. Most of their employers also had internal programs or funds to assist in the accommodation of employees with disabilities. All of them had home offices in separate rooms of their houses, and their employers provided the computers, workstations and other equipment and telecommunications services (telephone, fax, Internet services) they required to work at home.

At the other extreme were people who worked at home in part-time, casual or term positions, mostly using the telephone for interviewing, translation or telemarketing. Their employers provided little or none of the equipment they used to work at home. Most did not have separate home offices, so they did their work in their living rooms, kitchens, etc. Some were not paid salaries or benefits, but were paid only for calls they completed.

Many of the participants who didn't belong to either of these two extremes were persons who worked for non-profit organizations, typically organizations that represent or provide services to persons with disabilities. Many had separate offices in their homes, but most of them used their own computers, phones, and other equipment when they worked at home. Many reported that they worked on short-term contracts and experienced periods of unemployment between jobs.

6. CONCLUSION

Although many of the study participants reported that they experienced challenges working at home, most liked working at home. Some who described significant challenges indicated that they would prefer to continue working at home even if their employers were willing to accommodate them in the workplace.

Working at home is clearly an attractive option for some persons with disabilities, but it is not a broad solution to the employment barriers encountered by persons with disabilities in Canada or anywhere else. For persons with disabilities who want or need to work at home, home-based work can be an effective way of accommodating disability. It is not, however, a substitute for accommodations in traditional workplaces. Many people with disabilities—just like many people without disabilities—are not interested in working at home. They want and are entitled to access to jobs in traditional workplaces.

Persons with disabilities who want to work at home for reasons unrelated to their disabilities should have the same access to those opportunities as persons without disabilities. Additionally, persons with disabilities should also have additional access to home-based telework if they see working at home as an attractive way of accommodating the disabilities they experience.

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APPENDIX 1

Canadian Centre on Disability Studies

A Study of
Technologically-Supported Home-Based Employment for
Workers with Disabilities

Key Informant Focus Group #1
Disability Consumer Groups and Service Agencies

Tuesday, June 13, 2000, 9:30-11:30 am
First Floor Lounge, 11 Evergreen Place, Winnipeg, MB

<u>Agenda</u>

1. Welcome

2. Introductions

3. Purpose of Meeting

4. Round Table Discussion

   Q1. What previous experience have you or your organization had in examining or implementing home-based employment as a work option for persons with disabilities?

   Q2. What opportunities or advantages does home-based employment offer to persons with disabilities?

   Q3. What disadvantages, challenges, or risks does home-based employment create for persons with disabilities?

   Q4. Overall, is home-based employment a suitable work option for many persons with disabilities?

5. Adjournment

APPENDIX 2

Canadian Centre on Disability Studies

A Study of
Technologically-Supported Home-Based Employment for
Workers with Disabilities

Key Informant Focus Group #2
Employers

Friday, June 16, 2000, 9:30-11:30 am
First Floor Lounge, 11 Evergreen Place, Winnipeg, MB

<u>Agenda</u>

1. Welcome

2. Introductions

3. Purpose of Meeting

4. Round Table Discussion

   Q1. What previous experience have you or your company/organization had in examining or implementing home-based work arrangements?

   Q2. What opportunities or advantages does home-based employment offer to employers?

   Q3. What disadvantages, challenges, or risks does home-based employment create for employers?

   Q4a. Have you or your organization had any experience examining or implementing home-based employment specifically for persons with disabilities?

   Q4b. Are their any additional issues employers should examine when considering or implementing home-based employment for persons with disabilities?

5. Adjournment

APPENDIX 3

Canadian Centre on Disability Studies

A Study of
Technologically-Supported Home-Based Employment for
Workers with Disabilities

Key Informant Focus Group #3
Unions

Tuesday, October 10, 2000, 2:30 to 4:30 pm
Board Room, Union Centre, 275 Broadway

Agenda

1. Welcome

2. Introductions

3. Purpose of Meeting

4. Round Table Discussion

   Q1. What previous experience have you or your union had in examining or participating in the implementation of home-based employment?

   Q2. What opportunities or advantages does home-based employment offer to employers?

   Q3. What disadvantages, challenges, or risks does home-based employment create for workers?

   Q4a. Have you or your union had any experience examining or implementing home-based employment specifically for workers with disabilities?

   Q4b. Does home-based employment create unique opportunities and/or risks for workers with disabilities?

5. Adjournment

APPENDIX 4

Identifying Best Practices in Technology-Based Employment at Home for Returning or Retaining Workers with Disabilities

QUESTIONNAIRE

PART A: Demographic Information

Please place an "X" beside the most appropriate answers.

1. Are you ___Female or ___Male?

2. What is your age?
   ____ under 25
   ____ 25-34
   ____ 35-44
   ____ 45-54
   ____ 55-64
   ____ 65 or older

3. What is the highest level of education you have completed?
   ____ less than high school
   ____ high school
   ____ some community college
   ____ community college certificate
   ____ some university
   ____ completed university degree
   ____ other (please specify)

4. Marital Status
   ____ single
   ____ married/living common law
   ____ widowed
   ____ divorced/separated

5. If you have children living in your home, what are their ages?

   _____

6. What is the nature of your disability? (check as many as apply)
   ____ physical/mobility
   ____ cognitive
   ____ learning
   ____ environmental
   ____ speech

____ developmental
____ mental health
____ visual
____ hearing
____ medical (diabetes, M.S., etc)
____ other _____

7. Was your disability caused by
____ workplace injury
____ illness
____ other _____

8. Are you an Aboriginal Canadian?
____ yes
____ no

9. Are you a member of a visible minority group?
____ yes
____ no

10. Is English your first language?
____ yes
____ no

11. Where do you live?
____ Winnipeg
____ Brandon
____ Rural Manitoba

PART B: Employment Information

12. What type of work do you do? _____

13. Before taxes, what is your current annual income?
____ less than $10,000
____ $10,000-19,999
____ $20,000-29,999
____ $30,000-39,999
____ $40,000-49,999
____ more than $50,000

14. How many employees work at your company in Manitoba?
____ 2-9
____ 10-19
____ 20-29
____ 30-39

____ 40-49
____ 50-59
____ 100-500
____ more than 500

15. How long have you worked for your current employer?
____ 0-6 months
____ 7-12 months
____ 1-2 years
____ 3-5 years
____ 6-10 years
____ 11-15 years
____ 16-20 years
____ more than 20 years

16. During an average week, how many days do you work?
____ less than 2
____ 2-4
____ 5 or more

17. From which of the following sources do you receive income? (check as many as apply)
all from employment
____ some from employment
____ income assistance (government)
____ insurance plan

PART C: Home-Based Work Arrangement

18. On average, how many days per month do you work at home?
____ 1-5
____ 6-10
____ 11-15
____ 15-20
____ always

19. How many days did you work at home last week? _____

20. How many years have you done home-based work? _____

21. Since you have worked for you current employer, have you always worked from home?
____ yes
____ no

22. How long have you worked from home for this employer?
____ 0-6 months
____ 7-12 months

____ 1-2 years
____ 3-5 years
____ 6-10 years
____ 11-15 years
____ 16-20 years
____ more than 20 years

23. Who suggested your home-work arrangement?
____ yourself
____ employer
____ other (please specify)____·_____

24. What are the main reasons for your working from home (check up to 3)?
____ transportation
____ accessibility
____ flexible work hours
____ child care
____ employer shortage of office space
____ employer does not have the technology I require
____ other (specify) _____

25. Are any of these reasons related to your disability?
____ yes
____ no
If yes, please explain _____

26. Do you work the same hours as employees who work at your employer's work site?
____ yes
____ no

27. Do other employees from your organization work from home?
____ yes
____ no
____ don't know

28. Is your home-based arrangement an exception?
____ yes
____ no
____ don't know

PART D: Technology

29. Which of the following do you use in your daily work? (check as many as apply)
____ phone
____ fax
____ computers

_____ Internet
_____ e-mail
_____ other _____

30. What arrangement do you have with your employer regarding the purchase of such equipment?
_____ employer supplies
_____ employer splits cost
_____ you purchase
_____ other _____

31. Does your employer provide you with access to technological support for your equipment (i.e. computer support, etc.)?
_____ yes
_____ no

32. Who pays for the following:

Phone line rental?
_____ yourself
_____ employer
_____ shared

Long Distance Charges?
_____ yourself
_____ employer
_____ shared

Internet connection?
_____ yourself
_____ employer
_____ shared

Fax line?
_____ yourself
_____ employer
_____ shared

Paper, supplies, stamps, etc.?
_____ yourself
_____ employer
_____ shared

33. Please rate the following in order of importance for use in communicating:
_____ E-mail
_____ Fax

___ Phone
___ Posted mail

APPENDIX 5

Canadian Centre on Disability Studies

A Study of
Technologically-Supported Home-Based Employment for
Workers with Disabilities

Focus Group
Home-Based Workers with Disabilities

<u>Agenda</u>

1. Welcome

2. Purpose of Meeting

3. Introductions

4. Round Table Discussion

    Q1. What is the main reason that you work at home?

    Q2. What are the greatest benefits or advantages of working at home?

    Q3. Have you experienced any challenges or disadvantages working at home?

    Q4. Is there anything about your current work arrangement you would like to change?

    Q5. Based on your successes, what do you think others can use as models for working at home?

5. Adjournment

APPENDIX 6

<u>Diary Questions</u>

Welcome to day 1 of your diary on home-based work! Please take a few minutes to reflect on your day's work activity. You can respond to the following questions by replying to this message and typing your response in the body of the text.

1. Please describe any events that you feel were significant during your work day.

2. What time did you start and finish work today? (include any interruptions to your day)

3. In what ways did you interact with your office/employer's place of work today? (include interactions with supervisor and co-workers, use of technology, etc.)

4. Did working at home allow you to accommodate your needs in any particular way today? (include issues related to your disability, care-giving responsibilities, etc.)

5. Did working at home present any challenges or barriers to you today?

6. Please add any other comments that you feel may be important to this research study.

[At the end of each week, participants were asked an additional question.]

7. How has keeping a diary of your daily activities affected the way you think of your job?

APPENDIX 7

Canadian Centre on Disability Studies

A Study of
Technologically-Supported Home-Based Employment for
Workers with Disabilities

January 9, 2001
Focus Group
Supervisors of Home-Based Workers with Disabilities

Agenda

A. Purpose of Meeting

B. Participant Introductions

C. Roundtable Discussion

Q1. How did you, your organization, and your employee initially work out the arrangement to work at home?

Q2. Compared to supervising employees who work on site, have you encountered any unique challenges supervising an employee who works at home?

Q3. Based on what you've learned from supervising somebody who has a disability who works at home, what do you think are best practices in home-based employment? (What can other organizations and supervisors do to allow more people with disabilities to work at home as successfully as the people you supervise?)