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Telecommuting: A Trend Towards the Hoffice*

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* Hoffice is a term used by futurist Faith Popcorn to refer to an office in a home.

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Executive Summary

Although telecommuting — defined here as working at home using electronic communications technology linked to the employer's central office — has been under way in Canadian organizations to varying degrees for some time, it is only in the last few years that it has been formally implemented in some Canadian companies. There is every indication that telecommuting will become much more prevalent in North America during the next ten years. Although there are many advantages for both employer and employee, there are also many potential pitfalls. Not all jobs and not all employees are suitable. Based on a study of telecommuting at Bell Canada and IBM Canada, this paper identifies the types of jobs and employees which are suitable and the advantages and disadvantages for the employer and employee. The author identifies important strategies which will help a telecommuting program to succeed.

- Information-oriented jobs requiring relatively little face-to-face interaction are well suited to telecommuting, as are jobs involving high levels of concentration, specific deadlines, and results which are easy to measure.
- The successful telecommuter will be a highly motivated, self-disciplined, results-oriented employee with good communication and planning skills. Social interaction will not be an important part of this employee's job satisfaction, or telecommuting may lead to a decline in morale.
- If properly managed, telecommuting leads to increased productivity. It involves the delegation of work and the empowerment of employees, who are given more control over their work schedule: this leads to improved morale. Employees experience less stress in juggling work and family responsibilities.
- On the other hand, employees are deprived of direct personal interactions which provide on-the-job training and first-hand knowledge of the organizational environment. A physically dispersed telecommuting work force may hamper team building and group cohesiveness.
- Managerial resistance is likely to be a significant difficulty. Telecommuting challenges the traditional notion of managing by watching. Managers can no longer judge performance by behaviour; they must set specific measurable goals and evaluate by results.
- If a union is involved, it will probably view telecommuting as detrimental to working conditions and remuneration, and as a threat to its own power and organizing abilities, since telecommuting produces a decentralized, disaggregated work force.
- The chances for a successful telecommuting program are improved if employee participation is voluntary; if there is a formal training program for managers and employees; if managers and telecommuters have trust in their relationship; and if they make a concerted effort to keep each other well informed and have periodic face-to-face meetings.

Introduction

There have been a multitude of changes in the workplace in recent years and many of these changes have been encouraged by developments in technology. Advances in this area have allowed assembly lines to become more efficient. But the influence of technology has also permeated the walls of the offices of Canadian enterprises to affect the organization and structuring of the workplace itself. One example of this is the growth of telecommuting. This is a recent trend with many implications for Canadian employees and employers who work with knowledge and information.

There are several definitions of telecommuting in the literature. The International Labour Office identified at least three elements common to most: organization, location, and technology. Based on this, telecommuting is defined in this study as:

work performed in a location away from the central facilities wherein technology enables the separation from and communication with coworkers at the main site. (DiMartino and Wirth 1990, 4)

Very generally, telecommuting is the substitution of communications technology for physical travel to the workplace (Cukier and Truvert 1988; Katz 1987; Olson and Primps 1984; Peles 1986). Telecommuting can also be described as work done at a location other than the central office wherein the worker is electronically connected to that office (Cross and Raizman 1986; Mattis 1990). This definition does not include isolated piece-rate work (Ontario Women's Directorate 1991) such as that done by workers sewing at home and receiving payment by the piece. In this discussion, only homework done with telecommunications technology qualifies as telecommuting.

In addition to being carried out at home, the work may be done in a satellite centre or a neighbourhood centre. Satellite centres are offices owned by the business enterprise and close to the telecommuter's home. Neighbourhood centres are similar but they are shared by users from different organizations (Cukier and Truvert 1988; DiMartino and Wirth 1990; Mattis 1990; O'Hara 1988). Telecommuting can also include work carried out after full-time office hours, while travelling, or by those who are self-employed (DiMartino and Wirth 1990; Olson and Primps 1984). Although these are all examples of telecommuting, this study will focus only on telecommuting from the home workplace. The terms 'telecommuting', 'telework', and 'flexiplace' will be used interchangeably to refer to a full- or part-time flexible work arrangement wherein an employee works at home using electronic communications technology linked to the employer and coworkers.

The Extent of Telecommuting

There have been several attempts at quantifying the growth of telecommuting as a flexible work arrangement. In 1991, Link Resources studied the telecommuting population in the United States and identified 5.51 million home-based, part- or full-time telecommuters covering 5.1 million American households.' That same study also revealed that the average annual growth rate of telework is 38 percent. In addition, men are somewhat more likely than women to telecommute: approximately 53 percent of telecommuters are male and 46 percent are female.' Most teleworkers are business professionals (Miller 1991, 4; Violino and Stahl, 1993, 23).³

There has been some research on the extent of telework in Canada. The Conference Board of Canada surveyed 132 large Canadian organizations and determined that approximately 10.5 percent offered work-at-home arrangements (Paris 1989, 14). This study also noted that work-at-home arrangements were equally common in both manufacturing and nonmanufacturing industries; however, they were more common in the private than in the public sector. Telecommuting also appeared to be more common in larger organizations with a greater number of employees and with significantly higher revenues and asset values (Paris 1989). Orser and Foster (1992, 70) have revealed that 14 percent of homemaker households are telecommuters, which translates into 3 percent of Canadian households. In addition, the International Labour Office surveyed 250 large Canadian organizations and found that 20.8 percent had implemented telework, while 42 percent were preparing for or considering implementation (DiMartino and Wirth 1990, 10).

Although these findings appear to contradict those of Duxbury, Higgins, and Irving (1992, 24), who reported in two separate studies that telecommuting is not widely utilized, and although telecommuting may still be in its infancy in Canada, many forces are propelling its growth (DiMartino and Wirth 1990).

Telecommuting can increase productivity.

Advantages of Telecommuting

One of the main advantages of telework for both employer and employee is the increase in productivity that can result (Bonanno 1993; Duxbury, Higgins, and Irving 1987; Mattis 1990). Although there is an initial adjustment period when the productivity of the employee is likely to decrease, the overall gains in productivity can be substantial. Some organizations have reported improvements of up to 60 percent, but 20 percent is typical (Cote-O'Hara 1992; DiMartino and Wirth 1990; Filipczak 1992; Goodrich

1990; Letourneau 1990; Nolan 1990), and 'all the research shows that telecommuting improves productivity' (Duxbury, quoted in Misutka 1992, 74).

The increase in productivity is fuelled by several factors. There are fewer interruptions from the office environment, and this allows the concentration required for intensive projects (Cukier and Truvert 1988; Nolan 1990; O'Hara 1988). In addition, the telecommuter is in a more comfortable, familiar, and personalized working environment (Treasury Board 1992) and has the flexibility to work during the times of the day when his or her productivity and energy level are at a peak (Worklife Report 1992). Telecommuting can bring a sense of independence and renewal (O'Hara 1988; Work-life Report 1992): workers gain more control over their work schedule and workplace, and this empowers them as individuals (Shamir and Salomon 1985), improves job satisfaction, motivation, and self-esteem. Communication with supervisors and co-workers may improve as telecommuters must find new and efficient ways to communicate with and within the workplace (Treasury Board 1992). Stress is reduced through the elimination of workplace and commuting stressors, and this leaves the employee both physically and emotionally healthier (Letourneau 1990). The employer may benefit from a decrease in absenteeism as a result (Cote-O'Hara 1993; Filipczak 1992; Letourneau 1990; Worklife Report 1992). Telecommuting gives the employee more flexibility and control over personal schedules so that work responsibilities can be balanced with other life activities (Schiff 1983; Olson and Primps 1984). The potential of telecommuting as an aid for balancing work and family life is one of the factors that makes it particularly attractive to employees.

Telecommuting can help the employer retain its skilled work force and meet its employment equity goals.

For all these reasons, telecommuting can help the employer to retain its skilled work force (Goodrich 1990; Katz 1987; Letourneau 1990; Schiff 1983; Worklife Report 1992). It can also help a company to expand its applicant pool to include those who may be homebound for reasons of disability, commuting difficulties, or family responsibilities which allow little flexibility for paid employment (Bonanno 1993; Duxbury, Higgins and Irving 1987; Schiff 1983; Worklife Report 1992). This can assist an organization in meeting its employment equity goals.

It is evident that there are several personal and business advantages to be enjoyed by the employee and the organization that support the implementation of telecommuting. However, it is important to balance the advantages with a consideration of the possible disadvantages.

Disadvantages of Telecommuting

For the Employee

Telecommuters commonly report that they feel socially isolated (Duxbury, Higgins, and Irving 1987; Elling 1985; Letourneau 1990; Misutka 1992; Schiff 1983). The workplace often provides a social network which people enjoy as part of their overall work experience, but for the telecommuter, communication with coworkers may consist primarily of communication through electronic equipment. Social interaction at work can be a vital element in overall job satisfaction, and eliminating it may cause stress and lower morale (DiMartino and Wirth 1990). Furthermore, the telecommuter is deprived of the direct, personal interactions which provide informal, on-the-job training and first-hand knowledge of the organizational culture (Shamir and Salomon 1985).

The decrease in social interaction may increase the telecommuter's concerns about career development. Because of their decreased visibility, those who work at home may fear being passed over for a promotion (Bonanno 1993; DiMartino and Wirth 1990; Letourneau 1990; Worklife Report 1992). They are not as close to the informal information network that is often important to the stimulation of ideas which may help a career progress (Hamilton 1987); they may get less feedback from supervisors and peers on crucial issues; and the feedback they do get may be less valuable, since the nonverbal element is eliminated (Shamir and Salomon 1985).

The telecommuter may also experience negative changes at home. There may be a reduction in living space and an increase in at-home expenses for electricity and insurance (Gonanno 1993; Treasury Board 1992). The telecommuter will also have to learn how to deal with new kinds of interruptions such as those from children, relatives, and neighbours (Duxbury, Higgins, and Irving 1987; Letourneau 1990).

Managers must be flexible and evaluate by measuring results.

For the Employer

One of the most significant difficulties the employer has to overcome is the resistance of managers to telework (Bonanno 1993; Letourneau 1990). Because telecommuting challenges traditional notions of managing by watching, supervisors are often wary of it. They may find it difficult to manage employees they cannot see, and they may experience a sense of disempowerment (Cote-O'Hara 1993; Katz 1987; Worklife Report 1992). Managers must be flexible since they can no longer judge performance based on behaviour; instead, they must be able to evaluate by measuring results (Duxbury, Higgins, and Irving 1987).

There may be adverse effects on morale if the telecommuting situation is not handled properly. For example, employees who do not qualify to work at home may perceive the situation as unfair or they may interpret it to mean they do not have positive qualities. On-site employees may eventually resent their telecommuting peers (Bonanno 1993; Cote-O'Hara 1993; Katz 1987; Letourneau 1990; Worklife Report 1992).

There is an initial start-up cost for the employer. This may include the cost of equipment and furniture, as well as insurance (Katz 1987; Letourneau 1990). There are also training and counselling costs to support the telecommuters and managers during start-up (Treasury Board 1992). Finally, there are security issues that the employer must address (Duxbury, Higgins, and Irving 1987; Katz 1987; Letourneau 1990; Misutka 1992). There may be certain documents to which an employee requires access, but which should not leave the central premises. As well, the telecommuter may require access to confidential information through computer technology. This must be closely guarded so that others adept at using computers cannot gain access to it.

Human Resource Issues

There are several factors which, if considered carefully, can increase the likelihood of success in implementing a telecommuting program.

Selection

The proper selection of an appropriate job and of the right person for it is a crucial factor in the successful implementation of telecommuting. Not all functions lend themselves to telework. Ideally, a telecommuter's job should not depend on direct interaction with coworkers; thus it should not be part of a team project (Atkinson 1985). Jobs which are suitable for telecommuting include those done primarily on the computer or telephone, requiring relatively little face-to-face contact. The job and employee should not need a great deal of personnel support and the working space required should be minimal. Tasks should be fairly routine or easily performed independently (Cross and Raizman 1986; Goodrich 1990; O'Hara 1988). Other appropriate jobs include those that involve concentration and specific deadlines and that have results relatively easy to measure (Katz 1987).

The ideal teleworker is highly motivated, results-oriented, self-disciplined, and independent.

The ideal teleworker is a highly motivated, results-oriented, self-disciplined, independent worker who is a proven performer. Good time management, communication, and planning skills are important (Cross and Raizman 1986; Hamilton 1987; Hart 1993; Katz 1987). The social interaction of the office must not be a priority to this employee (Atkinson 1985; Goodrich 1990); employees should volunteer for telecommuting and should have already been employed by the organization for some time, so that they understand many of the informal elements of the enterprise (Caudron 1992; Filipczak 1992; McGee 1988).

Career Development

The employees must see telecommuting as part of their overall career goals and they should not believe their careers will suffer from it (Katz 1987; O'Hara 1988). Duxbury, Higgins, and Irving (1987, 283) explain that if telecommuting is to be successful, both employees and employers must perceive the advantages of telework as outweighing the disadvantages. Human Resources can help by ensuring that telecommuters retain access to career development opportunities, and by bringing the telecommuters into the office for periodic visits and meetings.

Training

Training must take place with the telecommuter, the supervisor, and with the organization in general. A general orientation program for all employees is important to promote the positive aspects of telecommuting so that everyone understands what the work arrangement involves and how it may be a suitable option for some and not for others (Duxbury, Higgins, and Irving 1987). This will help to minimize any negative reaction of peers who are not involved. Coworkers at the main site may also require some guidance communicating with the teleworkers to keep them involved in office activities and projects (Katz 1987).

The telecommuter should be trained to deal with such problems as the organization of tasks and time management, dealing with family interruptions and balancing family demands, and communicating with coworkers and supervisors. Supervisors should be trained to adapt to the new management styles and new problems of evaluating performance. Supervisors must be able to plan work, delegate responsibility, set timetables, and assess progress without actually seeing the telecommuter (Katz 1987).

Performance appraisals must focus on results, rather than both behaviour and results.

Performance Evaluation

Performance appraisals often focus on both behaviour and results (Brumbeck 1988, 387). However, since the telecommuter is physically removed from the workplace, behaviour is less important, and the performance appraisal should focus on results alone (Atkinson 1985; Caudron 1992). This challenges supervisors to set specific measurable goals with the teleworkers, and timetables identifying when these will be achieved (Atkinson 1985; Blank 1985; Caudron 1992). The supervisor becomes a coach and facilitator for the teleworker, providing guidance for accomplishing goals.

Union Response

If a union is involved, it will typically focus on such problems as worker exploitation, low pay, poor working conditions, and a possible loss of members (Helms 1992). Telecommuting has been perceived by unions as a modern form of industrial piecework

which, in the past, often resulted in exploitation in various forms (DiMartino and Wirth 1990).

Unions are concerned about members working longer and more intensely. Respondents to a survey conducted by the Public Service Alliance of Canada (PSAC) in 1991 suggested that the main reasons that employees participated in telecommuting was because of a heavy workload and insufficient time to complete work at the office (Stinson 1992). But PSAC argues that telework should not be accompanied by higher productivity targets or by longer hours (Johnson 1992b).

The union argues as well that there are negotiable issues in telecommuting, yet the employer agrees on the working arrangement with the individual employee, denying the union a voice in individual telecommuting arrangements. PSAC is concerned that some managers will attempt, in the individual telework agreement, to address issues which should only be addressed in the collective agreement (Public Service Staff Relations Board 1992): issues of overtime pay, standby and on-call pay, and employer coverage of extra insurance costs, for example (Johnson 1992a). The union is also concerned that telework will be perceived as a substitute for child care: telecommuting does not address the needs of combining work with family obligations and a telecommuter will not be able to do both jobs properly (Johnson 1992a; Stinson 1993).

Telecommuting is viewed as a threat to the collective nature of organized labour.

Telecommuting is also viewed as a threat to the collective nature of organized labour. As noted by Johnson (1992b, 5) of PSAC, 'Our strength has always come from our capability to work collectively.' But telecommuting decentralizes and disaggregates the work force and threatens union solidarity (Helms 1992). If a union is not already in place, a telecommuting program will make organizing more difficult (DiMartino and Wirth 1990).

DiMartino and Wirth (1990, 30) argue that

an obstacle for trade unions in adopting definite positions on telework lies in the fact that it is often linked to other crucial issues. ... These include new technologies, industrial restructuring, flexible work arrangements, unemployment, child care, part-time workers, women workers, and equality of opportunity in employment.

But it is possible for the union and the employer to work together from the outset and address the union's concerns (Lush 1993). For example, with the telecommuting pilot project at B.C. Systems, the B.C. Government Employees Union negotiated a number of safeguards into their contract and they now believe that telecommuting is a good option for their workers. The genuine involvement of the union in the planning and

implementation of a telecommuting program can help avoid confrontation and promote a work arrangement which will benefit both union members and the organization (Helms 1992).

Policy Development

If telecommuting is done to a significant extent, the organization should have a formal policy in place which sets out all the procedures necessary to implement and monitor a work-at-home arrangement (Caudron 1992; Cukier and Truvert 1988). The program must be based on sound business reasons supported by a cost-benefit analysis (Cote-O'Hara 1993) if it is to receive support from management. Program goals must be well-defined to establish a basis for determining if it is operating effectively and achieving what it set out to do (Cote-O'Hara 1993; Hart 1993).

Telecommuting and the Work and Family Balance

Social and demographic changes have dramatically affected Canadian organizations and their employees: the labour force participation rate of women has increased and many Canadians would like to spend more time with their families (Coates 1991; MacBride-King 1990; Paris 1989). Finding a satisfying balance between work and family presents many challenges to Canadian employers and their employees.

Employee control over place and time is an important element in balancing work and family demands.

Flexibility

Higgins, Duxbury, and Lee (1992) studied both work-time flexibility and work-location flexibility among private sector employees. They concluded that the flexible scheduling of work may have more impact on the family than the actual number of hours worked. Employee control over place, and especially time, is an important element in balancing work and family demands (Olson and Primps 1984). Telecommuting can help solve this problem simply by eliminating the commute to the central office. And the employee can decide on the ideal time for work, taking into account the demands of family members and the desire for leisure activities (Filipczak 1992; Olson and Primps 1985; Schiff 1983). Whether children remain in the home or go to a nearby school, the parent may enjoy reduced stress knowing that the children are closer throughout the day (Mattis 1990). The results of a survey conducted by the Canadian Aging Research Network (CARNET) (1993) suggest, further, that even the simple availability of a flexible work option is associated with less stress and less work and family conflict, since it apparently has a positive influence on employees' perceptions of their work environment and the supports available to them, even if they do not take advantage of it.

Appeal of Telecommuting

The CARNET study (1993, 20) listed work-at-home arrangements as the third most preferred option for employees: 34 percent of their respondents preferred this alternative. Higgins, Duxbury, and Lee (1992, 30) reveal that 46 percent of their respondents found work at home appealing. Female respondents, particularly dual-career mothers and female managers and professionals, appeared to value work location more than their male counterparts.⁴ In a Conference Board of Canada study, MacBride-King (1990, 39) found that work-at-home arrangements were ranked eighth out of twenty alternatives.

Risks to the Work and Family Balance

Telecommuting may actually heighten the conflict already existing between work and family demands. Olson and Primps (1984) studied the implications of working at home for both males and females. The women interviewed held clerical jobs and wanted to work at home to fulfil child care responsibilities. But the lack of separation between work and family demands increased the stress on these women as they tried to juggle the various activities and simultaneous demands. On the other hand, the men and women who did not have primary child care responsibilities found that working at home was a positive experience.

Clearly, working at home can provide an entirely new set of distractions which may seriously reduce employee productivity. Is it possible to fulfil both roles in the same place? Some commentators suggest that it is not possible to do so effectively and warn that telecommuting is not a panacea for balancing work and family obligations (Alvi and McIntyre 1993). Although men are not immune, women are more likely to be affected by the simultaneous and conflicting demands and the resulting drain on time, attention, and energy. This is especially evident in families that divide home responsibilities in the traditional way, but of course the absence of children will moderate the potential for stress (Shamir and Salomon 1985, 460).

There is a danger that telecommuting will be seen primarily as an option for women.

There is a danger that telecommuting will be seen primarily as an option for women who want to combine career and family goals. This will reinforce the idea that women are primarily responsible for the caregiving roles in the family, in addition to other domestic responsibilities, and that work and family issues will be seen primarily as women's issues (Letourneau 1990). Instead, these issues go beyond gender and should be seen as worker issues. Men are beginning to take on more of the responsibilities of the family, and work and family issues should be viewed in a broader context (Coates 1991).

Employer Considerations

Higgins, Duxbury, and Lee (1992, 40) point out that there is a strong link between stress levels and absenteeism, work performance, and productivity and that many experience stress in their attempt to respond to conflicting demands from work and family. MacBride-King (1990) studied absenteeism and its relationship to work and family for the Conference Board of Canada. Her data suggest that employees with younger children are more likely to be absent, regardless of the gender of the parent. Single parents are also likely to report higher rates of absenteeism. As MacBride-King explains:

The data from this survey suggest that the experiences of those encountering difficulties and stress in balancing their work and home responsibilities have a distinct impact on employee absenteeism. Respondents who reported experiencing difficulties in balancing their work and home responsibilities and those experiencing stress as a result, had higher overall rates of absenteeism than those reporting little or no difficulty with stress (1990, 33).

Absenteeism is an important and costly organizational issue. Paris notes in another Conference Board study (1989, 27) that 91 percent of her respondents felt working at home reduced absenteeism while another 85 percent believed working at home reduced tardiness. However, these results are not consistent with the CARNET (1993, 24) study which concluded that working at home did not have any bearing on lateness or absenteeism. For the moment, therefore, we must conclude that while telecommuting may have a positive influence on work and family roles, it is not clear whether this will actually translate into savings for the organization by reducing absenteeism itself.

Even if it does not have a striking effect on absenteeism itself, telecommuting may help employees who are experiencing difficulties in fulfilling job demands because of their caregiving responsibilities.' The CARNET (1993) study found that employees who turned down promotions or who were unable to take on additional projects at work because of outside responsibilities, found work-at-home arrangements helpful. Employees who wanted to undertake continuing education were also more likely to work at home. But work-at-home arrangements did not improve the employee's ability to attend meetings and undertake business trips. Here, again, the results are mixed.

Notes

¹ These numbers are sometimes difficult to quantify as the definitions of telecommuting may differ among studies by encompassing different elements. For example, some research notes that 16 million corporate employees work at home, but only 3.4 million actually have formal arrangements with their employers (Popcorn 1991).

² These figures correspond with the Catalyst study by Mattis (1990), which identified the telecommuter profile as 45 percent and 55 percent for female and males respectively.

³ Business professionals comprise 13.3 percent of the telecommuters. However, telecommuting is also undertaken by executives and managers (12.6 percent), engineers and scientists (9.6 percent) and salespersons (6.7 percent).

⁴ Forty-eight percent of women found the option appealing and forty-three percent of men. This data contradicts the figures of the LINK Resources and Catalyst studies (see above) which found that men are somewhat more likely than women to telecommute.

⁵ These job demands may include various activities such as meetings, business trips, extra projects, accepting a promotion, the ability to concentrate on the job, working overtime and taking a course or participating in other work-related activities after hours. Nearly one-half of the men in the survey stated that caregiving responsibilities caused difficulty in meeting job demands. The figures for women were as high as 73% (MacBride-King 1990, 25).

Telecommuting at Two Canadian Organizations

Clearly, the current literature on telecommuting leaves many questions unanswered. Because of the mixed results reported so far, we need to know more about the advantages and disadvantages of telecommuting, about the human resources issues which arise, about the types of employees who are currently telecommuting in Canada, and about the impact of their experience on the work and family benefits.

Out of a target pool of seven organizations which were frequently cited in the press as having a significant experience with telecommuting, we chose to study two firms in some detail — Bell Canada and IBM Canada — whose experience we expected to be particularly enlightening.

Bell Canada

Bell Canada is the largest telecommunications company in Canada, with approximately 47,000 employees in Ontario and Quebec. Thirty-seven thousand are unionized, while the remainder are either knowledge workers or management employees. About 2,500, or 1 in 14, telecommute. Of these, 1,500 are nonunionized knowledge workers and managers. This includes a wide range of staff positions such as personnel, communications, and network services.

At Bell Canada we interviewed two telecommuters, three managers, and a Human Resource representative who oversees the telecommuting program. Also, some managers who were telecommuters were able to offer insights into both sides of the arrangement.

Bell defines telecommuting as a work arrangement 'in which part of an employee's work time is spent at an alternative work site, such as a home or satellite office', and which involves electronic communication with the central workplace as opposed to travelling to their office locations.

Most Bell telecommuters work at home on a part-time basis, but telecommuting may be a full-time option, particularly when the job requires the employee to be mobile. This is true of some employees involved in forecasting and planning: they are already physically dispersed and accustomed to electronic communication. Many other employees are experimenting with the work arrangement and gradually easing into a full-time home office.

The Development of Telecommuting

Telecommuting has been under way at Bell for approximately ten years. In the middle of the 1980s, Bell implemented a Home Use Computing policy which allowed Bell equipment into employees' homes, if they wished to work after hours. Telecommuting developed gradually over the next few years, and gained acceptance as more employees

began to set up offices at home. But it was not a formal part of company policy until 1992 when Human Resources recognized telecommuting as an option within the flexible work arrangements offered under Bell's Alternative Work Arrangement (AWA) policies, which also included flexitime, job sharing, voluntary part-time, and compressed work weeks. Since a great deal of telecommuting had already been done, informally, by 1992, Bell decided not to begin with a formal pilot program and instead simply recognized telecommuting in the AWA policy as an option for individual business units, to the extent that they desired to use it.

The Telecommuting Policy

The responsibility for determining the logistics and specifics of telecommuting rests with individual business units, and Bell offers general guidelines for managers and telecommuters to assist with telecommuting decisions. The guidelines recommend that the unit begins with a feasibility assessment to determine the potential impact of telecommuting on employees and their jobs. The assessment considers four factors: the personal characteristics and circumstances of potential telecommuters; work-related factors such as telecommuting tasks, equipment requirements, and the impact on the work group; the managers' acceptance of and comfort with telecommuting; and the potential costs and benefits for the firm.

Bell also provides guidelines for drafting a telecommuting agreement. Several issues should be discussed and agreed upon by the employee and the manager; including working conditions, expenses, the employee's work space, liability in the event of an on-duty accident, the ownership of equipment, and information security. Personal and family responsibilities and tax implications should be discussed, as well. Finally, the parties are advised to agree on a method for evaluating the arrangement itself.

Implementation of Telecommuting

Telecommuting was formally implemented at Bell Canada in part because it was developing naturally anyway, and it was fully consistent with Bell's belief in the importance of flexible work arrangements. Bell also saw telecommuting as a potential market for their own services and technology, and felt that if they had a strong background in telecommuting themselves, they could tap into potential revenue by providing consultation and equipment for interested customers. Telecommuting also helped to contain costs by reducing the expense of floor space in downtown office buildings.

Telecommuting at Bell was promoted by HR and supported by senior management.

The telecommuting program was promoted by Human Resources with strong support from senior management. The CEO took an active interest in the AWA policies and personally encouraged employees to consider the benefits of each of the options, and there was a communication program which included support from the vice-president of

personnel, and a series of articles in the company newsletter.

Telecommuting at Bell is voluntary: management does not insist that anyone works at home. Employees are invited to participate only if they feel comfortable with the option, but the program is becoming popular.

Bell recommends that employees engage in telework part time, so that the advantages of working at home can be balanced with the need for office interaction. Also, the available technology is often not extensive enough to replicate the office entirely. Technology has in fact presented one of the greatest challenges for telecommuting. Many home sites now have fax capability, computer hardware and software, and separate phone lines.

Individual business units are currently pursuing a number of telecommuting initiatives. Satellite centres are being considered for east or west Toronto. A telecommuting pilot project is being organized and studied in the Bell Ontario business unit, with an eye to possible problems in individual telecommuting arrangements and to any special services which might be required. Telework is already underway in Quebec, and the human resource department is planning a follow-up survey in 1994 to determine how telework might be improved.

Telework has resulted in improved levels of customer service.

Advantages of Telecommuting

Many people at Bell agree that the company has benefited from a gain in productivity. Telework has resulted in improved levels of customer service because employees are able to work in blocks of uninterrupted time, which they require to be creative and productive. Some telecommuters report that there are fewer distractions at home, and, of course, time lost in the commute to work has been eliminated. Others have found that the choices they have under the AWA policy, which allow Bell employees more control over work scheduling, have improved morale. Working at home has brought a sense of renewal and a more relaxed approach to work demands.

Disadvantages of Telecommuting

Bell has had some problems with telecommuting. Technological difficulties were encountered in the attempt to replicate the office at home: these are being examined in the Bell Ontario pilot project. Some informants were concerned that telecommuters might be losing touch with group activities, although this was more apparent within work groups with a majority of their members still at the main office and only a few working at home. Bell Canada is looking closely at the impact of telecommuting on teamwork. Teams are a part of Bell's journey towards total quality and the impact of telecommuting teamwork is a crucial issue. To address it, Bell uses conference calling to create regular group

meetings, and managers bring teleworkers together occasionally for group meetings or training. They also encourage small team projects in an effort to build cohesiveness and keep the team mentality.

Human Resource Issues

Bell finds that the employees who telecommute successfully have a good understanding of their job and their role in it: this is usually developed by being in the organization for some time. In addition, they are usually self-starting, disciplined employees with high work standards. Their jobs often require them to be mobile, because they are a customer interface or they must work on information-based projects.

Telecommuters communicate internally through electronic mail, voice mail, telephone, conference calls, and face-to-face meetings. Occasionally, video conferencing is used instead of personal meetings, but Bell is not yet able to minimize face-to-face meetings with this technology. Telecommuters must still meet personally when, for example, they are working on a team project, undergoing training or performance assessment, or when status reports are taking place.

Bell assesses the performance of telecommuters in the same way it assesses employees in Bell office locations: an annual assessment is supplemented by periodic status reports throughout the year. The assessments consider whether the employees have met the objectives set for them earlier. In addition, employees are assessed on the qualities they display in the organization, and if there are numerical measures for the job, these are used as well. The teleworker's manager may supplement this with input from customers, coworkers, and other managers, depending on the work being appraised.

Until recently, Bell Canada did not provide training to the employees, managers, coworkers, or families that were to be involved in or affected by telecommuting arrangements. Some segments of the organization did not need this training, but the Bell Ontario pilot project has incorporated a training course designed for managers and telecommuters. It covers such issues as time management, technology, and dealing with such difficulties as social isolation.

The role of the manager at Bell is changing.

The role of the manager at Bell is changing and Bell is trying to develop a management style suitable for telework. Whether they manage telecommuters or not, Bell encourages its managers to have trust in their group, to provide coaching towards results, and to include employees in decision making. The managers who deal with telecommuters usually have a 'hands-off' approach and delegate work and responsibility to their employees. Telecommuters are free to manage their own time, and managers usually have a good understanding of how the employees approach their work and do their jobs.

Telecommuting and Work and Family

Bell Canada believes that the organization must be sensitive to the needs of its employees. The AWA policy reflects this by providing flexible working arrangements that will assist employees in finding a balance between work and family. Many employees at Bell report that telecommuting has enabled them to achieve a better balance in several respects. As expected, the elimination of commuting has resulted in more time for balancing responsibilities, and less stress. Because the teleworker is at home, there is more trading of household duties between partners. Some households have noticed significant savings in the cost of transportation, and drycleaning, for example.

Many teleworkers appreciate the increase in control and flexibility. Bell did not intend telework to be a substitute for childcare, but many teleworkers are finding that, since they are closer to the family and not tied to a rigid schedule, they are better able to handle emergencies and to assist with such things as doctor's appointments and school functions. We heard several examples at Bell of employees working at home to care for a sick child. Without the home office, they would have been absent from work.

Many Bell telecommuters do point out, however, that they have to be careful to establish a clear demarcation between work and family activities in the household. Bell recommends that employees designate an area in the house specifically as workspace. Other employees warn that all family members must follow clear guidelines about interruptions and the workspace. On the other hand, the teleworker must have the discipline to stop working at the appropriate time and to avoid the tendency to cocoon in the office.

Telecommuting at Bell has resulted in productivity gains, real estate savings, and a better balance of work and family responsibilities.

Summary

Telecommuting at Bell Canada has resulted in productivity gains, real estate savings, and a better balance of work and family responsibilities. Obviously, this benefits the whole organization. Bell is still monitoring the impact of telecommuting on teamwork, but it expects that telecommuting will continue to grow in the organization. Bell's program is an example of a work arrangement that is probably here to stay, and it provides a good example of the services that Bell will need to provide to other organizations if telecommuting continues to grow.

IBM Canada

IBM Canada is a large, nonunionized company in the information technology industry. It has approximately 10,200 employees. The thrust of its business is in developing, manufacturing, selling, and servicing mainframe, midrange, and personal computer systems.

In 1991, IBM implemented a telecommuting pilot project, referred to as 'Flexiplace', at its offices in Ottawa. This focused primarily on employees in marketing who already spent a significant portion of time away from the central IBM location and who therefore provided low-risk opportunities to test the viability of telecommuting.

After an evaluation of this pilot project, IBM formally launched Flexiplace as a company-wide option in January 1992, and expected that the program would be fully in place within two years. In mid-1993, IBM estimated that approximately 800 employees (8 percent of the work force) were telecommuting and that about 350 of these were telecommuting from their homes. The other 450 participate in other forms of Flexiplace.

Telecommuting at IBM takes a variety of forms. Many employees have remote access to the organization through the Electronic Briefcase program in which an employee is electronically connected at home through low-speed lines and employee-owned equipment. Employees using this alternative are still based in their central office, but they use the Electronic Briefcase after a regular workday. In addition, portable and laptop computers provide some employees with mobility and access from a variety of locations including homes and hotel rooms. IBM also has a history of using computer terminals at customer sites. This has allowed the IBM employee frequent contact with the customer, and has provided access to IBM's system from the customer's remote location.

In another Flexiplace arrangement, the employee's home office is the main workstation, and the regular workday is based in the home location. Access to IBM is usually on high speed lines and equipment owned by IBM. Although many employees are involved in Flexiplace full time, their work may require significant travel to customer locations and periodic commutes to the central IBM location for meetings. In addition, IBM provides workstations shared with other Flexiplace employees, for days when a Flexiplace employee wishes to work in the main office.

A large majority of the employees who telecommute at IBM are in marketing: members of the IBM salesforce, systems engineers, and client managers. The salesforce is responsible for revenue generation and obviously must spend a great deal of time with customers; systems engineers support the sales force with the technical input required to find solutions to customer problems. Client managers are responsible for managing and maintaining the customer relationship once it has been established. All these positions have direct contact with the customer, and because of the mobility required to satisfy customer needs, they already had some remote access capabilities. But Flexiplace has moved their base workstations from the central office to their homes. IBM is now starting to investigate and pilot Flexiplace opportunities with some of their support staff, a function that in the history of this organization has been linked more directly to the central office.

IBM has 'neighbourhood centres' to provide Flexiplace workers with office services.

There is a significant amount of Flexiplace at IBM in Toronto. Because of the dense population there, travel problems and the cost of office space are most evident. IBM has three neighbourhood centres, in Whitby, Mississauga, and downtown Toronto, which provide Flexiplace employees with office services that have not been duplicated in their home. For example, an employee who needs to make copies or send faxes can do so at a neighbourhood centre without going into the central office.

Implementation of Flexiplace

The IBM branches and departments execute and administer the Flexiplace program. Each location is responsible for developing strategies to implement Flexiplace, and IBM does not have specific guidelines to define how a particular arrangement must be set up. Instead, the individual manager and employee decide what is necessary to create a successful, productive home office environment. As a result, employees may work at home for several different reasons and under a range of working environments.

IBM has designated a project manager to guide departments considering Flexiplace and to ensure that the necessary infrastructure and support systems exist in the organization to support it. This person ensures that the channels are in place to provide the proper technology. IBM found that this was crucial, because in their first attempt at Flexiplace, equipment problems were significant obstacles. Now more attention is given to the configuration of the computer systems and telephone technology.

The computer equipment is owned and supplied by IBM, but anything beyond the minimum requirements must be purchased by the employee. IBM provides high-speed modems, additional phone lines, hardware and communications and other required software.

IBM is not responsible for the cost of standard home office furniture, electrical outlets, renovations, household expenses or additional insurance. IBM will, however, provide filing cabinets and meet the expense of moving equipment. Essentially, most of the computer equipment required at home is funded by IBM.

Flexiplace results in significant savings in the cost of workspace for IBM.

Advantages of Flexiplace

In 1990, IBM evaluated their income and expenses in response to a challenging and difficult economy. Real estate was identified as the second largest expense after labour, and Flexiplace became one of several alternatives designed to reduce the cost of rent,

real estate and business taxes, utilities, and other operating costs. It is projected that Flexiplace will contribute to an overall reduction of 50 percent in real estate costs by reducing office space. In Ottawa, for example, the cost of housing all IBM employees will be \$16.6 million until 1997. With Flexiplace underway, it is estimated that the cost of the workspace for the same number of employees will be \$10.9 million, resulting in a savings of \$5.7 million over six years.

Although the real estate benefits were fundamental to the implementation of Flexiplace, IBM has met other objectives as well. Flexiplace employees estimate that their productivity increased by 25 to 40 percent when they worked in the home office. This comes about in a number of ways. Customers have reported that their IBM contacts are more accessible. By eliminating the commute to the IBM office, the telecommuter can attend to the customer site directly, and have more time to fulfil customer needs both at the site and in preparation and problem solving at the workstation. Many of the offices at the central IBM location are open-concept, and proximity to colleagues lends to casual discussion and periodic interruptions. In contrast, the telecommuter is able to have significant blocks of time wherein work can be done more efficiently.

IBM has seen an increase in morale in the more successful examples of telecommuting. This is probably partly the result of increased productivity, but there are other factors as well. A survey of the Ottawa pilot project determined that employees were more satisfied because they had greater control over their time, and this enabled them to better balance their work and family obligations. Flexibility enabled some employees to work when they were most alert and productive instead of working during the regular work day. As we expected after reviewing the literature on telecommuting, it has provided IBM employees with the flexibility they needed to work better and smarter for IBM Canada. The company continues to explore new functions which may be suitable for Flexiplace.

Disadvantages of Flexiplace

There were problems during the initial implementation of Flexiplace because many employees were unable to configure their technology properly and became quite frustrated, as a result. IBM now provides greater technical support, and employees do not have to integrate their systems on their own.

Managerial resistance is a common difficulty.

As we saw in our literature review, management resistance is a common difficulty in telecommuting, and IBM has experienced this as well. Since managers may feel uneasy and not in control of department activities, trust becomes an important element in the relationship between the manager and telecommuter. IBM tries, generally, to promote empowerment and delegation in the organization and, of course, telecommuting clearly requires this of managers. IBM responds to managerial resistance with pilot projects

which address managerial concerns and demonstrate new possibilities. If the project is not successful, employees can revert to their previous arrangements.

Selection of Flexiplace Participants

To minimize the risks involved with telecommuting IBM determines who will participate in Flexiplace based on a 'voluntary, management-approved' premise. Employees must want to telecommute, and management must agree that the person and the job are suitable prospects. Although the extent of the participation in Flexiplace is determined by the employee and manager, there are a number of job attributes and personal traits that IBM has recognized as being more conducive to telecommuting.

For example, likely candidates are mature and self-disciplined and able to manage their travel and work time adequately. Their jobs should have self-contained planning and problem-solving responsibilities, and they must be prepared to make the necessary adjustments to their job and home life. Potential candidates are permanent, full-time IBM employees with at least three years experience in the company: they must be proven performers. In addition, they should live relatively close to a neighbourhood centre.

Employees who depend, in some way, on the office environment and who need frequent face-to-face meetings, for example, should not go on Flexiplace. Some jobs at IBM are not appropriate for Flexiplace because the requisite technology would be too expensive; and some workstations quite simply cannot be replicated at home.

Flexiplace at IBM is not driven by HR, but by line management.

Managing Flexiplace

The Flexiplace program at IBM is not driven by the Human Resources department. Instead, line management is directly involved in the initial decision to participate in Flexiplace, and in the decisions involved in its implementation. Human Resources does monitor the program and it deals with any internal complaints. As well, Human Resources is responsible for ensuring that the work-at-home arrangements do not violate any legal regulations. For example, IBM telecommuters are covered by health and safety regulations if an accident occurs while performing IBM work, because the home location is still an IBM location.

Individual managers are primarily responsible for implementing and managing telecommuting. IBM recommends that managers contact Flexiplace employees regularly through e-mail, voice-mail, and regular meetings. This requires an organized approach to ensure that relevant issues are discussed at one time; and IBM cautions that favouritism should not be shown by communicating more with those who remain at the office.

Managers must be rigorous in their evaluations of Flexiplace participants, using the same process and criteria as they use for employees who remain in IBM offices. If

objective measures can be used in the evaluation, then performance goals are based in part on such measures along with qualitative factors. Evaluation is results-oriented, and the manager's qualitative judgments are sometimes supplemented with peer input.

Flexiplace and Work and Family

Although Flexiplace was not designed by IBM as a work and family policy, many participants have found that it has enabled them to better meet family responsibilities while maintaining or improving their productivity on the job. On the other hand, others returned to the main office environment because the family provided too many distractions. IBM warns that Flexiplace should not be a substitute for daycare since this may damage employee productivity at home.

Conclusions

The Employee Groups

Returning now to the questions which our case studies were designed to answer, we can report that several of the jobs we analyzed support the consensus in the literature that information-oriented jobs requiring relatively little personal interaction are most suitable for telework. On the other hand, many successful teleworkers at IBM and Bell were doing highly unpredictable, nonroutine work which required a significant amount of interaction. As we saw, their main responsibility was to maintain customer relationships and telecommuting came quite naturally to this mobile group which was already accustomed to electronic communication.

As well, the successful teleworker at Bell and IBM had the personal qualities identified in the literature: he or she was self-motivated, disciplined and had the requisite planning abilities and communication skills.

Advantages of Telecommuting

Many of the representatives interviewed experienced benefits similar to those predicted in the literature. As we saw, there was widespread agreement that productivity had or probably would improve, for familiar reasons. The literature recognizes that telecommuting can help retain employees, and we found examples which not only support this, but also reveal another unanticipated advantage — savings in the relocation costs of transfers and promotions. Telecommuting can enable employees to remain in their present physical location while they transfer electronically to new positions in the company, with substantial savings as a result.

Telecommuters can focus on the content of their work rather than on interpersonal dynamics.

Another unanticipated advantage is that telecommuting can actually help people who are linked electronically to be more focused on the content of their work rather than on their interpersonal dynamics. Individuals working face-to-face develop an overall impression based on many elements, including such things as manner of dress and body language. Telecommuting eliminates some non-verbal elements, and it may emphasize others, such as intonation. Some practitioners believe that this removes distractions which interfere with the task at hand, leaving them free to work more productively.

Disadvantages of Telecommuting

The literature warns that telecommuters may feel socially isolated, and we found many telecommuters making periodic office visits to keep in contact with office friends and colleagues, and some worked at the central office part time. But others, did not feel isolated, or their job allowed them to have their home office and still maintain interaction.

Some studies of telecommuting warn that there is a risk of overworking. The home office door is never locked and the information line to the main office is available 24 hours a day. We did not conclude that telecommuting causes overwork, but it became clear that anyone with this tendency already may work more, simply because the job is more accessible.

Human Resource Implications

The literature we surveyed identifies training as an important element in the implementation of telecommuting, yet we found that very little training had been done in the organizations we studied. Some informants agreed that although training may not have been crucial, it could have assisted in the transition by at least allowing for discussions with those already telecommuting about the risks involved and strategies for dealing with some of the drawbacks. At the time of writing, one organization was preparing a core training module.

Telecommuting presents some concerns about the visibility of workers for both career opportunities and for performance evaluations.

The warnings in the literature about the effect of telecommuting on career development may be overdone. We conclude from our research that the link between these two elements is not clear: there are many other factors that may affect career development. Many organizations are flatter than in the past, and the typical ladder of career progression is now more lateral. Career development is no longer seen as necessarily connected to upwards promotion. We did discover some concerns about the visibility of telecommuters not only for career opportunities, but also for performance evaluations.

It was difficult to determine from the information we collected if telecommuting had improved recruiting, as predicted, by creating a wider applicant pool. Our informants did not know if telecommuting had enticed anyone to sign with their organizations. It did not appear that telecommuting was used as a selling point, but there was little recruiting being done anyway, and it was not a good time to judge the impact of telecommuting on recruiting. However, we did find some support for the premise that telecommuting allows an organization to retain employees.

We found, as expected, that the employer generally assumes responsibility for accidents occurring in the home while employees are doing company work. But we also found

that although the literature suggests that the teleworkers' home should be inspected to ensure safety, this was rarely done in practice. Fortunately, there had been no accidents, but we still regard the safety inspection as an important precaution.

Telecommuters were evaluated using the same standards and procedures as those who worked in the central office: their physical location was not an issue. Paramount were the results they achieved, wherever they were. The evaluation process seemed to be affected to a greater degree by factors such as the approach of the managers involved, the communication between the telecommuter and the manager, and ultimately by the culture and general procedures of the organization.

Working at home is not a substitute for child care.

Work and Family Balance

As predicted in the literature, we found that telecommuting had helped a number of employees to achieve a better balance between work and family life. But discipline on the part of all family members was required for uninterrupted time. Everyone agreed with the warnings in the literature, that working at home is not a substitute for child care and one cannot do both productively.

Recommendations

As a result of this study, we make the following recommendations, which will improve the chances for a successful telecommuting arrangement.

- *Thorough attention must be given to the technology provided for the home office.* Employers should not assume they can simply send employees home with a computer system. The success of the telecommuting experience is closely connected to the adequacy and sophistication of the technology provided: the computer hardware and software and the communication network. Inadequate technology will result in frustration and low productivity, and it will increase the employee's feelings of isolation. Technology is the key to the telecommuter's productivity, and as it develops further, the office will be easier and less expensive to replicate at home.
- *Managers and telecommuters have trust in their relationship.* Our research confirmed that trust is a key element in the relationship between supervisor and employee, and if a manager is comfortable with giving employees autonomy, the work relationship will be more conducive to a smooth transition to telecommuting. This also applies to the organization's view of its employees. Companies that believe in empowering their employees and allowing them freedom to control work responsibilities will have more success with telecommuting. Telecommuting is more than a simple variation in work arrangements; it is also a reflection of fundamental management practices.
- *Managers and telecommuters must always be aware of the quality and quantity of the communications that take place.* Managers and coworkers must be kept informed about the teleworker's progress, and the teleworker must be apprised of information being exchanged at the office. Casual, spontaneous conversations will be less frequent, and communication efforts should be organized, regular, and deliberate. A supervisor might schedule regular conference calls to facilitate conversation among the group or to give special announcements. Face-to-face meetings with the telecommuter at a neighbourhood centre instead of the central office would help, as well. Both the manager and the telecommuter must be genuinely committed to keeping each other well informed.
- *Individual telecommuting arrangements should be customized to meet the needs of the parties directly involved.* Individual telecommuters may have different needs as a result of their job or home environment, and managers may have different requirements for individual employees. One employee may decide to telecommute only part-time, because of a need for social interaction, yet others will be happy with a full-time arrangement. One individual may require a fax machine or a cellular phone while others may not. Or perhaps a manager wants a particular individual to remain in the office because the job requires it. An organization must have general guidelines for telecommuting, but guidelines that do not permit flexibility to meet individual needs may frustrate managers and telecommuters and eventually damage the whole program.

Several important questions arose in the course of this study, which can only be answered with further research. We need to know more, for example, about the effects of a physically dispersed work force on team building and group cohesiveness and about the effects of telecommuting on workers who must remain based in the main office. We also need to know more about the impact of training on the success of a telecommuting project. We might ask, furthermore, whether telecommuting hampers on-the-job training or whether it is done just as well by electronic communication links?

The role of unions in the development and implementation of telecommuting should also be examined. To what extent are unions typically involved? What issues are they most concerned about, and how are their concerns usually addressed? Does telecommuting present problems or opportunities for union members?

Although telecommuting has been underway in Canadian organizations to varying degrees for some time, it is only in the last two years that it has been formally implemented, with deliberate organizational efforts. Thus we do not know enough about the long-term effects of telework. Many predictions have been made about the future growth of telecommuting. Some commentators predict that neighbourhood centres will be more prevalent and head offices will exist mainly to provide meeting places and conference rooms (Popcorn 1991). Others estimate that approximately 20 percent of North American workers will work at home within the next ten years, and some estimates are as high as 40 percent (Coates, Jarratt and Mahaffie 1990, 119; Cukier and Truvert 1988, 3; Pachner 1992, 29). The consequences, not only for the employees and organizations directly involved, but also for society as a whole, would be far-reaching.

We hope that this study of the experience with telecommuting so far, will leave us better equipped, as individuals and as a society, to handle the challenges ahead.

References

- Alvi, Shahid and Dave McIntyre. 1993. The open-collar worker. *Canadian Business Review* 20(1): 21-24.
- Atkinson, William. 1985. Home/work. *Personnel Journal* 64(11): 105-9.
- Blank, Murray D. 1985. Managing the employee on the other side of the screen. *Personnel* 62(7): 64-68.
- Bonanno, Rosanne. 1993. Teleworkers are challenging traditional notions of work. *Canadian HR Reporter* (January 29): 10.
- Canadian Aging Research Network (CARNET). 1993. *Work and family: The survey*. Guelph: Network of Centres of Excellence, Gerontology Research Centre, University of Guelph.
- Caudron, Shari. 1992. Working at home pays off. *Personnel Journal* 71: 40-49.
- Coates, Joseph, J. Jarrat, and J. Mahaffie. 1990. *Future work*. San Francisco: Jossey-Bass.
- Coates, Mary Lou. 1991. *Work and family issues: Beyond 'swapping the mopping and sharing the caring'*. Kingston, ON: IRC Press, Industrial Relations Centre, Queen's University.
- Cote-O'Hara, Jocelyne. 1993. Sending them home to work: Telecommuting. *Business Quarterly* 57(3): 104-9.
- Cross, Thomas B. and Marjorie Raizman. 1986. *Telecommuting: The future technology of work*. Homewood, IL: Dow Jones-Irwin.
- Cukier, W. and L. Truvert. 1988. *Telework: A status report*. Downsview, ON: Transportation and Energy Management Program.
- DiMartino, Vittorio and Linda Wirth. 1990. Telework: An overview. *Conditions of Work Digest* 9(1). Geneva: International Labour Organisation.
- Duxbury, Linda, C. Higgins, and R. Irving. 1987. Attitudes of managers and employees to telecommuting. *Information Management* 25(3): 273-85.
- Duxbury, Linda, Christopher Higgins, and Catherine Lee. 1992. *Balancing work and family: A study of Canadian private sector employees*. London: National Centre for Management Research and Development, University of Western Ontario.
- Elling, Monica. 1985. Remote work/telecommuting: A means of enhancing the quality of life or, just another method of making business more brisk? *Economic and Industrial Democracy* 6(1): 239-49.

- Filipczak, Bob. 1992. Telecommuting: A better way to work? *Training* : 53-61.
- Goodrich, Johnathon N. 1990. Telecommuting in America. *Business Horizons* 33: 31-37.
- Hamilton, Carol-Ann. 1987. Telecommuting. *Personnel Journal* 66(4): 91-101.
- Hart, Douglas. 1993. *Interview*. Toronto: Hart and Associates Consulting.
- Helms, R.M. 1992. *Telecommuting: A corporate primer*. North York, ON: IBM Centre for Advanced Studies, IBM Canada Lab.
- Johnson, Theresa. 1992a. Homework no solution for families. *TechNotes* 1: 4-5. . 1992b. Decentralization of computing power. *Alliance* 4(4): 21-22.
- Katz, Adolph. 1987. The management, control, and evaluation of a telecommuting project: A case study. *Information and Management* 13: 179-90.
- Letourneau, Carrie E. 1990. *Telecommuting and electronic homework in Canada*. Ottawa: Women's Bureau, Labour Canada.
- Lush, Patricia. 1993. The desktop commuter. *Globe and Mail*, 27 July, p.B18.
- MacBride-King, Judith. 1990. *Work and family: Employment challenges of the 90s*. Report 59-90. Ottawa: Conference Board of Canada.
- Mattis, Mary C. 1990. *Flexible work arrangements for managers and professionals: Findings from a catalyst study*. New York: Catalyst.
- McGee, Lynne F. 1988. Setting up work at home. *Personnel Administrator* 33(12): 58-62.
- Miller, Thomas E. 1991. *1991 Telecommuting data*. New York: Link Resources Corporation.
- Misutka, Frances. 1992. The workplace takes wing. *Canadian Business* 65(May): 73-77.
- Nolan, Carol. 1990. *The telecommuting resource guide*. Los Angeles: Pacific Bell.
- O'Hara, Bruce. 1988. *Put work in its place: How to redesign your job to fit your life*. Victoria: WorkWell Publications.
- Olson, Margrethe H. and Sophia B. Primps. 1984. Working at home with computers: Work and nonwork issues. *Journal of Social Issues* 40(3): 97-112.
- Ontario Women's Directorate. 1991. *The crucial balance*. Toronto.
- Orser, Barbara and Mary Foster. 1992. *Home enterprise: Canadians and home-based work*. Toronto: Ministry of Industry, Trade and Technology.

- Pachner, Joanna. 1992. On the home front: The home office revolution. *Canadian Computer Reseller* (June 17): 28-34.
- Paris, Helene. 1989. *The corporate response to workers with family responsibilities*. Report 43-89. Ottawa: Conference Board of Canada.
- Peles, Slavenka. 1986. The legal aspects of home-based telework in Belgium. *Labour and Society* 11(1): 83-93.
- Popcorn, Faith. 1991. *The Popcorn report*. New York: Doubleday.
- Public Service Staff Relations Board. 1993. *Public Service Staff Relations Act decision: Telework*. Ottawa.
- Schiff, Frank W. 1983. Flexiplace: Pros and cons. *The Futurist* 18(3): 32-33.
- Shamir, Boas and Han Salomon. 1985. Work at home and the quality of working life. *Academy of Management Review* 10(3): 455-64.
- Stinson, Jane. 1993. Home truths. *Our Times* 12(1): 37-40.
- Treasury Board Secretariat, Personnel Policy. 1992. *Telework pilot project in the public service*. Ottawa: Canada Communication Group Publishing.
- Violino, Bob and Stephanie Stahl. 1993. No place like home. *Information Week* (February 8): 22-29.
- Worklife Report*. 1992. Pros and cons of telework. 8(6): 1-2.



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