

Industry Canada  
Centre for Information Technology Innovation (CITI)  
Technological Innovation and New Forms of Work Organization (ITOT)

**Telework at Home:  
Evaluation of a Pilot Project at  
Employment and Immigration Canada**

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Laval  
March 1994

Une version française de ce document est  
également disponible sous le titre :

Télétravail à domicile :  
Évaluation d'un projet-pilote à Emploi et Immigration Canada

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Catalogue NO Co28-1/115-1994E  
ISBN NO 0-662-22511-2

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## **SUMMARY**

During six months, the Computer Services Division (CSD) of Employment and Immigration Canada (EIC) (now Human Resources Development Canada) conducted a work-at-home (WAH) pilot project within a team of specialized clerks. The CSD's objective was to determine the feasibility of home telework, taking into account such aspects as cost-effectiveness, quality of working life, quality of service and economic advantages.

The project involved clerical staff. The work done by these clerks essentially consisted in performing of calculations on the basis of written documents. For this project, a new step involved entering the results using the microcomputer. These employees work at home 4 days a week and go to the office on the fifth day.

### **FEASIBILITY, PRODUCTIVITY AND QUALITY OF WORK**

The work done by these specialized clerks may be done at home without any major difficulties. According to the data collected by the CSD, the project participants met their production quotas (four to six cases an hour, depending on the type of case being processed) and had more productive hours per day than the employees working in the office (i.e., the number of working hours actually spent processing cases). The quality of the work done at home also met CSD standards. The only potential problem concerned the actual number of hours worked. It seemed that some participants worked extra hours in order to meet their weekly quotas. This aspect should therefore be monitored, therefore, although it would appear that the situation improved over the course of the pilot project.

### **Adjustments**

Some adjustments in the work process were necessary in order to allow for teleworking; some were made before the project began, others afterwards. Before the pilot project started, the work-routing process was re-evaluated to take into account the fact that the project participants would be receiving the work to be done once a week rather than every day. A coordinator, who also had certain tasks relating to work done in the office, was put in charge of the categorizing and distributing cases. The coordinator also acted as the contact between the home workers and other

department employees. Once the project had begun, minor adjustments had to be made in the way some information was being transmitted to the other employees (it was a matter of establishing a standard format and clarifying the information involved).

### **Supervision**

The issue of remote supervision did not appear to pose a problem in this project, especially for the control aspect of supervision. Control was based on production objectives (quotas) and quality control over samples of processed cases. The number of hours worked and the particular times when the work was done were not subject to supervision.

When employees needed advice or help concerning a specific case, they consulted reference manuals or contacted a colleague. When they had to deal with more complex cases or did not have all the necessary information, they contacted the supervisor or coordinator by electronic mail or telephone. For changes in procedures, the participants were advised by telephone or E-mail in urgent cases, and at their weekly meeting otherwise. All the persons involved said they were satisfied with this procedure.

### **Technology and Support**

The technology set up for the project enabled the participants to do their work, communicate with one another and contact certain office personnel. While the system worked well in general, certain problems remained, specifically the availability of telephone lines and occasional system breakdowns (which also occurred in the office, of course). The project participants had more trouble dealing with such breakdowns, however, since they did not always know whether the problem was limited to their equipment or more generalized. In addition, since they had a specific number of cases to process in the week, such breakdowns and communications difficulties were of greater significance for them than they were for the office workers.

The technical support services were effective, even though support appeared to be more complex when provided off-site.

## QUALITY OF LIFE

The participants felt that working at home provided many benefits, all of which were linked to the quality of working life and the quality of life in general. It was, in fact, in anticipation of these benefits that they had volunteered to take part in the project. The following were main **advantages** of the project as seen by the participants were:

- greater control over their work schedules and, for some, over the planning of their work;
- lower transportation time and costs;
- reduced work-related expenses (lunches, coffee breaks);
- a or better or healthier work environment (air quality as compared with that downtown and, in particular, in the office, work schedules, etc.)

Interest in the project was also related to the desire for change and career evolution.

The participants also saw disadvantages to working at home, again linked to quality of life. The main **disadvantages** were as follows:

- the furniture, which several people considered inadequate;
- in some cases, an increase in work time;
- less social interaction;
- in some cases, adjustments in relation to other family members (spouse, children).

In light of the advantages of the project, however, the participants were prepared to make tacit compromises as far as the resulting disadvantages were concerned. It would be important that the project's main advantages be safeguarded order to ensure that the participants maintain their quality of life, as well as full commitment to the project high. Some attention should also be given to the disadvantages or drawbacks perceived seen by the participants in order to maintain quality of life and ensure the project's long-term success.

It should be noted that not all the participants perceived all the same advantages or disadvantages, nor did they experience them to the same degree..

## ABSENTEEISM

There was no absenteeism during the first month of the project, but it increased over the following five months. Nonetheless, over the six months of the pilot project, the number of days' absence due to illness, leave, family obligations or other reasons was 27% lower among the specialized clerks working at home than among those working in the office.

## INFORMATION AND TRAINING

The participants received information about home working, mainly from federal government documents and business magazines; they were also kept informed of the process leading up to the start of the project.

Although they had been informed of certain disadvantages of working at home, the participants still had to adjust to their new working environment, especially in terms of the distinction to be made between work and private life. The participants also had to make adjustments in planning their work and work schedules.

With respect to technical training, some weaknesses were identified (and corrected) at the outset of the pilot project. The intention was to take into account the participants' lack of knowledge of computers and avoid inundating them with technical information. However, the training does not seem to have been adequately adapted to the level of the users, who did in fact have knowledge of computers.

Nevertheless, after six months of working at home, the participants all acquired the technical knowledge and experience (of both microcomputers and the system in use) needed to perform their work.



## INTRODUCTION

From May 31, 1993, to November 26, 1993, the Computer Services Division (CSD) of Employment and Immigration Canada (EIC) in Montreal conducted a work-at-home (WAH) pilot project within a team of clerks who specialized in calculating overpayments. The CSD's objective was to determine the feasibility of home telework, taking into account such aspects as cost-effectiveness, quality of working life, quality of service and economic advantages.

The Centre for Information Technology Innovation (CITI) carried out an evaluation that included not only specific matters of concern to the CSD, but also a number of other organizational and people-related issues that arose from the project.<sup>1</sup> Our intention was not to conduct a cost/benefit evaluation of the project. The methods used to gather data essentially consisted of group and individual interviews with the participants<sup>2</sup>, the coordinator, supervisor, and project manager, and with a member of the systems-engineering staff. Data collection was complemented by observations made during meetings, and through a questionnaire administered to employees in the same unit who carried out the same tasks in the office that the project participants were doing at home.

The evaluation report begins with a presentation of the context in which the project took place, as well as a profile of the participants. It then outlines the main advantages and disadvantages of home working as perceived by the employees who worked at home during the pilot project. The report goes on to consider the primary points that came out of the interviews and the other data collected.

## CONTEXT

The Computer Services Division of Employment and Immigration Canada was interested in home work for various reasons. To begin with, the organizational context was favorable. In September 1992, the Treasury Board issued a policy promoting experimentation with telework in the federal public service. During the same period, the CSD had received supplementary resources that enabled it to hire an additional 10 employees. There was, however, insufficient work space to

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<sup>1</sup> These included some points raised in the interview process. For example, in the interviews we noted that several participants had altered their perception of their work.

<sup>2</sup> Interviews were conducted with six of the project's eight participants. Unless otherwise indicated, by *participants* we mean the six employees working at home who took part in the CITI's interviews. The masculine form is used in this report for the purposes of readability.

accommodate the sudden increase in the number of employees. For a certain period of time, the new employees were obliged to work in a conference room. The space problem, combined with the Treasury Board initiative, resulted in the work-at-home project.

Another factor underlying the project was management's wish to enable the clerical staff to feel more highly valued in their role within the organization. In the past, the clerks assigned to specialized tasks (calculation of unemployment insurance overpayments) had often been ignored during various special projects. Furthermore, the work done by these clerks is very specific to their particular positions, which limits their chances for career advancement and mobility. Given this context, the CSD management had decided in recent years to try to increase the clerks' motivation and make their work more interesting. Steps were taken to provide them with better equipment, as well as greater autonomy and responsibility for the work process. This was done through a supervisory approach that emphasized support and quality control more than direct supervision and specific work assignments, for example.

Work-at-home fit into this approach. It somewhat expanded workers' autonomy and responsibility, allowing them to determine their use of time and work schedules themselves. Only production quotas and quality were monitored. As well, the fact that participants were working in an environment physically isolated from their colleagues demanded greater autonomy and the mastery of a wider range of skills. Management's expectations of WAH were that it cover its costs and improve employee satisfaction while maintaining the existing production volume (quotas).

## **PARTICIPANTS**

The CSD's work-at-home project involved clerical staff. The nine clerks present before the hiring of the new staff were invited to take part. Eight of them — six women and two men — accepted. The participants, who for years had carried out highly segmented tasks under close supervision, found themselves at home, in a context that required them to take more initiative, in particular in planning their work and deciding how to go about solving complex or problematic cases.

At the start, all the participants were largely unfamiliar with information technology in general and microcomputers in particular. Several had never worked on computer systems aside from the office terminals, while a few had some word processing experience. They expected, therefore, to go through a certain period of learning and adaptation at the beginning of the project.

Two things distinguish the WAH project participants from the clerks who continued to work in the office. First, most of the remaining staff had held their positions for relatively short periods of time (ranging from 1.5 and 2.5 years). The clerks working at home had been doing the same work for much longer, which may, in part, account for their greater need for change. Secondly, unlike the participants in the WAH project, most clerks who remained in the office (five out of seven) lived on the island of Montreal<sup>3</sup>. Traveling downtown therefore did not pose the same problems for both groups.

All the employees who volunteered for the telework project lived off in the island of Montreal Island, so their savings in travel time were significant. In addition, all of them had been in their current positions for 10 years or more, and all said that they needed a change in their professional life if they were to remain motivated. As mentioned earlier, their career mobility was very limited. The only possibilities of advancement were positions requiring technical skills or supervisory positions. The project therefore offered a break with routine.

## OVERVIEW OF WORK AND PROJECT PROCEDURES

The work done by these specialized clerks involved in the project essentially consisted in performing of calculations on the basis of written documents. They must decide which regulations apply to each case. This part of the work was done manually, with the help of a calculator. The clerks consulted certain data using a microcomputer. In the office, this was done by means of a terminal linked to a mainframe computer. A new step involved entering the results using the microcomputer; they were then sent directly to the mainframe at the downtown Montreal office.

The participants had access to electronic mail, which enabled them to communicate among themselves and with the central office.

The participants went into the office once a week, on Wednesday mornings, to deliver the documents relating to cases dealt with over the past week to the coordinator or supervisor. At the same time, they picked up new cases to be processed, and a meeting was held between the participants, the supervisor and the coordinator. The participants could then leave or continue to work in the office.

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<sup>3</sup> The CSD offices are located in downtown Montreal.

The coordinator's position was created at the same time as the WAH project. The coordinator's main tasks were to distribute work to the employees working at home and to serve as a link between the home workers and the liaison officers responsible for relations with the employment centers. The coordinator also distributed work to the clerks who remained in the office. It should be noted that had the telework project not been established, a second supervisory position would probably have been created after the arrival of the new employees.

## **ADVANTAGES AND DISADVANTAGES PERCEIVED BY PROJECT PARTICIPANTS**

In general, the home workers were highly motivated; they wanted the project to succeed and to continue beyond the pilot-project stage. The advantages noted by the participants were significant enough that they were willing to accept disadvantages and make compromises. The compromises included the extra time some employees needed to meet their production quotas, the necessary learning and adjustment stage at the beginning, and the fact that their workstations were not as well equipped as in the office.

### Advantages Perceived by Home Workers

The project's main advantages as seen by the participants were as follows:

- greater control over their work schedules and, for some, over the planning of their work;
- reduced in transportation time and costs;
- lower work-related expenses (lunches, coffee breaks);
- a better or healthier work environment (air quality as compared with that at downtown and in the office, work schedules, etc.).

### Disadvantages Perceived by Home Workers

The disadvantages or difficulties of working at home as seen by participants were as follows:

- the adjustments required at the beginning of the project (adapting to the technology and procedures, developing new work habits);
- workstations considered inadequate by many (too small a work surface);
- in some cases, an increase in work time because of added data entry tasks and the desire

to increase production so that the employer would consider the WAH project to be cost-effective and therefore extend it after the six-month pilot project;

- less social interaction, mainly with colleagues who continued to work in the office;
- remote communication with the office (supervisor/coordinator, technical support staff, etc.) required adaptation that some people found difficult to varying degrees;
- in some cases, adjustments in relation to other family members (spouses, children).

It should be pointed out that the quality of the work area compared to the office could be either an advantage or a disadvantage, depending on the space available from one home to the next.

## **MAIN POINTS APPARENT FROM THE INTERVIEWS**

### **EFFECTS ON WORK AND WORK METHODS**

#### **Changes in Work**

Aside from calculating overpayments, the home workers used microcomputers to enter and transmit data. The main difference in the employees tasks was, the addition of data entry and transmission, which, according to some participants, required greater time and concentration. For about half of the home workers, this involved a few additional hours of work time per week. It should be noted that according to those in charge of the project, the additional work time was neither a goal nor a desired effect of the work-at-home project. The intention, rather, was to adjust production quotas so that each individual would put in a normal work week.

Since the participants received an entire week's work at the same time, they organized their work as they saw fit (i.e., they could decide to carry out certain tasks on certain days or at certain times of day). The tasks themselves had not changed, however.

#### **Perception of Work**

For some employees, working at home altered their perception of their work. They seemed to feel more responsible for the work to be done, and some said that they felt like both employer and employee. One participant recounted, for example, that employees were less concerned about delays caused by system failures when they worked in the office. This may be explained in part by

participants' fears that the project would be canceled if production dropped. Another worker said that having all the necessary reference materials at home made him more likely to consult them and to study changes in laws and procedures, etc. Moreover, this individual used leisure time rather than work time to update his knowledge. Participants generally considered that the materials supplies to them at home provided all the information they needed to do their job.

### **Changes in Work Methods**

From the point of view of the participants, flexible working hours was one of the most significant changes, and was a motivating factors well. They also considered that this flexibility helped improve both productivity and work quality.

The possibility of planning and organizing their own work went along with flexible work schedules. Employees could choose to work at times of day that were most convenient to them, and complex tasks could be carried out at the times they found the most suitable. The fact that they could plan and organize their own work was seen by many as a major advantage of working at home.

Rather than contacting the liaison officers directly, the employees working at home used electronic mail. A message would be sent to the coordinator, who would then contact the liaison officer and send him a printed copy of the message. Adjustments to this process were made during the first few weeks of the work-at-home project following a meeting with a representative of the liaison officers. A standard form and content for messages was established at that meeting, to ensure that all the necessary information would be provided.

## **PRODUCTION, WORKING HOURS AND ABSENTEEISM**

### **Production**

The production volume was the same as before the project and deadlines were met. All the participants met their production quotas, which had not always been the case before the project.

Maintaining this level of production did, however, require more hours of work from some employees, especially in the first few months. One participant attributed this to the greater workload that resulted from the additional tasks of data entry and transmission. This was

confirmed by another employee, who said he had been able to reduce his work time since the beginning of the project because he had become faster at data entry.

Other participants were able to maintain production quotas with approximately the same number of work hours as in the office, and in some cases slightly fewer.

It is interesting to note that, according to estimates from the Computer Services Division, the employees working at home had a productivity rate of 98.94% during the six months of the trial, while the employees doing the same work in the office had a productivity rate of 93.60%.<sup>4</sup> It is estimated that home workers processed 19.1% more cases over the six-month period than the office workers.

The quality of the work was evaluated at 94.18% for the home workers and 93.32% for the office workers<sup>5</sup>.

### Work Schedules

Work schedules varied from one employee to the next. About half maintained a schedule similar to that in the office, with adjustments as required. For example, if a worker had an appointment during the day the work day could be extended into the evening. One participant made a habit of working evenings in the summer in order to have his days free. In the fall he returned to a more conventional schedule, but continued to adapt it to personal and family needs.

Two participants varied their schedules depending on the days of the week. One did so in order to have some shorter work days, while the other did so to avoid worries about not meeting the weekly quota. Some participants worked split shifts. As a general rule, participants finished their working day by 6 p.m.

<sup>4</sup> These rates were calculated by comparing the number of stated hours required to process cases during the six-month pilot project with the number of hours needed according to official quotas. Adjustments were made to account for different number of workers at home and at the office : eight and seven respectively. Another adjustment was made to take into account the fact that the home workers had data entry and transmission tasks that the office workers were not required to do.

<sup>5</sup> According to quality-control measurements done on samples of processed cases.

## Absenteeism

For most participants, the number of days off taken because of sickness, leave or family obligations was relatively low. The number of days absence during the six months of the pilot project was lower for the eight project participants than for the seven office workers (33.3 days absence for the eight participants and 40.2 days for the office workers). For the same period in the previous year, the participants, who were then working in the office, had 104.75 days absence for the same reasons.

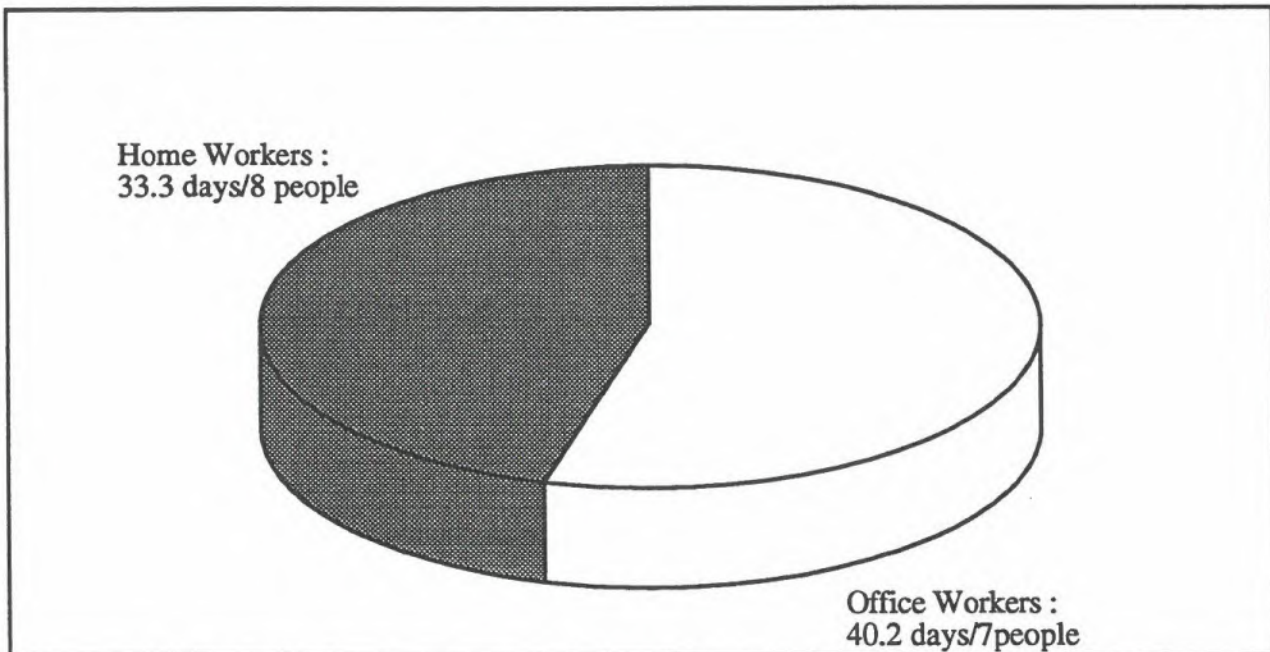


Chart 1 : Total Days' Absence : Comparison between Home and Office Workers

The following table compares the number of days' absence for each of the home and office employees. Note that in the case of home employees, the total number of days taken because of illness, leave and family obligations was boosted by one particular absence of some 20 days. Absences were distributed much more evenly among the seven employees in the office.



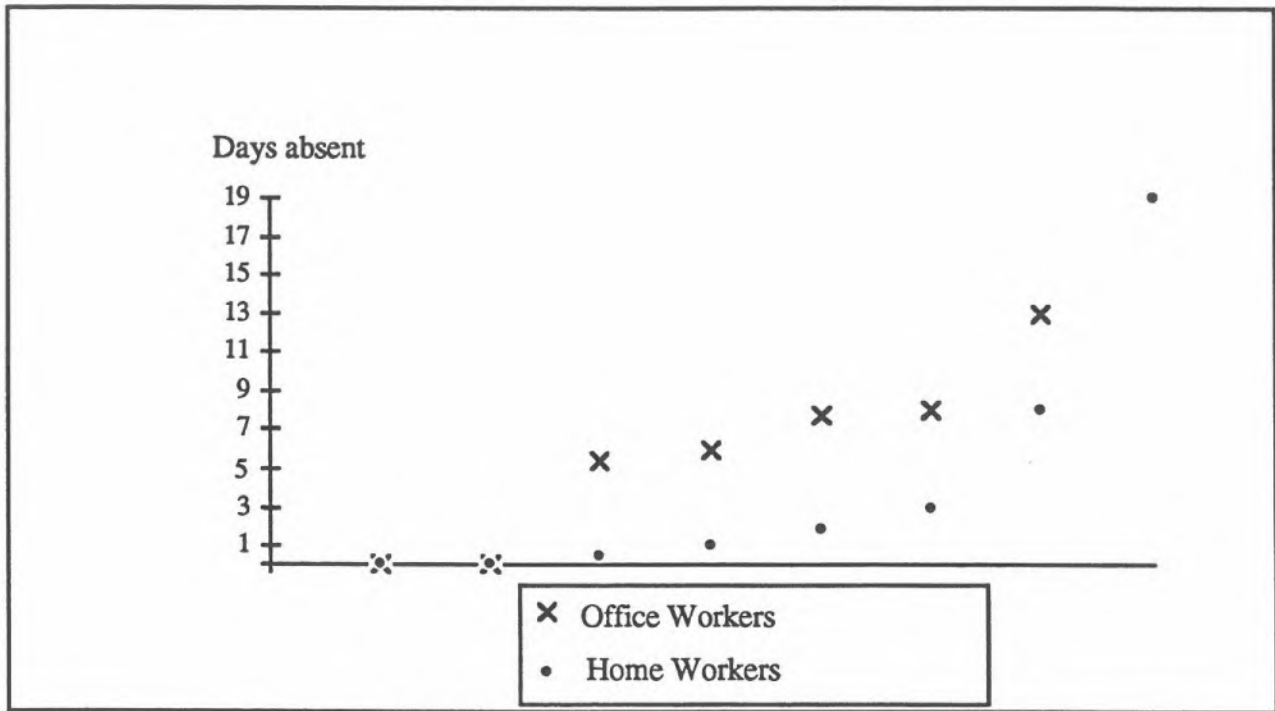


Chart 2 : Number of Days' Absence per Employee

## SUPERVISION

The participants considered that remote communication with the supervisor and coordinator worked well. If supplemented with periodic meetings in the office (once a week or as often as needed), it appeared to be a satisfactory method of coordination that could meet the needs of the home workers.

The only specific effect of distance supervision was the flexible work hours. Although not formally recognized, this flexibility resulted from the decision to monitor production quotas and quality rather than make any attempt to control working time as such. Concretely, this meant that while the office workers had to put in their normal work week (regardless of the number of cases processed), the home workers had a specific number of cases to process each week. The project participants therefore had greater flexibility in organizing their work and greater responsibility for carrying it out. Many participants saw this as a sign of confidence that they greatly appreciated.

## **Role of the Supervisory Team**

When the home employees worked in the office, they were responsible for filling out their own productivity reports, but during the project, this task was carried out by the supervisor. The coordinator also took over part of the work that has been done by the supervisor alone when all employees worked in the office. While the supervisor felt that the coordinator played an essential role, he felt that the exact duties of each member of the team needed to be clarified. Some of the employees expressed the same opinion.

Quality control was performed by a quality control officer, whose time was divided between both the home and office workers.

## **INFORMATION AND TRAINING**

### **Access to Information**

In general, the participants did not consider themselves to be any more or less informed than they were when working in the office. However, on days when the employees went into the office, certain documents and memos that were circulated had to be read quickly so that they could be passed on to all the project participants.

Important messages were to the participants by electronic mail or over the telephone (by either the supervisor or the coordinator). In one instance, however, a message concerning procedures took several days to be conveyed, which meant that some information had to be corrected.

The project participants were largely responsible for consulting the available information (bulletin boards, memos, etc.) on their own, as were the office workers.

### **Information on Telework**

The participants interviewed considered that they had received sufficient information on the project and on work at home in general. This information came mainly from three sources. First, the Treasury Board's draft policy on telework, which includes a series of questions and answers on telework, as well as a list of the possible advantages and disadvantages. Second, a document listing the advantages and disadvantages of telework from home that came from a federal

department that had been running a home telework project for several years. Thirdly, copies of articles from various business publications were distributed.

It would appear, however, that the immediate supervisor, who was hired after the main project preparations had been completed, lacked information both on the project and home work in general.

Little information about the project reached people not directly involved.

### **Training**

Training dealt mainly with the technical aspects of the project (see the following section). The participants also received a training session on ergonomics (i.e., setting up office furniture and equipment at home).

## **TECHNICAL ASPECTS**

During the second round of interviews (in the fifth month of the pilot project), participants considered that the system was working smoothly and that they felt comfortable with it. Some difficulties had occurred at the beginning of the project, however, linked mainly to communications procedures with the mainframe computer and to the users' limited experience with the system. Certain participants had added problems at the start of the project because one of the software packages was available only in English. Most participants required a period of adaptation, which ranged from a few days to a few weeks.

### **Technical Training**

All the participants agreed that the half day of technical training given at the start of the project was insufficient. The main deficiencies concerned the lack of practical exercises, as well as the fact that the training covered only part of the knowledge needed to use the new system. Follow-up training given after the project started, as well as technical support provided to the users (problem-solving, and case-by-case explanations) complemented the basic training. On the basis of this complementary training, as well as familiarity with the system gained in the first month of the project, the participants said that they had gained the necessary technical knowledge and could use the system effectively.

It should be noted, however, that the designers of the training deliberately chose a very restricted approach. Given the employees' lack of technical knowledge, it was felt that training that was either too far-reaching or too detailed would lead to confusion. It was thought better to limit the training to a course on the most frequent operations, relying on day-to-day support to complete the learning process. While the approach did have positive results, it would have been more effective if the participants had not been required to meet their production quotas right from the start. The users therefore were under more stress and were less inclined "to take risks" or make an effort to "teach themselves." With hindsight, the half day of theoretical training should ideally have been supplemented by a half day of practical exercises and more interactive activities, which would have enabled the trainer to ensure that the employees had fully understood what had been taught. Two or three weeks after the start of the project, a half-day follow-up session could have been held, again including practical exercises.

### **Technical Support**

All the participants were satisfied with the technical support available to them, and considered that sufficient resources had been made available. In general, the remote approach to technical support (by telephone or E-mail) was considered to be effective and appropriate. Circumstances were such, however, that support was not always available over the phone at the precise moment when it was needed, since the tasks of the technical support staff were not limited to supporting the home workers. From the point of view of the support staff, it was more difficult to provide support by phone, without visual contact, particularly when it was important to follow what the user was doing to ensure that the user was indeed proceeding as instructed.

Although the participants did get used to using E-mail to ask questions not requiring an immediate answer, the telephone remained the first choice for contacting the support staff.

### **SOCIAL INTERACTION WITH COLLEAGUES**

At the beginning of the project, during the first stage of data collection, most participants said that they had felt their relations with colleagues who continued to work in the office had deteriorated somewhat. Some attributed this to jealousy on the part of these colleagues, as the opportunity to take part in the pilot project had not been offered to everyone, others attributed it to the fact that the home workers caused a bit of disruption during their weekly visits to the office, and others to the

simple fact of not being in the office regularly, which changed certain habits and relationships, and resulted in a certain level of discomfort. It should be noted that a perceived or actual deterioration in relations with office colleagues is a commonly observed phenomenon in teleworking situations.

By the end of the pilot project, however, the strength of the participants' opinions on this issue had lessened. Only two people still felt there was a problem in their relations with colleagues in the office, while the others considered that the situation had resolved itself.

For their part, the clerks who had continued to work in the office said that they did not think there had been a deterioration in their social relations with the project participants. They felt either that relations had remained the same (four respondents out of seven), or that relations were neither better nor worse than before, just different (three out of seven). It should be noted, however, that people also pointed out that the project had not changed the social activities shared by certain colleagues outside office hours.

Most of the project participants communicated with one another by telephone or E-mail, often for professional reasons and sometimes for personal exchanges, but in both cases much less often than at the beginning of the project. On the professional level, many exchanges at the beginning of the project were requests for help for technical matters. As the participants became more familiar with the system, however, that type of information was no longer necessary. As far as personal communications were concerned, early in the project the novelty of electronic mail had stimulated its use (people wanted to "try out" the E-mail), but the use of the E-mail eventually eased off.

Some participants were less inclined to go out because they were working at home. Since they were not obliged to go out to get to work, they tended to become homebodies, developing more of an indoor lifestyle (affecting their way of dressing, activities, etc.). Some said that they felt somewhat isolated because they had less human contact during working hours; they nevertheless saw this as a minor drawback compared to the advantages of not having to go in to the office every day.

## OFFICE VISITS

The lack of work space in the office and the necessity of doing an entire week's printing at once posed certain problems during the project. The participants were later provided with printers at home, so these problems were largely solved. What was most appreciated was the opportunity to

meet with colleagues and speak with them. Meetings, which at first dealt mainly with technical questions and the use of equipment, later became more concerned with operational questions related to work content. It seemed useful to continue such meetings at a frequency that would be determined according to need. It was felt that the meetings provided access to information comparable to that available when working in the office.

The transport of documents<sup>6</sup> posed no problems to participants traveling by car, but was generally more difficult for those traveling by public transit.

### SITUATION AT HOME

Almost all participants eventually managed to balance their schedules according to their needs. At the beginning of the project, however, some participants had trouble following a balanced work schedule. Most said that at the beginning they had difficulty "detaching themselves from their work" and making a distinction between "home as workplace" and "home as residence." While some workers seem to have made this distinction successfully after five months working at home, others were still having some difficulty in doing so. For most participants, however, this does not seem to have been a real problem. Rather, it was an adaptation that occurred gradually.

Nonetheless, it should be noted that early in the project, some participants had to deal with fatigue, minor health problems, and mild family conflicts. (It is difficult, however, to isolate the precise factors behind these problems : stress linked to the new situation, longer working hours, schedules not adapted to individual needs, etc.)

All the participants saw the need to develop self-discipline concerning schedules and working hours, however.

### Isolation

Working at home did not seem to lead to major feelings of isolation. The following points were raised, however: one home worker felt isolated when there were breakdowns or problems with the computer system. Another missed colleagues, who were not seen as often. One participant often had the feeling of being shut up at home.

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<sup>6</sup> Each participant was provided with a briefcase and a wheeled trolley were provided to each participant.

The participants who expressed those feelings considered that the drawbacks were nevertheless outweighed by the benefits of working at home.

Some participants noted that they preferred working alone, without constant contact with others.

### **Relations with Family and Friends**

The effects on relations with family, neighbors and friends appeared to vary greatly from one person to the next, and seemed to be closely related to the specific situation and lifestyle of each individual. Some people saw appreciable benefits, while others had to make substantial efforts to adapt. Virtually all the participants had to adjust their work schedules in order to make a clear distinction between work and home life. It was, in fact, their perception of work that changed. It was no longer a clearly defined block of time in the day, but had become a group of activities that could be interspersed with others.

For some participants, the presence of other family members at home during working hours reduced their concentration, while for others it had no drawbacks.

In some cases, the families had to make adjustments. Essentially this meant understanding that, while the worker might be at home, he was nonetheless working.

### **Effects on Performance**

For some, working at home was less stressful than working in the office, while for others the opposite was true. The stress related to work at home seemed partly linked to fears of not meeting production quotas, and therefore jeopardizing the continuation of the project.

According to one person, the factors that had a positive effect on the quality of his work included being more relaxed and working in a context he considered more conducive to consulting reference materials. Another considered that his performance had improved because he could split the work day into several parts.

Some participants who had had health problems indicated that working at home reduced the effects of those problems and therefore enhance their performance.

Problems related to the technology and its use reduced performance, particularly during the first few weeks of the project.

One factor that helped performance (in terms of both quality and quantity) was the work environment: the lack of interruptions while working (colleagues, meetings, etc.) made it easier to concentrate and not waste time. As noted earlier, however, the presence of other family members during working hours hampered concentration in some cases.

### **Workspace in the Home**

All participants were satisfied with their workspace at home, which they felt to provided a much better working environment than in the office. Two participants who had set up their workstations in open rooms nonetheless mentioned that if the project continued, they would either move into a separate room or section off their workspace with a physical barrier.

The only problems noted were the limited size of the work table provided by the employer (the work surface was too small for processing the files) and, in the early stages, the lack of printers. Printers were provided to each participant in the fifth month of the project.



## CONCLUSION

In conclusion, we present the main strengths and the main weaknesses of the pilot-project, as well as recommendations presented by CITI to the CSD.

## STRENGTHS

The project had several strong points which contributed to its success:

- good project preparation in terms of the information supplied to the participants, the project agreement, and project procedures;
- the weekly meeting, which allowed for information updated and discussion of both project procedures and day-to-day work;
- flexibility and adaptability that made it possible to fine-tune the project as it went along;
- the autonomy of the participants in the areas of scheduling and organization;
- training on the **installation** of microcomputers at home.

## WEAKNESSES

A number of weak points were identified as well. The first two are the most important :

- the technical training was not sufficiently practical;
- there was no "breaking in" period at the start of the project with lower productivity requirements to give the participants time to adjust to the new situation and the new equipment);
- the furniture provided, especially the work tables, did not take into account the specific needs of each worker;
- there was a lack of microcomputers and work space for the home workers during their weekly visits to the office (Wednesdays);
- the immediate supervisor was not sufficiently informed about or involved in the project.

In addition, the participants would probably have benefited from a training session on work planning and schedules and on distinguishing between the home as "workplace" and "residence."

### RECOMMENDATIONS

- Keep project participation voluntary.
- Continue to hold weekly meetings for the purpose of providing the participants with information and enabling them to discuss problems, questions and expectations with management and other group members.
- Maintain the position of coordinator; this position should be eliminated only if the supervisor is able to carry out all of the coordinator's tasks without being overworked.
- Maintain the conditions that allow for the participants' autonomy in the areas of scheduling and organization.
- Plan for one or two workstations (with a computer) in the office that can be used by the home workers without inconveniencing other staff.
- Ensure that the home workers are quickly provided with any urgent information, particularly concerning work procedures.
- Ensure that **all** those concerned are well informed of the progress of the project and ensure good communication between them.
- Clarify the roles of all the persons involved.
- Inform other employees in the division about the nature of the project, the rationale behind it, and how it has evolved; attempt to strengthen links between the home and office workers.
- Make sure that workloads assigned are reasonable and that working at home continues to be appropriate for each participant.
- Maintain a flexible approach so that the project can be fine-tuned as needed.