Telework: A new way of working and living

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Telework is only ten years old. In this short time its capacity for redrawing the geographical and organisational boundaries of the traditional, centralised enterprise has been amply demonstrated. Telework combines the use of information and communication technologies with the concept of the flexible workplace. The positive consequences of the decentralisation and increased worker autonomy and mobility brought about by telework can be seen in higher levels of productivity, improved working-time arrangements and new employment opportunities for various categories of workers, potentially without geographical limits.

However, telework can also generate isolation and marginalisation, increase stress for the workers concerned and favour their exploitation. While it can radically improve ways of working and living, it can also reinforce existing labour market inequalities and even worsen the employment conditions and job security of workers in certain occupational and social groups.

In presenting a wide-ranging view of the status of telework in the world today, this article attempts to alert policy-makers, managers and workers to the enormous potential of telework. At the same time, it warns against the dangers of not being adequately prepared legally, technically and organisationally for this new form of work and for its consequences.

The article describes what telework is and how it is being implemented around the world. The reasons for using telework and the possibilities it presents of employment for the disabled and for workers in rural and isolated areas are then discussed, before questions concerning the legal status and working conditions of teleworkers are analysed. A brief outline is given of the positions adopted by certain workers' and employers' organisations regarding telework, as well as of various initiatives undertaken by governments to promote it. Finally, the article discusses how to ensure that telework becomes an instrument for improving the living and employment conditions of workers as well as for assisting enterprises and organisations to improve their productivity and efficiency. The possible role of the ILO in this regard is briefly considered.

* International Labour Office. In the recent ILO publication *Conditions of Work Digest: Telework* (Geneva, 1990, Vol. 9, No. 1), the authors provide more extensive coverage of the subject, particularly as concerns the case studies referred to in this article.

1. What is telework?

The term "telework" (or "telecommuting", "remote work", "distance work") has been used to cover a variety of situations:

Electronic home work. This most widespread form of telework is practised in the worker's own home, using new information and communication technologies. By comparison with traditional home work, it relies on an entirely different range of skills, forms of organisation and links with the central employer.

Satellite centres. These are separate units within an enterprise, geographically removed from the central organisation but remaining in constant electronic communication.

Neighbourhood centres. These provide electronic facilities which are shared by different users and belong to various enterprises or self-employed entrepreneurs. They are located near workers' homes and can also be used for other purposes, such as tele-education, teleshopping or leisure activities.

Mobile work. Professionals whose work involves travel can use electronic communication facilities to link up with their headquarters and to have access to electronic mail, data banks, etc.

A common definition is needed to cover the wide spectrum of situations encompassed by telework (from the individual working at home with a computer and a telephone, to extensive decentralisation within entire enterprises). The term "telework", in fact, is going through an evolutionary process, which has extended its original meaning of electronic home work to include more complex forms. Now telework is increasingly used to refer to different combinations of work in central offices, at customer sites, in satellite centres or at home.

One analysis of about 50 definitions of telework has shown that they rely on three main concepts: organisation, location and technology.[1] More than 60 per cent of these definitions are based on a combination of at least two of these concepts. Since remote work and the use of new technology imply organisational changes, telework may be defined as *work carried out in a location where, remote from central offices or production facilities, the worker has no personal contact with co-workers there, but is able to communicate with them using new technology.*

Within this broad definition, telework may be performed "on-line" (with direct computer linkage) or "off-line"; it may be organised individually or collectively; it may constitute all or part of the worker's job; and it may be carried out by self-employed workers or by employees.

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[1] A. de Beer and G. Blanc: *Le travail à distance: Enjeux et perspective, Une analyse documentaire* (Paris, Association Internationale Futuribles, 1985), p. 81.

2. The case for telework

Enterprise flexibility and cost savings. Despite the relatively high cost of communications equipment and problems associated with daily supervision and management, organisations are increasingly adopting telework because of the flexibility it offers in work organisation and production. Companies such as US WEST and Pacific Bell in the United States and the FI Group in the United Kingdom, which are involved in developing and marketing software and telecommunications technology, are particularly keen to lead the field in new applications and are therefore active in testing and using telework to increase their organisation's flexibility and efficiency as well as to enhance their image. Other companies, such as Chamberlains and Rank Xerox in the United Kingdom, which have been experimenting for some time with new forms of work organisation involving highly decentralised networking models, are using telework to support these arrangements. Companies also increase flexibility by employing teleworkers on different types of contract: some workers may have regular employment contracts with full benefits, while others are self-employed or are engaged during peak demand periods to work on particular tasks or projects.

The additional equipment and operating costs of telework are generally offset by savings made in overhead costs, especially in large cities such as London and Tokyo where the price of office space is soaring. In fact, a major aim of Rank Xerox's introduction of telework in 1982 was to cut the cost of the company's London office facilities, which were then calculated as 31 per cent of total costs.[2]

Productivity increases. Employers are impressed by the widespread consensus that large productivity gains result from telework. These are attributed to the lack of interruptions and improved concentration; increased motivation and job satisfaction; higher dedication and morale; and a higher energy level on the job due to the elimination of the wasted time and frustration of commuting.

A two-year pilot project on telework at New York Telephone, involving two dozen managers, reported productivity gains averaging 43 per cent per participant.[3] Teleworkers of Control Data Corporation in the United States noted productivity increases varying from 12 per cent to 20 per cent.[4] Preliminary findings on a pilot telework project launched in 1988 by the State of California indicate that state employees working at home have been rated by their supervisors as 3 to 5 per cent more effective than they would have

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[2] P. Judkins, D. West and J. Drew: *Networking in organisations: The Rank Xerox experiment* (Aldershot, Gower, 1986), p. 18.

[3] "The electronic cottage comes of age", in *Management Review* (New York), Vol. 73, No. 3, Mar. 1984, p. 4.

[4] D. Clutterbuck: *New patterns of work* (Aldershot, Gower, 1985), p. 132.

been if they worked from nine to five in the office.[5] In the United Kingdom, the FI Group claimed teleworkers' productivity was 30 per cent higher than that of in-house workers, while International Computers Limited (ICL) found that 25 hours of work in the home were equivalent to 40 hours in an office.[6]

Recruitment and retention of staff. Another important reason for introducing telework is to facilitate the recruitment and retention of skilled staff. Telework permits the retention of workers considering leaving, such as women after maternity leave and senior employees nearing retirement. It can also tap new labour sources among the home-bound and in economically depressed areas, especially where specific skills are in short supply. Finally, it is attractive to workers who are searching for better places to live or for alternative family, leisure and work arrangements. In other cases, by offering alternative telework options and thus reducing staff turnover, government authorities are attempting to find ways of providing more stable and effective services.

Jobs for the disabled. Employing disabled workers in telework operations has been shown to have competitive advantages. In the United States a pilot telework programme by American Express for disabled persons proved viable and cost-effective, and revealed a new source of highly motivated and competent workers. LIFT (an American non-profit organisation providing training at home for disabled persons under an agreement with future employers) reports a 100 per cent success rate for those who have completed training. The interest shown by enterprises is sometimes matched by public initiatives aimed at promoting employment for disabled persons.

In France, in 1984, the Ministry of Labour, Employment and Vocational Training and the Ministry of Post, Telecommunications and Space launched a project involving 11 major enterprises to enhance rehabilitation opportunities for disabled people through telework. Although since abandoned, this project has retained its impact in a number of the enterprises concerned.

Despite its potential and public support, telework for disabled people is not easy to introduce successfully. New technologies, although extremely flexible, have to be adapted and often readapted to the special needs of the disabled person. Telework for the disabled almost always requires a specific training programme, and further ad hoc training as technologies evolve.

Rural development. A recent idea is to use telework to create employment in rural and isolated areas and thus help reduce regional imbalances. This idea was sparked off by public initiatives to provide services not previously available in remote areas. The Commission of the European Communities has highlighted the potential of telework "to reduce the social

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[5] Bureau of National Affairs: *Current Developments – Daily Labor Report* (Washington, DC), No. 161, 22 Aug. 1989, pp. A-3/4.

[6] C. Curson: *Flexible patterns of work* (London, Institute of Personnel Management, 1986), p. 129.

and economic gap between urban and rural, central and peripheral regions and the need to move away from concentrating attention on the individual teleworker to encompassing the working group and the wider organisation or market".[7]

The first application to isolated regions of the opportunities offered by new information and telecommunication technologies has been the creation of "telecottages", centres in rural areas where information technologies are available to the local population for educational, business and leisure purposes. In addition, a number of local computer jobs are linked to the main computer in the telecottage. People carrying out these jobs may work at home but can join their colleagues in the telecottage if they prefer. Telecottages also offer services to small and large enterprises in their region, and even function as offices for certain small enterprises.

The Government of Sweden has declared the establishment of telecottages a top priority in its campaign for the economic development of rural areas. Plans are being made to establish telecottages in some developing countries, such as Benin, India, Indonesia, Nigeria, Papua New Guinea, Sri Lanka, the United Republic of Tanzania, and in several countries in Latin America.[8]

Reducing commuting time. Reducing or eliminating time spent on commuting is often cited among the main reasons for choosing telework. The County of Los Angeles, for example, views telework as a way of reducing traffic congestion and improving air quality. Experiments have been launched in Japan, where satellite centres were established in order to relieve traffic congestion in Tokyo, and in the Netherlands with the same end in view.

Working time flexibility for teleworkers. Finally, the rationale for the development of telework is reflected in the attitudes of the teleworkers themselves. For many, telework's flexibility is a key factor in their search for practical ways to reconcile their family responsibilities or styles of life with earning an income. In many cases, an added incentive is the significant reduction in time spent commuting. Teleworkers also often enjoy relative autonomy and the possibility of concentrating harder and being more productive away from office distractions.

For some, a worker's decision to perform telework may be a choice among a number of possibilities. For others, telework may well be the worker's only chance to earn an income. When conditions are less advantageous for the teleworker than for other workers performing the same type of job, the rationale for telework is sheer economic need.

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[7] Commission of the European Communities: *Opportunities for applications of information and communication technologies in rural areas* (Brussels, 1989), Annex A, Draft 4.

[8] H. Albrechtsen: *The tele-cottage: A world movement* (Vemdalan, Sweden, Foreningen af Informationsteknologiske Lokalcentre i Norden, 1988), p. 4.

3. Nature and extent of telework

During the 1960s and 1970s, enthusiastic predictions about homeworking with advanced technology were common.[9] More recently, however, forecasts have been mixed. In 1986 respondents to a survey on the long-term implications of information technology in the United Kingdom forecast a proportion of between 10 and 15 per cent of the skilled workforce engaged in telework by 1995, increasing to 15-20 per cent by the year 2010.[10] However, in the same year (1986) a forecast of working conditions in France for the year 2005 predicted that telework would not develop substantially.[11] Such divergences are not surprising for the concept of telework is not clear-cut and analysts use different definitions for their predictions. Furthermore, the pace of development of telework is determined by different, sometimes contradictory, factors.

Technological innovation is a leading factor in the development of telework. The availability of new technologies in the second half of the 1970s made telework an attractive alternative at a time of petroleum crisis and high commuting costs. The gradual reduction in the cost of electronic equipment, together with enormous improvements in its power, reliability and speed, has increased the importance of telework in the past decade. New electronic devices used for telework include computers (often as word processors) and telecommunications equipment which can be linked together in a variety of combinations and systems. Some of these systems, like telex, facsimile (fax) and electronic mail, are already in operation; others, like large-scale video teleconferencing, are more for the future. The move towards integrated services digital networks (ISDN) makes it possible to transmit information by telephone using a binary mode, which is the same used by computers. The introduction of optical fibres and satellite communication will further greatly improve the quantity, quality and speed of telework operations. The timing of these developments is difficult to forecast but the process should first involve the creation of networks across large (urban, regional) areas, to be followed by more localised networks and, eventually, by extended home networking.

Despite this potential, telework has not spread as rapidly as earlier forecasts predicted, partly because of technological constraints. The reduction in the cost of electronic equipment has not been matched by a reduction in the cost of telecommunication charges, which are still often based on volume, thus penalising the diffusion of telework. Different

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[9] See, for example, A. Toffler: *The third wave* (New York, William Morrow, 1980), pp. 210-223.

[10] National Economic Development Office (NEDO): *IT futures ... It can work: An optimistic view of the long-term potential of information technology for Britain* (London, 1987), p. 92.

[11] Commissariat général du Plan and Conseil national de la Recherche scientifique (CNRS): *Prospectives 2005* (Paris, Editions Economica, 1986).

networks are not always compatible and their integration is difficult to achieve.[12]

However, organisational and cultural factors seem to be the major obstacle to a more rapid and extensive adoption of telework.[13] Management may be reluctant to introduce telework because of its novelty and the problems of managerial control and supervision. Trade unions may hesitate to take firm positions on a phenomenon that is outside the context in which they traditionally operate. Workers may find it difficult to abandon a "familiar" working environment to face the challenge of new social and personal arrangements.

Nevertheless, some studies have provided evidence of increasing employee interest in telework. A survey carried out in 1984 involving more than 10,000 people in the Federal Republic of Germany, France, Italy and the United Kingdom indicated that out of an employed population of 90 million, 13 million would accept telework.[14] A British Telecom survey in 1987 calculated that a quarter of the workers whose jobs allow them to telework, and who are psychologically disposed towards doing it, were prepared to do so at home on a full-time basis and up to 50 per cent on a part-time basis.[15]

Recent years have also seen a certain expansion of "off-shore" telework (i.e. work performed in a different country from that of the parent company), which is due to several factors: the existence of suitable information technologies with compatible hardware and software; the presence of a flexible, often young workforce familiar with the use of such technologies; rising domestic costs and the availability of lower-cost labour off-shore; round-the-clock operations made possible by time differences across the globe; and the fact that operations of this type require little investment and allow for quick withdrawal. Future technological developments, however, could eliminate the need for certain types of off-shore operations, especially rather elementary tasks.

[12] On new technology and telework, see M. Brocklehurst: "Homeworking and the new technology: The reality and the rhetoric", in *Personnel Review* (Bradford), Vol. 18, No. 2, 1989, pp. 28-37; T. B. Cross and M. Raizman: *Telecommuting: The future technology of work* (Homewood, Illinois, Dow Jones-Irwin, 1986), pp. 91-187; C. Halary et al.: *Ordinateurs, travail et domicile* (Montreal, Editions Saint-Martin, 1984); NEDO, op. cit., pp. 43-59.

[13] M. H. Olson: "Telework: Practical experiences and future prospects", in R. E. Kraut (ed.): *Technology and the transformation of white-collar work* (Hillsdale, New Jersey, Lawrence Erlbaum, 1987).

[14] Commission of the European Communities: *Trends and prospects of electronic home working: Results of a survey in four major European countries*, FAST Series No. 20 (Brussels, 1987).

[15] British Telecom, Confederation of British Industry and the Henley Centre for Forecasting: *Development of teleworking: An economic and social cost-benefit analysis* (London, 1988), p. 51.

Geographical distribution of telework

The geographical distribution of telework largely reflects the diffusion of communication technologies in various countries. The United States leads in this area with numerous companies involved in telework experiments and a growing interest from the public sector. The United Kingdom follows with several initiatives in the private and public sectors. In France the Ministry of Post and Telecommunications initiated telework projects from the beginning of the 1980s, and an increasing number of private ventures are also using telework – primarily for professional activities rather than large-scale operations or clerical tasks. In Germany, a lively debate on telework and some significant plans for telework are not matched by actual experiments.

In Australia and Canada telework is still in its infancy but shows signs of growing, especially in Canada. A survey of 250 of the largest corporations there indicated that although some two-thirds of the 54 respondents used highly sophisticated technologies, only 21 per cent of these companies had implemented telework. However, nearly twice as many were either preparing for or were considering its introduction.[16]

Companies in the Netherlands have been exploring the possibilities of telework on a modest scale over the past decade, but now the Ministry of Traffic and Transport has launched an important trial to assess the potential of telework in reducing traffic congestion at peak hours. Experiments have also been carried out in Switzerland with a view to overcoming labour shortages and promoting the economic development of mountainous regions.

In Scandinavia telework primarily developed through neighbourhood centres and, especially in recent years, telecottages. In Sweden, where "home work" and "distance work" have a wider meaning, approximately 45,000 persons were estimated to be involved in telework activities in 1986-87.[17] In Finland telework is still rare but the first "remote work centre" (telecottage) has been established.

In Japan satellite offices are being established, particularly as an alternative to commuting in the congested Tokyo area.[18]

Examples of "off-shore" telework can also be cited. American firms use local workers for electronically linked data-processing and administrative tasks in countries such as Barbados, China, India, Ireland, Jamaica, the Republic of Korea, Mexico, and Singapore. Similar experiences are also

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[16] N. A. Salomon and A. J. Temper: *The use of telecommuting by large Canadian corporations: A preliminary report* (Windsor, University of Windsor, 1989), Working Paper No. W89-11, p. 3.

[17] Information provided by the Swedish Ministry of Labour and Paavonen Consulting in March 1990.

[18] Article on the Shiki satellite office, in *Nikkei Shimbun* (Tokyo), 1 Mar. 1990.

reported from Australian firms which have subcontracted data-processing to Singapore and the Philippines.[19]

Distribution of teleworkers by occupation and sex

The occupations for which telework is suited, primarily those that extensively use office technologies, can be divided into two major groups: clerical and secretarial on the one hand, and technical and managerial or professional on the other. This is a fundamental distinction because these two groups usually display quite different characteristics: a mainly female and often semi-skilled workforce in the first group; a skilled and largely male workforce in the second. Their bargaining positions, working conditions and employment status may differ greatly.

Within these broad occupational categories, there is a wide range of specific jobs using telework. Prime telework occupations identified in the United States include:

> travel agents, writers, salespersons (or catalogue order takers or reservation clerks), real estate agents, bookkeepers, computer programmers, lawyers, purchasing agents, accounting clerks, secretaries, clerical support, insurance agents, securities brokers (agents or salespersons), computer system analysts, accountants, engineers, counsellors (vocational or educational), personnel/labour relations (job analysts, applications processors), computer operators, bank officers (finance, credit), architects, word-processor operators, data-entry clerks, marketing managers, miscellaneous managers.[20]

In 1983 the Equal Opportunities Commission in the United Kingdom sought information about working with new technology from home: the kind of work individuals were undertaking, rates of pay, and other conditions. A limited response indicated that three-quarters were working at home in computer occupations. The majority were programmers and analysts (63 per cent), with computer consultants and clerical workers accounting for approximately 10 per cent each, followed by project managers, translators, writers and public relations specialists at around 5 per cent each.[21]

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[19] For off-shore operations of American companies, see Office of Technology Assessment: *Automation of America's offices, 1985-2000* (Washington, DC, National Technical Information Service, 1985), pp. 211-232. In particular for off-shore operations in Ireland, see D. Bradshaw: "Throwing a line into a remote pool of labour", in *Financial Times* (London), 1 Jan. 1989, p. 14; and Part II of ILO, op. cit. For Barbados, China, India, Mexico and Singapore, see F. Kinsman: *The telecommuters* (Chichester, John Wiley, 1987), pp. 151-152. For the Republic of Korea, see B. Berch: "The resurrection of out-work", in *Monthly Review* (New York), Vol. 37, No. 6, Nov. 1985, p. 45. For Jamaica, see Jamaica Digiport International in ILO, op. cit., pp. 108-110. For off-shoring from Australia to the Philippines and Singapore, see W. Dawson and J. Turner: *When she goes to work, she stays at home* (Canberra, Department of Employment, Education and Training, 1989), p. 63.

[20] M. M. Kelly: "The work-at-home revolution", in *The Futurist* (Bethesda), Vol. 22, No. 6, Nov.-Dec. 1988, p. 32.

[21] U. Huws: *The new homeworkers:New technology and the changing location of white-collar work* (London, Low Pay Unit, 1984), Low Pay Pamphlet No. 28, p. 30.

The distribution of telework occupations reflects broader social trends, particularly the disadvantaged position of the female workforce. Women are predominant in clerical and secretarial work; women account for up to 90 per cent of the part-time workforce; women usually bear the burden of child care and family activities. It is no surprise that women predominate in telework. However, a survey carried out in 1985 in the United States on a sample of 14,000 women homeworkers – although not necessarily teleworkers – indicated that the widespread public image of home-based working mothers was a myth. Half of the women who responded to the survey were in the older age groups.[22] Other surveys indicate that young single women use telework to secure a basic income so that they may devote time to study or creative work, and that unmarried professional women often turn to telework for the same reasons as their male colleagues. Interviews conducted in Australia in 1988 suggested that while many women adopted telework for reasons related to child care and domestic responsibilities, a significant number were motivated by broader considerations of freedom, convenience and flexibility as well as by the stimulus and a sense of achievement it gave them.[23]

Telework is sometimes seen as a way of reconciling work and child care, although companies such as Pacific Bell and Travelers' Insurance in the United States are adamant that working at home cannot and should not be so considered. In this context, the position of public authorities is also relevant. Telework, especially if it expands substantially in the future, is likely to become a central issue in the allocation of public resources for child-care facilities.

4. Working conditions and work organisation

The wide range of sectors, occupations and countries in which telework is found inevitably means an uneven pattern of pay and other working conditions. Much depends on the scope and type of telework; the organisational purpose behind its introduction and the legal status of teleworkers. New technology plays a role, but its influence should not be overestimated. Telework may benefit teleworkers by improving their time flexibility and enlarging their autonomy; it may also lower their pay, reduce their benefits and affect their health. The considerable potential for improvement to the working conditions of teleworkers waits upon how soon and how effectively problems are tackled.

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[22] K. E. Christensen: *Home-based work: Solution or problem for older working women?*, paper prepared for the 1988 Brookdale Institute Seminar on Advances in Applied Gerontology, Columbia University, 20 April 1988, p. 5. See also R. Moran and J. Tansey: *Telework: Women and environments* (Dublin, Irish Foundation for Human Development, 1986), p. 41.

[23] Dawson and Turner, op. cit., p. 63.

Remuneration and benefits

Teleworkers' level of remuneration and other benefits depend largely upon their employment status and their occupation. In large computer and telecommunications corporations and government agencies, where telework is most developed, the tendency is for teleworkers to retain the status of normal salaried employees and to have the same pay and conditions as are enjoyed by workers at central office. Alternatively, teleworkers may receive rates of pay equivalent to those paid on the local labour market for the same type of work. In certain cases where special skills are in high demand, for example financial editors, teleworkers are able to negotiate above average pay and benefits.

There are, however, important exceptions to this broad equivalence of pay and benefits. Research carried out in the United Kingdom by the Low Pay Unit in 1983 showed computer professionals performing telework to be earning between 19 and 29 per cent less than on-site workers performing similar activities. It also revealed that overtime compensation, which makes up a considerable proportion of many wage packets in the computer industry, is not usually paid to teleworkers.[24]

The main reason why some teleworkers are denied benefits is their classification as self-employed workers or independent contractors whereby fees for services are agreed upon or payment is by piece rate. When enterprises use telework to cut labour costs, particularly for data-entry work and text-processing, teleworkers may well receive lower rates of pay and lose benefits such as paid leave, sick pay and social security cover. Employers also save considerable sums on office space, electricity, equipment and on-site supervision, and through the cancellation of outside contracting services to do overflow work.

Relatively low wage rates are reported for workers employed in off-shore electronic or satellite-linked centres. For example, a United States off-shore telework operation pays Jamaican workers doing skilled data-entry work the minimum wage in their country, whereas in the United States a worker doing the same work would earn up to 12 times more.

Attempts to introduce flexibility in the production process to cope with fluctuations in demand sometimes result in different categories of teleworkers being employed by the same company, some as normal employees and others as temporary or part-time workers, with consequent differences in remuneration levels.

On the whole, and this is an important factor affecting the income of teleworkers, companies tend to provide the necessary equipment for teleworkers. However, some teleworkers, often freelance workers, have to purchase or hire their equipment.

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[24] Huws, op. cit., pp. 34-35.

Hours of work and the arrangement of working time

Teleworkers are not usually subject to a rigid working schedule but are free to choose when and for how long they wish to work and when to take a break. One survey of 46 home office workers (professional, managerial and clerical) in the United States found that people in all occupational categories took advantage of their flexible scheduling possibilities. Forty per cent of the interviewees started work at conventional hours between 7 a.m. and 9 a.m., and over half worked at night. In particular, programmers preferred working nights and off-hours when there was less demand on the mainframe computer.[25]

Protective legislation concerning the length of working time is very difficult to enforce for teleworkers, who may have difficulties trying to combine family and work duties. There may be pressure to work at night or at the week-end or for prolonged periods, in order to meet deadlines. Overtime, perhaps without compensation, may become habitual, and may take the form of additional, quite substantial work just to complete the "extra bit" which is required. At the same time, teleworkers may be asked to be on stand-by during peak periods, while being paid only for the hours actually worked.

Part-time work, which makes up a high proportion of telework, may meet the needs of special categories of teleworkers, such as women with dependent children. A survey carried out in 1983 in the United Kingdom showed that the average working week of teleworkers in the sample was 22 hours and 40 minutes.[26] Part-time work is often accompanied by productivity gains.[27] This may account for some of the increases in productivity which have been noted in connection with telework.

Many teleworkers do a full-time job, part of which is done at home and part at the office. This offers a number of advantages and helps to avoid the isolation, stress and demotivation that can be associated with full-time telework (see below). Such arrangements seem likely to be the dominant form of telework in the future. A survey carried out in the Federal Republic of Germany on the frequency and duration of office visits from this type of teleworker indicated that 19 per cent of the persons interviewed were present at their office several times a month, 19 per cent at least once a week and 24 per cent several times a week. The vast majority (89 per cent) of these visits lasted for more than one hour.[28]

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[25] J. M. Pratt: "Home teleworking: A study of its pioneers", in *Technological Forecasting and Social Change* (New York), Vol. 25, No. 1, Feb. 1984, pp. 1-14.

[26] Huws, op. cit., p. 33.

[27] J. E. Thurman and G. Trah: "Part-time work in international perspective", in *Conditions of Work Digest: Part-time work* (ILO, Geneva), Vol. 8, No. 1, 1989, pp. 3-28.

[28] W. Heilman: "The organisational development of teleprogramming", in W. B. Korte, S. Robinson and W. J. Steinle (eds.): *Telework: Present situation and future development of a new form of work organisation* (Amsterdam, North-Holland, 1988), p. 48.

Telework offers a completely new and, to many workers, very attractive opportunity to arrange their working time, leisure time and family activities to suit their own convenience, although the blurring of the distinction between time devoted to work and to other activities may also, without careful organisation, cause confusion and stress. In addition, teleworkers may enjoy the time made available by not having to commute. A quarter of workers in the European Community commute for more than an hour a day with significant negative consequences in terms of health and safety, energy consumption, pollution and wasted time. It has been estimated that 35 to 40 per cent of the commuting trips to central London are for jobs which could ultimately be carried out by telework.[29]

The impact on health and safety

Telework can significantly affect the physical and psychological well-being of the workers involved. By separating workers from their co-workers, telework may generate isolation and stress and have an adverse impact on their morale. A survey in the United Kingdom in 1983 reported that 60 per cent of teleworkers named isolation as the greatest disadvantage. Twenty-two per cent found it such a problem that they would prefer to work in a satellite office or neighbourhood centre.[30] When, in 1987, the Hudson's Bay Company undertook an extensive survey on the advantages and disadvantages of telework, the majority of the interviewees said that they would miss the stimulation of exchanging ideas with colleagues. The lack of day-to-day interaction may gradually isolate teleworkers from a professional as well as a social point of view and affect their career development.

Companies use a variety of approaches to compensate for isolation and to re-establish professional relationships. For example, in the United Kingdom, Rank Xerox Networking teleworkers continue to be included in departmental organisation charts and on relevant circulation lists; they are invited to departmental meetings, briefings and social functions; and they are listed in the company's telephone directories. A special association (Xanadu) has been established to exchange services, information and "to maintain contact with the parent company to the mutual benefit of both parties". Eliminating isolation is not, however, seen as the final aim, because it is feared that this might destroy the feeling of independence which is the basis of much personal motivation.

Neighbourhood work centres and satellite offices are another response to the isolation experienced by teleworkers. However, neighbourhood centres are few in number and sometimes unsuccessful despite their

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[29] L. Pickup and V. Di Martino: *Commuting: The European dimension* (Dublin, European Foundation for the Improvement of Living and Working Conditions, 1987), p. 74.

[30] Huws, op. cit., p. 48.

potential, although the number of satellite offices close to workers' homes is gradually increasing.

The introduction of a combination of telework at home with work at the central workplace can also alleviate the problems of isolation. This combination allows workers to share their experience, keeps them in contact with their organisation and better defines their status within a broader working environment.

Telework also normally involves the use of visual display units (VDUs). As with other types of new technology, VDUs have aroused intense debate and often controversy over the implications for workers, particularly the risks to health. Although relatively few countries have passed laws or regulations referring specifically to VDUs, several have recommended codes of practice or guidelines for their use. These cover a variety of issues, such as advance notice, consultation and negotiation procedures with workers or their representatives, training, job design and job security, rest breaks, maximum VDU use, protection during pregnancy, eye care, and machine and workstation specifications.[31]

Adequate levels of safety and health protection for teleworkers may be jeopardised by difficulties in carrying out inspections. The access of public authorities to private homes may be limited. However, telework contracts sometimes include special clauses allowing inspections. For instance, a written agreement between teleworkers and the County of Los Angeles specifies that the work space in the home must be maintained in safe conditions, free from hazards and other dangers to the employee and equipment, and provides for inspections to guarantee that these conditions are met.

The combination of work, family and leisure activities at home may create dangerous situations.[32] Zoning restrictions in most countries limit the use of the home as a workplace, but telework may easily go undetected. There is increasing interest in preventive approaches to the design of new houses for home-based teleworkers and in the adaptation of existing premises to their particular needs. Preliminary studies suggest that the workplace should face outwards to give teleworkers access to more stimulating views, thus diminishing their feeling of isolation; that, for psychological reasons, it should be physically separate from other areas of the home; that it should be as close as possible to the front door to minimise visual or physical contact with private areas of the house; and that telephone facilities should be organised in such a way that the needs of teleworkers and of their families do not conflict. Such measures could be complemented by information on the importance of ergonomically satisfactory workstations,

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[31] For an analysis of the provisions contained in these instruments, see *Conditions of Work Digest: Special issue on visual display units* (Geneva, ILO) Vol. 5, No. 1, 1986; and ILO: *Working with visual display units* (Geneva, 1989), Occupational Safety and Health Series No. 61.

[32] V. Di Martino: "Salute e qualità della vita: La dimensione casa in Europa", in *Difesa Sociale* (Rome), No. 1, 1988, pp. 49-57.

appropriate lighting and ventilation, and other measures to ensure safe and healthy workplaces.

Changes in work organisation and managerial style

A company operating with teleworkers has to find innovative solutions to: completely new organisational problems, such as supervising, co-ordinating and motivating a dispersed workforce; challenges to traditional hierarchical functions and to the principle of authority; the by-passing of the role of middle management; and other problems of communication, dialogue, feedback and loyalty to the company.

Rank Xerox in the United Kingdom has indicated that work organisation for telework should have at least six features. It must: be adaptive rather than rigid; involve considerably lower overhead costs; enhance individual contributions; enhance creativity; relate to an organic whole and ensure people's participation; and motivate the production of quality work.[33]

Various changes in managerial style have been suggested as appropriate to telework: from management based on "before-the-fact approval" to management based on "after-the-fact review"; from a "think-and-run" philosophy to a "think-through-the-work" approach; and from "external control", based on formal procedures and formal measures of output, to "internal control" giving teleworkers all the tools they need to check their own work. In other words, telework requires a management system that supervises the output (results of work) rather than the input (ways of working, working time, etc.), concentrating on decentralisation and involvement rather than centralisation and control.[34]

New technologies may play a major role in this respect. They may be used to increase control and work pressure by monitoring keystrokes and error rates; to enforce machine pacing, machine scheduling and delivery deadlines; and to undertake electronic "surveillance" and monitoring of the work process itself. However, the direct links involved in this monitoring may lead to problems when enterprises need to guarantee the confidentiality and security of some of the information processed.

But they can also facilitate decentralisation, communication and dialogue with teleworkers and increase trust, loyalty and employee responsibility. As new technology may be handled in a number of different ways, the final approach to organising telework will depend on company and managerial strategies.

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[33] Judkins, West and Drew, op. cit., p. 6.

[34] See L. Bailyn: "Freeing work from the constraints of location and time", in *New Technology, Work and Employment* (Oxford), Vol. 3, No. 2, Autumn 1988, p. 151; C. A. Hamilton: "Telecommuting", in *Personnel Journal* (Costa Mesa), Vol. 66, No. 4, Apr. 1987, p. 95; M. H. Olson: *An investigation of the impacts of remote work environments and supporting technology* (New York, Center for Research on Information Systems, New York University, 1987), pp. 7-24.

5. The legal status of teleworkers

Of major importance to the determination of working conditions is the nature of the relationship between teleworkers and their employers. Is the teleworker an employee or a self-employed worker? Does legislation concerning home work apply to telework carried out at home?

An overview of labour law in countries where telework exists shows that there is no clearly defined legal status for teleworkers and indeed there is no specific legislation on telework in any country. However, the status of the teleworker is under debate in legal circles and recent case law has shed some light on the question.

Home work legislation and telework

In most countries special protective legislation for homeworkers is normally limited to manual work done at home and as such it does not apply to teleworkers. One exception is Germany, where the Homework Act *(Heimarbeitsgesetz)* applies to all forms of work at home. In the ongoing debate amongst legal experts it is argued that relatively simple off-line telework has the same characteristics as industrial home work. Teleworkers, like homeworkers, organise their own work and working time, although they are not considered to be fully self-employed, as they are not exposed to commercial risks and they work for employers and not directly for the market. A decision by the labour court of Munich in 1984 tends to support this view. The case concerned two women who had rented word processors from a company and worked at home for the same company without fixed-term appointments and without quantitative restrictions on their performance. The Court ruled that they were subject to the Homework Act.[35] On the other hand, it has been argued, on-line teleworkers who are subject to the direct supervision and control of the employer should be considered normal employees and as such are not covered by the Act. Teleworkers in satellite offices should also be excluded for the same reasons.[36]

In Japan, electronic text-processing at home is not covered by the Industrial Home Act, except in special cases (e.g. where the workers receive "materials" such as floppy disks to be processed), but a recent report suggests that administrative guidance should extend the protection provided by this Act to teleworkers.[37]

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[35] See P. Wedde: "Bringt Telearbeit die neue Rechtlosigkeit? Uberlegungen zur rechtlichen Einordnung einer neuen Arbeitsform", in Deutscher Gewerkschaftsbund: *Telearbeit: Elektronische Einsiedelei oder neue Form der persönlichen Entfaltung?* (Hamburg, 1988).

[36] W. Kilian: "Do we need legal protection for remote work (terminal-homework)?", in A. Olerup, L. Schneider and E. Monod (eds.): *Women, work and computerisation: Opportunities and disadvantages* (Amsterdam, North-Holland, 1985), p. 152.

[37] Report of the Research Council on Work Engagement at Home, submitted to the Director of the Women's Department of the Japanese Ministry of Labour on 8 February 1990.

At present only Switzerland is discussing extending its Homework Act to teleworkers. The feasibility of such an extension is, however, widely debated in Western Europe by legal experts.[38] It has been noted that although telework can be compared to home work in some respects (location of the workplace outside the enterprise, problems related to isolation, problems in enforcing protective legislation), in other respects it is different. Teleworkers have more direct links with the employer than do homeworkers. Although the latter are usually given instructions before they start working and their output is inspected on delivery, there is no direct control over their work during its execution, which is not always the case with telework. Given the complexity of the categories of telework, it cannot therefore simply be affirmed that telework is a new form of home work. The application of home work legislation to teleworkers would depend on the type of telework, particularly whether it is performed on-line (with possibilities of direct monitoring) or off-line (as in the case of simple text-processing at home).[39]

Subordination and telework

The relationship of teleworker to employer can be ambivalent. Certain conditions are similar to those of self-employed contractors because the workplace is located away from the company and work is performed more or less autonomously. On the other hand, teleworkers are dependent on the work given to them by the employer and they are also subject to the employer's authority in areas such as output. If the relationship between an employer and a teleworker is clearly recognised on both sides as one of subordination, then the teleworker is clearly entitled to the same working conditions and social security coverage as other workers in the enterprise. He or she is entitled to the same dismissal procedure, sick pay, unemployment benefits, paid leave, minimum wage, etc. However, if the relationship is formally one of self-employment, but in fact the work involves substantial elements of subordination, the teleworker runs the risk of being deprived, without justification, of employment rights and social protection.

In the United States the concept of dependence is critical for determining contractual status. The courts have referred to certain criteria for its evaluation :

> *Control* – does an individual exert such a control over a meaningful part of his or his business life, that he or she stands as an independent party? . . .;
> *Opportunity for profit or loss* – does the individual control major factors that determine profit, such as price, location advertising and volume? . . .;
> *Investment* – is risk capital involved? . . .; *Permanency* – can an individual be

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[38] See European Foundation for the Improvement of Living and Working Conditions: *New forms of work, labour law and social security aspects in the European Community* (Dublin, 1988), p. 86; S. Peles: "The legal aspects of home-based telework in Belgium", in *Labour and Society* (Geneva), Vol. 11, No. 1, Jan. 1986, pp. 83-96; H. H. de Vries: "Legal aspects of telework: The Dutch experience", in F. van Rijn and R. Williams (eds.): *Concerning home telematics* (Amsterdam, North-Holland, 1988), p. 441.

[39] Wedde, op. cit., p. 18.

shown capable of taking his or her operations – something more than labour – elsewhere? . . .; *Skill* – who contributes business acumen and initiative? . . .[40]

However, when it comes to the actual application of general criteria, the element of dependence is difficult to ascertain.

In Japan, with the exception of satellite centres, which operate on-line, and of a limited number of situations where teleworkers are "assigned" at home but maintain their full employment relationship with the enterprise, most teleworkers do not have a clearly identifiable status. In 1985 the Japanese Committee of Experts on the Labour Standards Law submitted a report to the Minister of Labour which, inter alia, touched on the application of the Labour Standards Law to the new types of work relationships. In this connection, the Committee stressed the importance of the element of subordination (work control and supervision, remuneration corresponding to labour input) and other related factors.[41]

In December 1985 a case illustrating the consequences for employees of telework arrangements and factors relevant to the determination of their status was filed with the California courts against an insurance company. In 1983 the company concerned had offered some of its insurance claims processors the opportunity to work at home; a number of women had resigned, given up their employee status and entered into an independent contractor agreement with the company. Their work then consisted of processing claims through a computer terminal leased to them by the company under direct supervision through memos and telephone calls. The company reserved the right to terminate the agreement in the event of a conflict of interest. The case focused on the determination of whether the women had remained employees, with the company maintaining that the women were operating as independent contractors and responsible for their own social security contributions, and the women claiming their work was that of employees and therefore that the company was liable for such expenses. In January 1988 the company dropped its telework programme and in May an out-of-court settlement was reached between the parties.[42]

A number of practical problems could arise in the enforcement of protective legislation designed for workers in an enterprise, if it is applied to telework. For example, a special system for controlling working time would be needed, if legislation on working time were applied to off-line teleworkers

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[40] D. Elisburg: "Legalities", in *Telematics and Informatics* (Elmsford, New York), Vol. 2, No. 2, 1985, p. 182.

[41] Press release by the Japanese Ministry of Labour, 19 Dec. 1985.

[42] R. Mackenzie: "Written statement submitted in conjunction with testimony before the Employment and Housing Subcommittee of the Ninety-Ninth Congress of the United States", in US House of Representatives: *Pros and cons of home-based clerical work*, Hearings before the Subcommittee on Employment and Housing of the Committee on Government Operations, House of Representatives, Ninety-Ninth Congress, Second Session, 26 Feb. 1986 (Washington, DC, US Government Printing Office, 1986).

at home. The question does not arise for on-line telework because it is possible to cut off access to the central computer during break times or at the end of the legally established working time. With regard to safety and health protection, labour inspectors could be denied access to the workplace and computers of the teleworker on the grounds of protection of privacy and the inviolability of the place of residence.[43]

It has been suggested that collective agreements, because of their greater flexibility, are particularly suited to regulating the labour conditions of teleworkers.[44] The University of Wisconsin's Hospital and Clinics and the American Federation of State, County and Municipal Employees reached an agreement in 1984 to allow a small number of employees doing word-processing to work in their homes. The agreement covers all aspects of home work, including safe and comfortable working conditions in the home, realistic work standards, access of the union to its members, and methods by which employees may opt in or out of the home work programme. However, the fact that teleworkers are often not affiliated to a union and that some unions adopt a cautious attitude to telework, limits the negotiation of collective agreements.

In Australia, where the conditions of employment are generally established under legally enforceable "awards", individual employees are unable to seek award coverage. For award coverage to be extended to teleworkers, a union must apply to the appropriate industrial tribunal to have a relevant award extended or a new award determined, but at present teleworkers are not covered by a specific award.[45]

6. The positions of employers' and workers' organisations

Employers' and workers' organisations vary considerably in their attitudes to different forms of telework. Telework at home is generally regarded negatively by trade unions while employers adopt a more positive stance. Broader areas of consensus exist on the development of collective forms of telework, such as satellite centres and working time shared between the home and the office. For trade unions, this implies that the teleworker is more likely to retain employee status and corresponding pay and benefits, while for employers such arrangements pose fewer problems in terms of supervision, management and data security.

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[43] Wedde, op. cit., p. 20.

[44] Ibid.; de Vries, op. cit., p. 447; Peles, op. cit., p. 91.

[45] Information received from the Australian Department of Industrial Relations in March 1990. The Federated Clerks' Union has expressed an interest in extending award coverage to home-based clerical workers. This could protect the conditions of work of a significant number of teleworkers.

Employers

Rather than formulating "official" positions for or against telework, employer groups tend to analyse the implications for employers, workers and society as a whole. These analyses usually lead to a positive appreciation of telework, for experience so far indicates that employers are likely to benefit from its introduction. Despite the still relatively high costs of telecommunication, employers can expect increased productivity; increased labour flexibility; retention of skilled staff; less absenteeism; reduced office space costs; and, under certain conditions, lower wages and the elimination of social security costs.

The Confederation of British Industry (CBI), in identifying benefits to the employer from telework, points to the reduction of fixed costs such as central office space. It says that "personnel overheads can be cut if freelance contracts replace direct employment" and that "salaries can be cut as commuting costs for staff are reduced". The CBI cites estimates of increases in productivity ranging from 30 to 100 per cent due to fewer interruptions, and improved concentration, dedication, morale and flexibility. It also refers to the advantage of having a "larger pool of labour to recruit from as employers can take on disabled people and mothers with small children".[46]

Despite these advantages, the slower-than-anticipated diffusion of telework is due in part to the hesitations felt by some employers. Employers are not always able or willing to develop the new management styles and supervisory techniques required by telework. Another problem for employers is that of data protection and security. In the case of the United States Army, despite the positive results of a pilot telework programme, telework was not adopted owing to concern about the risks of fraud or abuse.

Trade unions

As telework began to spread in the early 1980s, the initial attitude of workers' organisations was very cautious. Telework was perceived as a modern form of industrial home work, which is traditionally associated with low wages and substandard working conditions. Trade unions feared the fragmentation of the workforce with the consequent isolation of teleworkers, making them particularly vulnerable to exploitation and at the same time difficult to organise. This apprehension resulted in the adoption of positions opposing telework, with some unions calling for its legal prohibition.

In 1986 the Congress of the German Confederation of Trade Unions (DGB) adopted a resolution advocating a law to prohibit electronic home work. Stating that electronic home work weakens the protection of workers' rights and undermines worker participation at the enterprise level, the resolution called on the DGB to use all means to protect workers against its negative consequences.[47]

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[46] Information reported to the ILO in February 1990 by the CBI.

[47] DGB: *13. Ordentlicher Bundeskongress, Hamburg, 25-31 Mai 1986: Parlament der Arbeit-DGB* (Düsseldorf, 1986).

In 1983 the American Federation of Labor-Congress of Industrial Organizations (AFL-CIO) called for "an early ban on computer home work by the Department of Labor as a measure of protection for those workers entering the market for the fastest-growing occupation in the United States". It argued that "homework has historically led to worker exploitation" and that "the piecework nature of computer work increases the risk of employee exploitation". It claimed that "leaving the home computer industry unregulated will have a devastating impact on the well-being, wages, hours and working conditions of homeworkers. Moreover, the enforcement of wage, hour and safety standards in the home is absolutely impossible."[48]

More recently, the relatively slow evolution of telework and the involvement of various categories of workers (from highly qualified and highly paid to semi-skilled and poorly paid) has led trade unions – while still critical – to take a more moderate and watchful approach. In the past few years, the action of a number of trade unions has consisted largely of producing discussion papers or documents examining the nature and extent of telework and listing its advantages and disadvantages.

Guidelines published by the French General Confederation of Labour-Workers' Force (CGT-FO) point to the lack of information on the impact of telework and state that at this stage it is only possible to identify present advantages and disadvantages. The former include saved commuting time, a more agreeable atmosphere achieved in small work groups and fewer apparent hierarchical constraints; but these are outweighed by disadvantages such as isolation, fragmentation of work, erosion of the work community and limited contacts with trade union representatives. Further analysis on which to base appropriate responses in the future is needed.[49]

The Swedish Central Organisation of Salaried Employees (TCO) produced a report in 1987 which identified the advantages and disadvantages of telework and outlined the conditions under which it was acceptable. Telework should only account for a certain proportion of working time and should be voluntarily accepted by the employee and approved by the local union. The employee should be able to plan and control that part of the work performed at home and should have a permanent workstation in the main workplace. The work contract, career opportunities and remuneration should be the same as those of other workers in the main workplace; the employer should accept responsibility for the costs (including running costs) of the equipment used in the home of the teleworker, as well as liability for any damage to the enterprise or a third party; and the safety representative should have the right to inspect the home workstation.[50]

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[48] Cited in National Research Council: *Office workstations in the home* (Washington, DC, National Academy Press, 1985), pp. 152-153.

[49] Confédération générale du Travail-Force ouvrière (CGT-FO): *Guide CGT-FO: Edition 1987* (Paris, 1987), pp. 132-133.

[50] Tjänstemännens Centralorganisation (TCO): *På lagom distans: För och emot distansarbete* (Stockholm, 1987), pp. 32-33.

In other cases trade unions are calling for consultation and participation of unions in all planning and decisions connected with the introduction of new technologies in general and telework in particular. In 1988 the General Secretary of the British Trades Union Congress (TUC) indicated that the TUC was not against new technologies and telework as such, but wanted consultation and a voice in decisions and choices. While it was important to recognise the dangers associated with telework, such as lack of employee status, lower pay, longer hours and isolation, there were benefits for employment creation, especially in inner cities, remote rural areas and in the electronic industry itself.[51]

Trade unions are hindered in their efforts to adopt definitive positions on telework by its links to other crucial issues, such as the introduction of new technologies, industrial restructuring, flexible working arrangements, unemployment, child care, part-time work, employment openings for women workers and equality of opportunity in employment.

7. Government initiatives

Government involvement in telework activities at national, provincial or local levels ranges from the commissioning of studies for policy purposes to the actual introduction of telework in government departments and agencies.

Investigation of the extent, nature and effects of telework has been undertaken by a number of governments. In 1985 a small-scale survey commissioned by the Ministry of Labour in Japan reported on the equipment used, the type of work performed, the employment relations and sex of those doing telework, and levels of remuneration. The survey found that telework mainly involved clerical work performed by women employees working part time.[52]

In Finland a Remote Work Committee published its findings in 1990 after two years of investigation into developments and trends related to home work and telework. The report predicted that telework would not increase greatly over the next few years although there would be some growth of part-time telework. The most significant factor in any increase in remote work would be a shift from its being performed as overtime to being part of normal hours. Only certain wage-earning groups would be affected, particularly those at senior and middle management level, technical experts, designers and those using information technology in their jobs. Remote work would not create new work forms or a significant increase in jobs in the near future.[53]

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[51] Speech by the TUC General Secretary to British Telecom/Confederation of British Industry conference on "Tomorrow's workplace: Harnessing the challenge of telework", 14 September 1988.

[52] M. Nitta: "Current state of the home duty work system in Japan", in *Japan Labour Bulletin* (Tokyo), Vol. 25, No. 2, Feb. 1986, pp. 6-8.

[53] Information provided to the ILO by the Finnish Ministry of Labour, March 1990.

In some cases government studies of telework have involved experiments to test its feasibility. In Germany the state Government of Baden-Württemberg commissioned a two-year pilot study in 1984, under which decentralised workplaces using teletex were established in homes, neighbourhood offices and branch offices with the participation of private enterprises and government departments. Those employed were mainly home-bound women and disabled people. The conclusion was that telework for text-processing would not become widespread in the immediate future owing to technical limitations and the higher costs involved.

A project on remote work units by the Department of Trade and Industry in the United Kingdom, which aimed at testing the use of telework as an employment "enabler" for home-bound disabled people, encountered difficulties in identifying sufficient suitable employers, but nevertheless provided disabled people with new job opportunities and the possibility of retaining employment after a disabling accident or illness.

Scandinavian countries are actively promoting telework through telecottages. The Nordic Council subsidises an association of telecottages created in 1985-86. By 1989 the Government of Sweden, aiming to help sparsely populated areas to compete in the new technological society, was providing financial support to 41 telecottage projects.[54]

A number of government agencies and departments are introducing telework programmes, most of which are experimental. The State of California initiated a five-year telework pilot programme in 1985 for its employees, covering telework at home and from satellite offices near the homes of workers. An interim report indicated that with appropriate training and the support of senior management, telework offered such advantages as increased productivity, retention of skilled staff and mothers of young children, savings in office and parking space, and less absenteeism.

The Government of the United States launched a year-long experimental programme in July 1990 to increase the numbers of federal employees working from home, and at about the same time the Ministry of Traffic and Transportation in the Netherlands began a nine-month telework experiment involving 30 employees. The primary aim here was to examine the viability of telework itself which might then contribute to reducing traffic congestion during peak hours.

In some cases government initiatives have gone beyond investigation and trials to the adoption of a formal policy and full implementation of telework programmes. The County of Los Angeles, California, introduced a telework programme in 1989, without an initial pilot period, on the grounds that the positive results of existing research and experiments provided sufficient justification. The programme was introduced for County employees for the perceived benefits it could provide to management, employees and the community in general. Currently, there are 300

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[54] Information provided to the ILO by the Swedish Ministry of Labour, March 1990.

teleworkers from 15 or so departments in the County working at home on an average of two days per week.
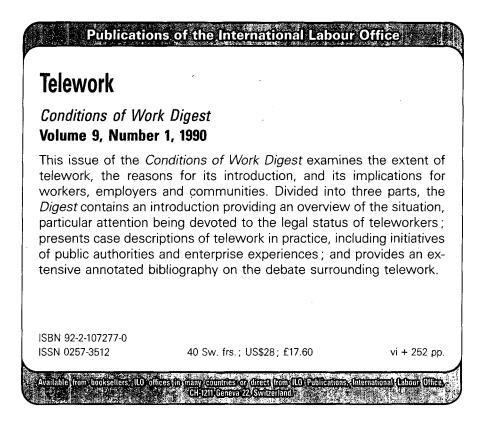
Conclusions

Telework can dramatically change the working and living patterns of the millions around the globe employed in the information industry, which has experienced very fast growth in recent decades. Central features of this new style of work and life are increased flexibility, autonomy, responsibility and productivity but also increased risks for the workers concerned. The crucial issues which need to be addressed rapidly and where a new balance must be found are: centralisation and decentralisation of work; workers' protection and job creation; the reduction of commuting and traffic pollution as against the fragmentation of the workforce; cost saving and fading company identity; reduced energy consumption and increased complexity of technological infrastructures; working time, family and leisure time; new work opportunities for women and the disabled, as against the increased marginalisation of certain categories of workers.

Governments can influence the speed at which telework spreads by actively promoting it in connection with rural development and creation of jobs, as well as by implementing new policies in regard to the continuing high cost of telecommunications. Workers and employers need to weigh up more precisely the options offered by telework. Managers are often still sceptical about the benefits of telework when compared with what they perceive as constraints, such as difficulties in control and supervision of teleworkers accompanied by decreasing loyalty to the company. Trade unions are worried about possible negative implications for job security, for their union strength and the spreading of precarious work.

As telework is not developing as fast as foreseen there is still time to reflect on the ways in which it can most usefully be organised and developed. One model which makes the most of what telework has to offer while simultaneously minimising its disadvantages is a combination of telework at home with work in the main or satellite office. This enables workers to maintain contact with their co-workers and reduce isolation problems. It is also more likely that such an arrangement will provide teleworkers with the same rights and benefits as normal employees of the enterprise. Management at the same time can more easily exercise supervision of the activities of teleworkers, as well as limit possible resistance from trade unions.

It is essential therefore that during the 1990s, and before it is too late, sufficient thought be given to the implications of the large-scale spread of telework for working conditions and the organisation of enterprises. In this regard, the ILO can certainly play a role in promoting analysis and discussion on how to direct the development of telework to the benefit of the parties concerned. Codes of practice or international guidelines could be designed to provide organisational flexibility for both managers and workers, while

ensuring adequate legal and social protection for teleworkers. In keeping with the mandate of the ILO as a tripartite organisation, workers' involvement could play a central role in the development of an international standard.[55] Information and awareness-raising activities (for instance international seminars on telework, pilot studies, etc.) could further engage discussion between all the parties concerned on future telework scenarios and on the suitability of various combinations of technology and human resources and how they may best be managed and organised.

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[55] Workers' involvement in technological change has been dealt with in several ILO instruments such as Convention No. 158 (1982) and Recommendation No. 166 (1982) concerning termination of employment at the initiative of the employer, and more recently in Recommendation No. 169 (1986) concerning employment policies. These instruments propose that member States should encourage undertakings to associate workers and/or their representatives in the planning, introduction and use of new technologies which are liable to have major effects upon the workforce. This could be achieved by informing them of the opportunities offered by and of the effects of such new technologies and by consulting them in advance with a view to arriving at agreements.

Attention must be focused on these issues now, for the risks are great: the marginalisation and isolation of certain workers; and the failure to realise telework's potential to improve work and personal life. It is always better to take preventive action than to tackle problems once they have taken hold. Telework offers great convenience for employer and worker alike; the price of this convenience should not include reduced social protection.