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van Klaveren, M.; Tijdens, K.; Peters, P.; Wetzels, C.

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13.IT and telework

**Maarten van Klaveren,
Kea Tijdens,
Pascale Peters and
Cecile Wetzels**

1. NATURE AND SCOPE OF TELEWORK IN THE NETHERLANDS AND THE EUROPEAN UNION

Telework is one of the most intriguing forms of work facilitated by the development of information and communications technology (ICT). According to European research (ECaTT 2000; European Commission 2001), it enjoys widespread interest among (potential) workers throughout the European Union (EU). The Netherlands is no exception. This is hardly surprising considering the fact that telework seems to offer solutions to problems confronting many workers such as lengthy travelling times, searching for the right balance between work and family life, and the absence of a quiet workplace. The answers to social problems such as reducing home-to-work traffic congestion and more effectively (re)integrating disabled workers may also come a step closer through the spread of telework. In switching to telework, productivity gains of 10 per cent to 15 per cent are often observed. At the same time many employers, remarkably enough, show little enthusiasm for their employees engaging in telework. This chapter endeavours to chart the forces at play in this arena.

1.1. Defining Telework

The exact activities covered by concepts of 'telework' have been hotly debated in recent times. In the past few years a measure of clarity has emerged regarding the definitions, and more or less the same definitions have been applied in large-scale surveys. Thus, recent trends in the scope of telework over time and across countries have become comparable. Our discussion in this section on the definitions applied enables us to examine

trends in the nature and scope of telework in the Netherlands and the EU. The Netherlands appears to be among the European forerunners, although the rapid rise of telework in this country has levelled out in recent years. This is noteworthy for a number of reasons, partly because the list of 'teleworkable' jobs appears to be far greater than the actual number of jobs in which telework prevails. As explained in section 2, this concerns a theoretical upper limit by which the nature of the job ties in almost directly with the application of ICT. The technical infrastructure and spread of computer use throughout the population are also identified as factors potentially influencing the scope of telework. For the time being, these factors hardly serve to dampen the growth of telework. As we will show, the largest and most direct influence on that growth stems from the confrontation between employer (section 3) and employee (section 4) preferences in relation to telework. To some degree employees appear to have little or no choice in this respect, at least to the extent telework is imposed in the context of office innovation. At the other end of the range of options, where the desire to engage in telework can be recognised as an employee benefit, employers in an ample labour market will tend towards defining jobs as being linked to a fixed (office) workplace. At this end of the scale, a voluntary match between the preferences of employers and employees regarding telework can hardly be reached: the significant differences in the respective definitions of 'teleworkability' are not bridged. As our final section on the future of telework in the Netherlands will explain, informal arrangements generally appear ill-suited to bridging such differences. Logically, solutions should be sought in the area of telework regulations. These can be achieved at various levels, in collective agreements, with works councils and in the form of individual agreements. Preferably, the lower the level, the greater the need for specific rules.

As mentioned, it is not easy to determine which activities can be classified as telework. When the phenomenon arose in the course of the 1980s, numerous definitions and distinctions emerged, both narrow and broad, directed at the individual worker or within an organisational context. The broader variety has gradually earned preference. We too favour this classification and have adopted the following broad definition: telework is a form of work carried out at a distance from the employer or principal using it (de Vries and Weijers, 1998). By such a definition, telework can be distinguished from traditional or industrial homework. In the Netherlands, this is limited in numbers and declining. In 2000, the number of homeworkers was estimated at between 35000 and 40000, roughly 0.6 per cent of the overall labour force (van Klaveren and van de Westelaken, 2000).

The exact activities that can be classified under telework in the broadest sense cannot easily be identified on the basis of the above definition alone, and depend on the answers to questions relating to legal status, location, IT use, the exact nature of the activities and the actual number of hours worked 'at a distance'.

The first point relates to the teleworker's legal status. While most studies of telework concern employees, telework has risen dramatically among freelancers and self-employed individuals. We have included the latter groups among teleworkers in the broadest sense.

The second point relates to the work location. Does this only involve people who work at home or does distance work include 'anywhere except the employer's or principal's premises'? The latter point of departure is now generally accepted. This implies that telework could include mobile or 'multi-site' work (neither at home, nor at the work premises), as well as working at offices specially designed to provide telework facilities to employees and freelancers/self-employed from the immediate vicinity. Following the untimely demise of idealistically established telework centres in the Netherlands, large-scale real estate businesses have recently installed offices where multi-site teleworkers can hire work-cockpits or comparable facilities by the hour. Such offices are usually located close to railway stations or near motorways.

The task of delineating telework is not yet finished, especially concerning multi-site work. A number of questions remain. For example: is a representative working on a laptop a teleworker? And a truck driver using a mobile phone or fax, and so on? Supplementary criteria are needed to find adequate and statistically coherent answers to such questions. These relate to three points:

1. The use of ICT. Most statistics on the number of teleworkers, based on international research projects, assume the 'rather intense use of ICT'. This concept is defined in combination with:
2. the nature of the activities. As a rule, it is assumed that telework relates to 'information work', work that essentially involves the production, processing and distribution of information;
3. the number of hours worked at a distance from the employer or principal. Consensus is growing on the lower limits of working hours, despite a lack of synchronisation in statistical terms: most researchers assume 'telework in the narrow sense' if this concerns at least one full working day a week 'at a distance', while some maintain the lower limit at a quarter of the working week or 10 hours per week. Those individuals who carry out information work at a distance, but do so for a shorter period are generally considered 'supplementary teleworkers'.

Along these lines and providing they meet the working hours criterion, representatives working on a laptop are considered teleworkers, on an equal footing with other multi-site ‘information workers’ who carry out a significant proportion of their work en route or at the client’s premises. Conversely, truck drivers fall beyond the scope. Those individuals who carry out information work specifically at home (therefore not multi-site) for at least one day a week, the home-based teleworkers, form an important category.

1.2. The Extent of Telework in the EU

We can now distinguish four categories of teleworkers. This distinction was also drawn in the broad ECaTT survey into the scope of telework in ten EU member states conducted in 1999. It took the form of a combined general population survey and a decision-maker survey. Table 13.1 shows the findings of the survey for the Dutch population.

Table 13.1 Four categories of teleworkers in the Netherlands in 1999

		Numbers x 1,000	% of the labour force
a	Home-based telework	285,000	4,0
B	Freelancers/self-employed	166,000	2,3
c	Multi-site telework	308,000	4,3
a-c	Telework in a narrow sense (total without overlap)	593,000	8,3
d	Supplementary telework	451,000	6,3
a-d	Telework in a broad sense (total without overlap)	1,044,000	14,5

Notes: EcaTT 2000

In adding up the categories of home-based teleworkers, freelancers/self-employed and multi-site teleworkers to all teleworkers in the narrowest sense, an overlap emerges of some 166000 people (2.3 per cent of the labour force). Freelancers/self-employed comprise more than a quarter of these categories, after correction for the overlap.

The figures available show that the highest degree of growth in the number of teleworkers in the Netherlands – albeit relatively unnoticed – took place in the mid-1990s. The first serious survey for the Netherlands took

place in May 1995 and produced a figure of close to 80000 employees/teleworkers, amounting to 1.2 per cent of the labour force. In 1996, market research bureau IDC counted almost twice that number: more than 137000 employees/teleworkers with formal agreements on telework or 2.1 per cent of the labour force. In six of the seven cases, this related to home-based teleworkers. At the same time, IDC counted 366000 multi-site teleworkers in the Netherlands, 5.6 per cent of the labour force. After deduction for the overlap, the total number of teleworkers in the Netherlands in 1996 was thought to amount to 482000 people or 7.4 per cent of the labour force. As such, the increase in comparison with 1995 is no less than dramatic. IDC puts the rapid growth in the number of formal telework agreements down to the impact of occupational health and safety legislation. This legislation took effect for homework (covered under the Telework Act) as well, which made it imperative for employers to enter into agreements with 'their' employees (de Vries and Weijers, 1998).

The ECaTT report confirms that telework grew in the Netherlands in the mid-1990s. According to the ECaTT survey among managers, by 1999 in the Netherlands, the practice of telework in companies where this was introduced had only been initiated less than two years previously in more than half of these companies; at only one in 50 establishments where telework took place at that time, was this practice older than ten years. The Netherlands pretty much reflected the average European growth pattern, even though the proportion of 'old hands' within organisations in the Netherlands was less than in a number of other EU member states. Telework in the Netherlands is therefore (still) an even younger concept than in a number of other EU member states. Within the EU, the Netherlands lagged behind the UK and the Scandinavian countries. Beyond the EU, the US, Canada and Australia were ahead.

Towards the end of the 1990s, researchers and policy makers realised that telework was starting to take on significant proportions in the Netherlands. In 1998, for example, an adaptation of material on the Netherlands was published from the second European Survey on Working Conditions conducted in 1996. The findings here exceeded those of the IDC survey: almost 9 per cent of the Dutch labour force were engaged in telework. Unlike the IDC survey, the freelancer/self-employed category was included; according to the European Survey, this category accounted for approximately one third of all Dutch teleworkers. The Dutch researchers concluded that 'the telework phenomenon is far greater than was thought previously' (Dhondt and van den Heuvel, 2000:117). This is confirmed by the results cited above for the 1999 ECaTT project. If comparison of the IDC and ECaTT data is permitted, this would imply that the number of supplementary teleworkers showed a spectacular growth during the second half of the 1990s (by 250 per

cent), much more than the number of home-based teleworkers (up by around 45 per cent) and far more sharply than the number of multi-site teleworkers, which hardly grew at all. During the 1999-2001 period, a selection of research material shows stagnation in the growth of both home-based and supplementary telework. In the Netherlands, growth in telework is now mainly localised in multi-site telework and among freelance/self-employed people (van Klaveren and van de Westelaken, 2001).

From the ECaTT results for ten of the 15 EU member states, the number of teleworkers in 1999 amounted to more than 9 million for the EU as a whole: 6 per cent of the European labour force. Here, telework is defined in the broadest sense to include supplementary teleworkers as well. If the latter category is excluded, the estimated number of teleworkers comes to 6 million, or 4 per cent of the EU's labour force. The Netherlands scored more than twice this percentage. Of the ten countries, the Netherlands came in second at 8.3 per cent of the labour force engaged in telework, after Finland at 10.8 per cent. They were followed closely by Sweden (8.0 per cent) and Denmark (6.6 per cent), with the UK (4.8 per cent) and Germany (4.4 per cent) lagging behind. In relation to the other nine countries, the number of multi-site teleworkers was relatively high. The other countries that participated in the survey showed figures that fell below the European average: Italy (2.9 per cent), France (2.3 per cent), Spain (2.0 per cent) and Ireland (1.9 per cent).

The findings of the third European Survey on Working Conditions conducted by the Dublin Foundation (Paoli and Merllié, 2001) in March/April 2000 corresponded largely with the ECaTT findings for the scope of telework in both the Netherlands and the EU as a whole. The bottom limit in terms of working hours was slightly higher in the European survey than for ECaTT: telework for at least a quarter of the working hours, instead of a fifth. The 2000 European Survey counted 7 per cent teleworkers in the Dutch labour force. Taking account of the higher bottom limit, this may be a fraction higher than in the ECaTT survey a year earlier. The picture of stagnating growth in telework in the Netherlands was confirmed. The average level for all 15 countries of the EU emerged at 5 per cent, a figure referred to by ILO researcher Di Martino (2001) as the 'critical mass' above which growth in telework would be easier to achieve.

Of the EU member states, the UK – where many experts felt that ECaTT had underestimated the scope of telework – emerged from the European Survey as number 1, with 10 per cent of the labour force engaged in telework. Again, the Scandinavian countries appeared near the top of the list: Finland at 8 per cent teleworkers, Denmark at 6 per cent and Sweden at 5 per cent. The governments of these countries have been stimulating telework with a view towards promoting employment opportunities in remote and/or

economically disadvantaged regions. The scores were high for three member states not included in the ECaTT survey: Luxembourg (at 9 per cent), Belgium (6 per cent) and Austria (6 per cent). At 4 per cent teleworkers, Germany was once again positioned in the middle of the group, only now accompanied by France, Spain and Ireland, each at 4 per cent. The Southern European countries, Italy, Portugal and Greece, complete the list at 2 per cent teleworkers each. IDC sees 'hindrances because of bureaucratic and centralised corporate structures' in Southern Europe as the main reason underlying such limited numbers of teleworkers (*Algemeen Dagblad*, 27 October 2001).

Growth for the EU as a whole appears to persist in 2000. In November 2000, well over six months after the European Survey, the Eurobarometer Survey counted 5.5 per cent teleworkers in the EU (European Commission, 2001). Despite this, the difference between Europe and the US remains just as pronounced. Based on annual growth of 17 per cent to 20 per cent from 1997, telecommuting – as the phenomenon is generally referred to in the US – in the US reached a level of 20 per cent to 25 per cent of the labour force in 2001 (Davis and Polonko, 2001; Cahners, 2002). In both the US and Europe, telecom and computer companies have taken the lead in stimulating and accepting telework. For example, within the American ATandT group, telework agreements are in place for half the upper and middle management, a total of 55000 people (EcaTT, 2000).

As we have seen from recent surveys of the labour force, a level of 7 per cent to 8 per cent teleworkers prevails in the Netherlands. It is noteworthy that a telephone survey conducted by the Amsterdam Institute of Advanced Labour Studies (*Amsterdams Instituut voor ArbeidsStudies* – AIAS) in 2000 of managing directors and personnel officers of 314 establishments in five sectors shows a far lower level (Wetzels and Tijdens, 2001). Further elaboration of the AIAS data reveals that according to the respondents in these sectors, the number of teleworkers amounted to between 1.1 per cent and 1.4 per cent, which would correspond with 2 per cent to 2.5 per cent of the labour force as a whole. The difference between the AIAS findings and those of the previously discussed surveys can be explained for 2 to 2.5 percentage points by the exclusion of freelancers/self-employed and companies with fewer than 10 employees. The remaining difference of 2.5 to 3.5 percentage points, or 100 per cent to 140 per cent, remains large. The difference can be found in the distinction between formal and informal telework. We can assume that the employees counted in the AIAS survey enjoyed formal permission to engage in telework, in most cases based on agreements. However, informal telework has since increased dramatically – the findings of surveys that (also) take account of the experiences and opinions of employees certainly point in this direction. Apparently, many

employers have little or no insight into the development of informal practices. The findings of a representative survey into the telework potential of 1201 adults in Amsterdam are particularly striking here. Many employers reacted with surprise when confronted with findings of telework practices within their companies or institutions. They were unaware of this (van Vuuren et al., 1998)! Dutch case studies show that even in large, well-structured companies in the IT sector, the number of informal teleworkers is often far greater than the number of employees known to practise telework on the basis of formal agreements (van Klaveren and van de Westelaken, 2001).

2. 'TELEWORKABILITY' AND THE ROLE OF IT

The ECaTT researchers have attempted to provide a picture of the 'teleworkability' of jobs in the ten EU countries. In so doing, they assumed that telework can be carried out on at least one working day a week if the person concerned:

- carries out any form of office work for more than six hours a week; or
- carries out work related to writing, reading or manipulation of data or images, or works on the telephone for more than six hours a week; or
- carries out work on computer-driven equipment for more than six hours a week.

On this basis it was calculated that jointly, more than two thirds (68 per cent) of all jobs could be technically classified as 'teleworkable' in the ten EU countries studied in 1999. The differences between the countries were marginal. At 73 per cent, the Netherlands took second place (Gareis and Kordey, 2000). Such percentages should be seen as theoretical upper limits. Whether or not they hold out in reality remains to be seen. For example, on the basis of current employee preferences, a recent Dutch forecast assumes that by 2020 around 60 per cent of all jobs will be 'teleworkable' (Klomp and van Oosterhout, 2001). In any event, it is clear that jobs and tasks involving a high degree of information processing have the greatest telework potential. This is particularly true if these tasks can be separated from production processes and carried out at home (or at least not at the fixed workplace) and if face-to-face contact is not necessarily a prerequisite. This includes activities such as reading, writing/text processing, data-input and processing, telephone calls, programming, designing and drawing.

The degree to which 'technical teleworkability' becomes a reality differs from country to country, depending on developments in a complex range of four factors:

- the technical infrastructure and spread of computer use across the population, which is addressed in this section;
- the preferences and policies of employers (and of principals of freelancers/self-employed), which will be discussed in Section 3;
- the preferences of employees, to be discussed in Section 4; and
- developments in the labour force, which will be examined at various points throughout this chapter.

In the first instance, the Netherlands scores highly within the EU in terms of the spread of telecommunications infrastructure, especially the presence of ISDN and Internet facilities. In recent years, the interaction between a good infrastructure for the Internet, particularly achieved through cabling, and increasing interest among the population have resulted in a marked rise in Internet use. Taken in mid-2001, use of the Internet within the Dutch population, with two out of every three Internet users in the population above the age of 15, was the second highest in the EU, after Sweden. The percentage of Internet users among Dutch men was the highest at 73 per cent, with Dutch women taking second place (at 59 per cent) after their Swedish counterparts. At that time, only a very small percentage (7 per cent) of the Dutch population displayed no interest in using the Internet (European Commission, 2001).

Between 1998 and 2000, the number of Dutch households in possession of a personal computer (PC) increased from 4 million to 4.7 million, representing 69 per cent of all households. The number of households with an Internet connection more than tripled during the same period. The most common connection is the telephone line, followed at a large distance by cable and ISDN connections. Possession of a PC and access to an Internet connection are strongly linked to income: the higher the household income, the greater the percentage of households with a PC or Internet connection. Considering household composition, it appears that relatively few single people own a PC (but those that do are more likely to have Internet access), that couples without children often have a PC but are less likely to have Internet access, while couples with children are more likely to have a PC as well as an Internet connection. Finally, people with higher educational levels more often have a PC with Internet access at home than less educated people. Especially likely to have a PC in order to access the Internet are people aged 25 to 34 (CBS, 2001). In conclusion, PC possession and access to the Internet are relatively common among all groups of the labour force. Both levels are significantly higher than the percentage of teleworkers among the labour force. This indicates that neither PC possession nor access to the Internet from home stand in the way of a further increase in the practice of telework.

The professional use of a computer at the workplace appears to be relatively well spread in the Netherlands too. According to the European Surveys on Working Conditions the use of computers by the Dutch labour force (employees and freelancers/self-employed jointly) outstripped other EU countries in both 1995/96 and 2000 (Paoli and Merllié, 2001). Computer illiteracy in the Dutch labour force is declining sharply, partly due to computerisation of numerous production processes. The latest survey among salaried Dutch employees, conducted in January 2002, indicates that 89 per cent used computerised equipment at work. The scores to the same question were 80 per cent and 71 per cent in 2000 and 1994 respectively (Tijdens and Steijn, 2002). In the first place, this trend certainly leads to a greater spread of ICT-related competencies in the labour force. An important aspect here is knowledge of computer equipment or programs. In the January 2002 survey, such knowledge is rated as important or very important for the tasks carried out by 75 per cent of the respondents at work. These competencies are of course important to teleworkers too. In the second place and in keeping with this trend, there will be increased acceptance of prevailing and/or necessary practices associated with telework, such as having confidence in virtual (seldom visible, if ever) business contacts and virtual colleagues.

3. EMPLOYER PREFERENCES

3.1. Collective Telework and Office Innovation

The office towers of insurance company Interpolis in Tilburg appear to have become the new place of pilgrimage for the Dutch labour force. Some 15000 people visit these premises annually. Combining telework and introducing flexible workstations at the newly constructed headquarters of this Rabo subsidiary in 1997 allowed the installation of only 1000 workstations for 1500 employees. The new office concept was set to be applied when expanding the headquarters, where the ratio of employees to workstations would be two to one (Meijers, 2000; Klomp and van Oosterhout, 2001). 'Telework without a flexible office situation would not be a plausible formula for success', said Interpolis managing director Van Schijndel (van Dijk, 2002:9).

The collective application of telework, with more far-reaching effects for both work organisations and employees than the home-based telework of the 1980s largely involving data-entry typists, emerged in the mid-1990s. Nowadays, companies and institutions, especially in the insurance sector and commercial services (such as accountancy firms and research agencies), achieve employment growth mainly or completely through telework. Most

employees, if not all, are obligated to engage in telework for at least some of their working hours. The Interpolis case illustrates the extent to which the office set-up has changed in line with these developments. The flexible office is characterised by rooms and adjustable desks without a fixed owner, with docking-stations for PCs, cockpits for work requiring a high level of concentration, lockers and suitcases for personal possessions, et cetera. By mid-2001, some 12 per cent of all Dutch offices may have been set up according to the flexible office concept (van Rossum, 2001). The successful implementation of a collective form of telework demands a well-balanced combination of organisational flexibility, a flexible workplace set-up, a sound IT infrastructure and structured, well-guided introduction processes (Limburg, 2002).

3.2. Telework as an Employee Benefit

There is a second trend in telework resulting from the tight labour market in recent years. Telework has been used to provide an individual expression of the terms of employment and working conditions. The desire to engage in telework, particularly among highly qualified managers, professionals and technicians, has been increasingly honoured by companies and institutions as an employee benefit. This trend is visible throughout Europe. Both the ECaTT survey and the third European Survey on Working Conditions indicate a marked increase in the scope of telework amongst the groups just mentioned. The Netherlands is certainly not behind. This is evidenced by the fact that when 9500 Dutch computer users representing 110 occupations were asked via the Wage Indicator website in 2001 whether or not they could work at home every now and then, more than 40 per cent of the respondents answered 'Yes' for 31 occupations (representing 25 per cent of the respondents). This category included management consultants (87 per cent 'Yes'), policy advisers (48 per cent), account managers (47 per cent) and IT analysts and designers (42 per cent) (Tijdens et al., 2002). We can assume that this relates mainly to telework.

In the Netherlands, this latest trend stimulated the rise of collective agreements offering employees opportunities and facilities for telework, mostly subject to the approval of the employer or manager. This is the case at companies such as Achmea, CSM Suiker, DSM and KPN. In 2001, the Minister of Internal Affairs instituted the Telework Framework Regulation for civil servants. Concerning most collective agreements with telework provisions, they are generally specified in the form of departmental or individual arrangements. It should, however, be noted that the option of engaging in telework is almost exclusively considered a benefit for the incumbent personnel. Up until now, employers seldom use this as a means to

recruit new staff, which is evidenced by the minimal number of times prospective candidates are informed in job advertisements about the option of telework in the position offered. In more than 1000 job advertisements that appeared in five Dutch newspapers on two Saturdays in August 2000 and January 2002, we only found mention of such an option in two and three advertisements respectively.

3.3 Telework by Sector and Position

Van Klaveren and Van de Westelaken (2000) offer an indication of the sectors in which telework takes place, along with the activities involved: see Table 13.2. They based their survey on available literature and a supplementary company telephone survey. The table shows that the centre of telework can be found in the provision of commercial services, rippling out into the government and a few lines of manufacturing industry such as pharmaceuticals and printing/publishing.

Table 13.2 Sectors in which (home-based) telework is practised in the Netherlands, nature of the tasks and types of telework

Sector	Activities	Home-based telework	Multi-site telework
Insurance companies, incl. health care insurers	Data entry, policy and complaints processing	X	
	Telemarketing/commercial work	X	X
Printers and publishers	Layout tasks, word processing	X	
	Translation work, telemarketing/commercial work	X	X
Postal order companies	Telephone services, telemarketing	X	
IT companies	Software development and further research		X
(Market) research agencies	Telemarketing, data entry, word processing	X	
	Translation work	X	X
	Research		X
Management consultancies and engineering firms	Translation work	X	X
	Policy, research, inspection and other forms of multi-site work		X

Sector	Activities	Home-based telework	Multi-site telework
Government	Word processing	X	
	Translation work	X	X
	Policy work, research		X
Pharmaceutical industry	Translation work, telemarketing/commercial work	X	X
	Online support		X

Notes: Van Klaveren and Van de Westelaken, 2000

The previously mentioned AIAS survey of 314 managing directors and personnel officers conducted in 2000 provides a clearer picture of employers' policies and preferences in relation to telework (Wetzels and Tijdens, 2001). In 10 per cent of the organisations involved, the option of employees engaging in telework at home was (formally) recognised. In a further 10 per cent it was possible for employees to work at home. According to the AIAS survey, telework appears to be possible particularly in municipalities and to a lesser extent in banks, while only 6 per cent of employers in the construction sector stated that their employees enjoyed the option of engaging in telework. The survey revealed that only one in five organisations offered their employees the option of either working at home or engaging in telework. In cases where organisations permitted telework, this only appeared to relate to a small proportion of their employees. In more than half of these organisations, a proportion of at most 3 per cent practised telework, according to the managing directors and personnel officers. In slightly less than a quarter of the organisations, a proportion of 3 per cent to 10 per cent of the employees were involved and, in slightly more than a quarter of the organisations, the proportion came to 10 per cent or more, yet seldom surpassing the 20 per cent mark.

Searching for the lack of backing for telework, the AIAS survey revealed that employers most often argue that the activities or jobs and tasks in question are unsuitable, the two decisive elements being that the jobs either require presence at the workplace or physical communication. Of the organisations within which employees are barred from telework or working at home, 49 per cent cited this argument. The same argument was emphasised by employers interviewed for the Amsterdam survey. They rallied behind the assertion that 'the work process simply does not permit it' (van Vuuren et al., 1998).

A second, perhaps more striking outcome of the AIAS survey was that many organisations could not substantiate their stance with any reasons: no less than 25 per cent could not provide any specific reason for not providing their employees with an opportunity to work at home or to engage in telework. Their answers were: 'I don't know', 'There is no reason' or, in terms common to municipalities, 'We lack a policy in this area'.

Which organisations currently offer employees options for telework and in which does management assert that the jobs themselves rule out telework? We expect a significant divergence of opinion between the sectors. After all, employers keenly link 'teleworkability' to the jobs and these tie in strongly with the characteristics of the sector. From analysis of the AIAS data, it appears that significant differences do exist between the sectors. Concerning hospitals, 75 per cent of the managing directors and personnel officers asserted that the activities or jobs within their organisations did not permit telework. The scores were similarly high for the construction sector (67 per cent) and metal and electrotechnical industry (61 per cent), against lower scores for banks (32 per cent) and municipalities (24 per cent). 'Other sectors' (52 per cent) occupied the mid-position.

3.4. Telework by Organisation Size and Gender

We expect 'teleworkable' jobs to be more prevalent in larger organisations than smaller ones. We also expect the opportunities for telework to increase in line with the proportion of women and the educational level within the organisation. Based on the AIAS survey, it is indeed more often the case that in smaller organisations (less than 100 employees) employees are not afforded the opportunity to engage in telework. In this category, more than half the managing directors/personnel officers (56 per cent) argue that the 'job/work does not permit it'. However, if the opportunity to do so is presented, more than 10 per cent of the staff generally jump at it. By contrast, while it is often easier to engage in telework in large and medium-sized organisations, a far smaller percentage of the staff actually do. The AIAS material confirms the assumption that in 'male-dominated' companies, employees are less often afforded the opportunity to telework than in mixed or 'female-dominated' companies. As expected, companies with a high proportion of less educated employees more often argue that the jobs do not permit telework. This corresponds with the findings of the ECaTT survey, from which it appears that the actual and required educational level of European teleworkers is relatively high (EcaTT, 2000).

Finally, the AIAS survey examined the percentage of female homeworkers or teleworkers. The sample survey included 52 companies for which data were available on the percentages of female employees and female home

workers or teleworkers. In 30 of the 52 companies both percentages corresponded, in 8 companies the percentage of homeworkers or teleworkers among female employees was higher, while in 14 companies it was lower. The last group of companies was decisive: on balance, it appeared that women engaged in homework or telework slightly less than men. Information derived from the Wage Indicator website in the course of 2001 also points to the fact that Dutch men engage more in homework or telework than their female counterparts. In total, nearly 22 per cent of almost 13000 Internet respondents answered that they worked at home every now and then: no less than 24.5 per cent of the men against 19.5 per cent of the women. Because no lower limit applied with respect to the number of hours worked, this group also includes supplementary homeworkers and teleworkers (Tijdens et al., 2002).

3.5. Conclusions

We can conclude that Dutch employers are currently adopting a wait-and-see approach towards telework. While a great need for telework has been identified among employees, the AIAS survey shows that barely 10 per cent of the organisations interviewed enabled them to engage in telework. Evidently, the dominant rationale on the employers' side is that for most jobs employees need to be present at the workplace or at least on site, a view that is certainly not shared by large numbers of employees (for more details see section 4). The fact that the proportion of employees in the labour force engaged in workplace-bound activities is declining slowly appears to have little impact on employers' attitudes. Generally, pressures arising from labour shortages or high office costs coerce employers to allow 'their' employees to engage in telework and, to a limited extent, formulate policies in this area (van Klaveren and Tijdens, 2003). Similarly, the argument that telework could contribute towards reducing commuter traffic congestion obviously enjoys little support in employer circles. A possible explanation for this is that employers do not gain from such a reduction as long as the costs due to time losses are mainly covered by the employees themselves. This would be different if the supply and delivery of goods were to be affected by traffic jams on a greater scale. Although this impacts negatively on companies' productivity, such consequences are not yet being experienced collectively by employers. Moreover, it seems quite likely that they award little credence to telework as part of the solution.

4. EMPLOYEE PREFERENCES

Employee preferences to engage in telework cannot be viewed in isolation from major social trends. As discussed, this not only concerns developments in work organisations and the use of IT within such organisations and in households, but trends in the use of time and space that can affect employee preferences for telework as well. We have attempted to chart these trends based on individual motives for wanting to engage in telework, as revealed by recent Dutch research. We mainly focus on the findings of three such surveys. The first already cited survey examines the telework potential of the inhabitants of Amsterdam (van Vuuren et al., 1998). Second, we made use of data generated by a representative survey, initiated by AIAS and TNO-STB and conducted in March 2001 by Telepanel among 1759 Dutch residents between the ages of 15 to 65, addressing issues such as their use of ICT. Of the total number of men interviewed in the Telepanel sample survey, more than four-fifths were in salaried employment at the time, while the proportion for the women interviewed came to more than two-thirds (Wetzels and Tijdens, 2001). Third, the findings of a survey conducted in December 1999 among 1689 people employed in the IT sector also generated useful information (Tijdens, 2000; Tijdens, Van Klaveren and Wetzels, 2001).

4.1. Combining Work and Family Life

The first cluster of trends we will address relates to combining work and child-rearing obligations. The rise of dual-earnings and singles households contributes towards the expansion of the segment of the population that, as coined by SCP researchers, combines substantial professional obligations (12 hours or more per week) with substantial household obligations (8 hours or more a week). The proportion of those combining both tasks in the Dutch population aged 20 to 64 has increased steadily from 20 per cent in 1975 to 47 per cent in 2000 (van den Broek, Breedveld and Huysmans, 2001). Coupled with this is the experience of intensifying 'time pressure' by more individuals and households (Peters, 2000). One of the potential advantages of telework is its contribution towards enhancing the quality of life with respect to the latter phenomenon. Daily tasks could become easier to fulfil if supported by telework, without having to traverse an extensive and complex time-space path (SZW, 2000).

Greater freedom in planning daily tasks or time sovereignty indeed appears to be an important motivating factor in either wanting to or actually engaging in telework. Achieving more flexibility in planning the day or using telework as a means to achieve a better balance between work and family life

was revealed as the number 1 motive in the Amsterdam survey and as the second most popular motive in both the Telepanel and IT surveys. In the Amsterdam survey, 26 per cent of the people already engaged in telework and even 48 per cent indicating a desire for telework gave this as their motivation for wanting to work at a distance. However, 'work and family life' is not synonymous with 'work and child-rearing'. In the Amsterdam survey, the combination of work and child-rearing, included separately as a motive, only emerged in fourth place. Just 7 per cent of the teleworkers and 15 per cent of those who indicated their desire to do so stated this as a motive (van Vuuren et al., 1998). The two other surveys confirm these results. In the survey of IT employees, the presence of children living at home did not influence the desire for telework, even though in that survey, women felt – more so than men – that telework would be smart for combining work and child-rearing. Women did not prefer telework more often than men (Tijdens, 2000). On the contrary, the three surveys revealed that men had a greater preference for telework than women.

Albeit based on a limited survey, Casimir concluded that telework does lead to a change in household tasks. For both men and women, telework is thought to create circumstances under which more time is freed up for taking care of children; parents may be able to drop off and pick up their children from school themselves more often (Casimir, 2001). According to the Telepanel and IT surveys, it would seem that increased time flexibility especially relates to dropping off and picking up children, in addition to visits to the post office and city/town hall, simply shopping during the day or activities in and around the home. Telework does not serve as an alternative to day care. After having children, telework is not seen as such an option by women: in far more cases, they seek part-time employment, with fixed and predictable working hours. However, it appeared from interviews with women who engage in telework that this does offer opportunities for women returning to work, even with young children. Telework does not represent a clear step towards a more even division of household tasks between men and women. The results, especially of the IT survey, provide a basis to assume that the preferences for time-off play a far greater role in preferring telework. These preferences increase in proportion to the length of commuting times, the volume of household tasks and the feeling that aside from work little time remains for family, relatives or friends. This survey shows that for IT employees, telework is considered a means to create a better balance between work and family life. This probably applies equally for many other professional groups. Finally, the survey shows that this cannot be restricted to resolving the tension between time allocated to work and to child-rearing.

4.2. Mobility Problems

A second cluster of trends identifies mobility related to commuting. Reducing mobility in the form of road traffic, especially during rush hours, and the environmental costs of such traffic congestion, was adopted by the Dutch government as the most important argument in favour of stimulating telework in the early 1990s. Statistics Netherlands points out that the average commute between 1988 and 1998, thus over a ten-year period, increased by more than 2 kilometres to over 16 kilometres (Voogdt-Pruis, 1998). Nonetheless, it appears that the length of time taken by individuals to commute remained constant for a long time. In the 1975-95 period, transport to and from work and school only accounted for a small proportion of the mobility growth. This changed radically between 1995 and 2000. In this period, transport with these motives demanded more time from individuals – including those with salaried employment. At the same time, motoring kilometres increased dramatically (van den Broek, Breedveld and Huysmans, 2001). It would be reasonable to expect the average distance commuted to increase in the years ahead. It should not be assumed that if one of dual earnings partners changes his/her job, the household will relocate. With greater travel distances, expectations are that the average time taken to commute will increase, certainly if we depart from the premise that problems related to congestion and public transport are a long way from being solved in the Netherlands.

Long and/or increasing commuting times appear to stimulate the preferences for telework. In the Amsterdam survey, reducing commuting time is revealed as the second most important motive for engaging in telework (20 per cent of the teleworkers) or wanting to do so (26 per cent of those wishing to engage in telework). In both the Telepanel and IT surveys, reducing commuting time even shows up as the number 1 motive. All three surveys show that people who have to commute for a long time, more often have a greater preference for telework than those who commute for shorter periods of time, irrespective of gender or household characteristics. For example, the Telepanel survey showed that if faced with the prospect of commuting longer than an hour one way, the likelihood of a telework preference increased by no less than 67 per cent. This phenomenon was confirmed by the analysis of data derived from the second European Survey on Working Conditions of 1996. Teleworkers in both the EU as a whole and in the Netherlands faced longer commuting times than comparable professional groups that could telework but did not choose to do so, and still longer than the other groups in the labour force (Dhondt and Van den Heuvel, 2000). The Amsterdam survey further revealed that while travel costs hardly play a role, time demands certainly do. Even so telework is mainly carried out and preferred by employees who commute by using private transport.

Apart from that, inverse effects are also conceivable: according to the same survey, 20 per cent of those considering telework as an option would think about moving further from their workplace if telework could be practised. Yet, this link does not appear significant. Based on the Amsterdam survey, it appears that a mere 2 per cent of current teleworkers actually move further away from work.

The literature repeatedly (European Commission 2000; Davis and Polonko, 2001; Kraan and Dhondt, 2001) points out that the time-saving motive underlying the preference for telework is contradicted because teleworkers not only engage in (tele)work during the commuting time 'saved', but that they also use part of the leisure time they used to have at their disposal. This 'workaholic' argument is not confirmed by an analysis of Dutch data from the Wage Indicator for 2002 (5050 respondents), nor by a representative survey of 967 employees in Autumn 1998 into the use of ICT. Telework does emerge as a 'time saver'. Although teleworkers may work longer hours and with more overtime than non-teleworkers, there was no evidence that their working week was longer or their overtime higher than for employees who also had an opportunity to engage in telework but did not. Obviously, telework as such did not lead to 'workaholism'. The conditions under which employers permit and arrange for employees to engage in telework appeared to be a far greater contributing factor (Peters, Wetzels and Tijdens, 2002).

4.3. Working Environment and Concentration

A third cluster of trends stimulating telework lies in the need for a peaceful working environment enabling concentration prevailing among employees. This need appears to have become more urgent in recent years. Within the EU as a whole, labour intensity continued to rise in the 1990s, albeit more strongly in the first half of the decade than in the second. However, working against tight deadlines did become far more prevalent in the latter half. In 2000, 60 per cent of all salaried employees in Europe were confronted with this phenomenon for at least a quarter of the time at work. Among these employees average stress levels appear relatively high (Paoli and Merllié, 2001). During the 1990s in the Netherlands, work pressure increased to a comparatively high level, but seemed to stabilise thereafter (Otten and Houtman, 2001). At the same time, the number of salaried employees carrying out highly qualified brainwork tasks for which concentration is vital, increased dramatically in this country (NEI, 2000).

In many cases, modern offices appear to be below par when it comes to catering to the growing need to concentrate and not be interrupted while working. More highly qualified teleworkers prove especially to achieve

significant productivity gains working from home. To a relatively large extent, American case studies confirming this (Bélanger, 1999; Baruch, 2000) seem to apply to the EU, including the Netherlands. Despite productivity gains being very difficult to trace when it comes to policy, administrative and commercial work, a one-off increase of 10 per cent to 15 per cent is regularly cited; examples in the Netherlands include the telework pilot projects at Interpolis and a number of ministries (EcaTT, 2000; Hinrichs, 2000; Klomp and Van Oosterhout 2001). Supplementary evidence of the higher productivity and quality of 'output' delivered by teleworkers in comparison with activities otherwise carried out at the office is provided in practically all surveys available. The large American survey of Davis and Polonko (2001) reported higher productivity for three-quarters of the teleworkers. Similar findings for the 15 EU member states were generated by the Eurobarometer survey as of November 2000 (European Commission, 2001).

Against this background, it is hardly surprising that the opportunity to concentrate on carrying out work without being interrupted also appeared to be a strong motive to (want to) engage in telework in the surveys conducted in the Netherlands. In the Amsterdam survey, this motive took third place: it was cited by 20 per cent of the teleworkers and 19 per cent of the respondents who wanted to but had not yet done so. In the IT survey, this motive took fourth place, and in the Telepanel survey it was cited as motive number three among men, and number four among women.

4.4. 'Wanting to' versus 'being able to'

In the three Dutch surveys mentioned, high scores were also achieved in response to the general question of whether the respondents wanted to engage in telework, but the discrepancy between 'wanting to' and 'being able to' remained pronounced. For example, close to 60 per cent of the respondents in the Amsterdam survey who marked their jobs as 'teleworkable' indicated that they wanted to practise telework, but that they were unable to because of obstacles at work. More than 15 per cent of this group indicated that they did engage in telework, of whom more than half did so for one day a week or less (that is supplementary teleworkers). According to the Telepanel survey, 22 per cent of the respondents said they could carry out telework, while a group of more than twice this size (49 per cent) said they wanted to. The biggest discrepancy was revealed in the survey conducted among IT employees. Of the respondents, 77 per cent wanted to carry out telework for a part of the week, while only 40 per cent had an opportunity to do so. Of these respondents, 26 per cent had the opportunity to engage in telework as well as the necessary facilities, such as a PC and a network connection.

We can now draw a distinction between three groups: those that want to, those that can and those that do engage in telework. The groups overlap partially, such that the group that wants to is always far larger than the groups that can and actually do engage in telework. The findings of three studies have been published in the Netherlands that examine the way in which these groups differ from one another (Tijdens, Van Klaveren and Wetzels, 2001; Peters, Wetzels and Tijdens, 2002; Peters, Tijdens and Wetzels, 2004). These studies examine the impact of organisational characteristics, job characteristics, household characteristics and individual characteristics. The main findings are summarised below.

Concerning organisational characteristics, it was revealed that employees who work within an organisation with more than one establishment are more often permitted to engage in telework. This also applies to employees who carry out their tasks without direct supervision. While the presence of a flat organisational structure does influence the desire to carry out telework along with actually doing so, it does not – as one would expect – have an influence on the opportunities to do so.

It appears from these three Dutch surveys that job characteristics have an impact on the preferences for telework, as well as on the possibilities to do so, and on actual telework. Employees who have followed an Internet course, possess IT skills, or are well educated more often prefer to telework. They also appear to actually do so more often. Managers are more often permitted to practise telework, but show no higher preferences than non-managerial staff. Employees who often use a computer for their work have the same opportunities to engage in telework as other employees, more often express the desire to do so, yet in practice do so less. In addition, it appears that fewer opportunities for telework show up when activities are more workplace bound, and when the working hours of those involved are more regulated. This is understandable in view of company policies to define ‘teleworkable’ jobs. However, it is striking that the ‘teleworkability’ of jobs does not influence the preferences for telework among employees. Evidently, employees tend to abide by a far broader definition than ‘their’ employers, if any, as to whether or not their jobs are ‘teleworkable’. Aspects like being tied to a location, presence and working hour restrictions do not appear to play a role in their considerations.

The three studies show that household characteristics have a major impact on the preferences for telework. The presence of children in the household appears to have a negative impact on the desire for telework, contrary to what might be expected. The parents in question would rather work at their usual place of work than at home. Working parents want to engage in telework more only when their children are younger than four years of age. It should be noted that these studies only took account of people already participating

in the labour market. It is conceivable that parents, especially mothers with young children, stop working because they cannot realise their preferences for telework. Consequently, this group would fall beyond the scope of studies into salaried employees. In the study focusing on household characteristics, account was also taken of the impact of time use related to work and household tasks jointly, where it was assumed that larger time use would result in increased telework preferences. Employees with a higher time use are more likely to be permitted to engage in telework, especially if they have many overtime hours, although this group did not have a greater desire for telework. The length of commuting times is also relevant; however, the findings of the three studies differ here. One study revealed that employees with long commuting times were more likely to be permitted to engage in telework, but their desire to do so was not necessarily greater. Another study showed that this latter group more often desire to telework, but that they are not more likely to be given the opportunity.

5. THE FUTURE OF TELEWORK

Forecasts based on the ECaTT survey calculated that in 2005, 11 per cent of the labour force would be carrying out telework (in the broadest sense) within the EU as a whole. In the Netherlands, the percentage could be far greater in 2005, at around 25 per cent of the labour force (Gareis and Kordey, 2000). Some years ago, one of the authors predicted that the percentage of teleworkers would in fact be far lower, at between 12.1 per cent and 13.2 per cent (at a minimum of one day a week) of the labour force in the Netherlands in 2005. This forecast, based on a more refined diffusion model than that of the ECaTT researchers, drew from the figures published by Statistics Netherlands, another Dutch institute, ROA, and from the Wage Indicator, produced an increase in Dutch teleworkers of 60 per cent to 62 per cent between 2001 and 2005 (van Klaveren and van de Westelaken, 2001; van Klaveren, 2002). However, even the latter forecast appears too optimistic at this point in time.

The technical conditions will certainly not pose problems. Developments in the technical infrastructure and the spread of computer use throughout the (working) population in the Netherlands need not dampen any feelings of optimism. Based on the existing infrastructure and the extent to which PCs are used, the number of teleworkers could double in the period between 2002 and 2005.

Employer preferences and policies are a different matter. Developments in this area do not bode well for the future of telework in the Netherlands in either the short or the medium term. First, recent interviews conducted by the

authors and colleagues among Dutch managers indicate the rather slow spread of the collective application of telework. The combination of flexible workstation set-ups, organisational flexibility, sound IT infrastructures and structured introductions is obviously beyond reach for many companies, even within the IT sector. Additionally, the relative decline in office costs expected in the years ahead as a result of dwindling office occupancy rates, will diminish the urgency for employers to seek solutions in this direction.

Second, the rapid expansion of telework as an individual employee benefit seems highly unlikely in the coming years given the current economic slump. Assuming a more relaxed labour market, it seems unlikely that employers will generously award the right to engage in telework. Individual employee pressure to formalise telework will not hold under such conditions. Many employees will feel vulnerable in (beginning to) engaging in telework when threatened by reorganisation or rationalisation. In conditions like these, many might feel that virtual contacts are inadequate. They may consider frequent workplace presence, at set times in the coffee corner and at the notice board, as a must. Employers will not break with their habits of defining activities as workplace bound and at least with compulsory presence within a set period of time. It is unlikely that they will 'advertise' telework as an option.

By contrast, the preferences for telework in the labour force can be expected to increase further in the years ahead, albeit partly as a result of different trends and for different reasons than are commonly assumed. Telework will be considered by growing groups of well educated people as a way to create a better balance between the work and family life, and/or to avoid long(er) commuting times, and/or being able to find a quiet workplace. For many of them, the argument from the employers' side that their jobs are not 'teleworkable' will fall on deaf ears: their definition of the concept is and will remain far broader. The preference to telework is at an increased risk of not being fulfilled or of only being arranged on an informal basis. It remains to be seen whether informal arrangements will stand the test of time. In informal settings, the risks and disadvantages of engaging in telework can mount quickly for employees, certainly in terms of their own experiences. Those involved will only gain a clear picture of costs and benefits after several years of telework. Besides giving up existing benefits (travel allowances, contact options, career prospects) for an 'unregulated' alternative, potential risks are at stake with respect to taxation, insurance, and occupational health and safety (van Klaveren and van de Westelaken, 2001). The large and growing desire for telework will increasingly be at loggerheads with the limited options available for doing so in structured and formalised ways, minimising individual risks.

An alternative scenario may offer better prospects. This involves narrowing the gap between 'wanting to' and 'being able to' engage in

telework. In our opinion, the latter scenario assumes that telework will be embedded in the regulated and, to a certain extent, formalised Dutch labour relations. To this end, the social partners will have to establish collective arrangements on a joint playing field. Up until now this has failed to occur, mainly because the parties involved continue to play on different fields. Employer organisations are keen to see the perceived costs of telework, including the fiscal facilities and implications, neatly arranged. The trade unions are eager to establish minimum conditions under which telework can take place. After an energetic start, the government is now largely paying lip service to the societal gains of telework in the form of reduced traffic congestion and larger opportunities for the integration of the disabled.

Nonetheless, new opportunities are looming given the hopeful developments at European level. Stimulated by the European Commission, the social partners closed a framework agreement on telework in the summer of 2002. This agreement is the first of its kind binding the social partners in each of the EU member states to implementation within three years. In the Netherlands, a recommendation by the Labour Foundation (STAR) could serve as a starting point. Such a recommendation would in any event be helpful, as evidenced in several areas over the past 20 years (reduction of working hours, work and family life arrangements), as it delivers a workable base for the expansion of telework without too many social risks. Modern collective arrangements would benefit from differentiating by sector, organisational, departmental and individual level. This especially applies to telework. Agreements regarding telework could at least be reached at three levels: at sector or company/institution level by collective agreements; at company/institution level or department level by arrangements with the (Central) Works Council; and in the form of individual arrangements between employee and employer. We would recommend that arrangements be embedded in an overlapping system: from less detailed arrangements at higher levels to increasingly concrete arrangements at lower levels. In so doing, sufficient leeway should be built in to facilitate flexibility and tailored solutions.

REFERENCES

- Algemeen Dagblad (2001), 'Telewerken lost arbeidsproblemen op', *Algemeen Dagblad*, 27 October.
- Baruch, Y. (2000), 'Teleworking: benefits and pitfalls as perceived by professionals and managers', *New Technology, Work and Employment*, **15**(1), 34-48.
- Bélanger, F. (1999), 'Workers' propensity to telecommute: An empirical study', *Information and Management*, **35**(3), 139-53.

- Broek, van den, A., K. Breedveld and F. Huysmans (2001), 'Het tijdsbudget. Het tijdsbeslag van verplichtingen, herstel en verplaatsingen', in K. Breedveld and A. van den Broek (eds), *Trends in de Tijd. Een Schets van Recente Ontwikkelingen in Tijdsbesteding en Tijdsordening*, The Hague: Sociaal en Cultureel Planbureau (SCP), pp. 9-28.
- Cahners In-Stat Group (2002), *Study Report April 2002*, in <http://www.ivc.ca/studies>.
- Casimir, G.J. (2001), *The Impact of Telecommuting on the Division of Labour in the Domestic Setting*, Wageningen: Wageningen University.
- CBS (2001), *De Digitale Economie*, Voorburg: Centraal Bureau voor de Statistiek (Statistics Netherlands).
- Davis, D.D. and K.A. Polonko (2001), *Telework in the United States: Telework America Survey 2001*, Washington DC: ITAC (<http://www.telecommute.org/twa/twa2001>).
- Dhondt, S. and S. van den Heuvel (2000), *Telewerken in de tweede Europese Enquete naar de Arbeidsomstandigheden*. Hoofddorp: TNO Arbeid.
- Dijk, van, C. (2002), 'Driehonderd snipperdagen over. Het schemergebied tussen thuiswerken en niet-werken', *Avanta*, (1), 32-5.
- ECaTT (2000), *Benchmarking Progress on New Ways of Working and New Forms of Business across Europe, ECaTT Final Report*, Bonn/Brussels: empirica/European Commission (<http://www.ecatt.com/ecatt>).
- European Commission (2000), *Status Report 2000 on New Ways to Work in the Information Society*, Brussels: EC (<http://www.eto.org.uk>).
- European Commission (2001), *e-Inclusion. The Information Society's Potential for Social Inclusion in Europe. Commission Staff Working Paper*, Brussels: EC.
- Gareis, K. and N. Kordey (2000), *The Spread of Telework in 2005*, Bonn: empirica (<http://www.empirica.com/ecatt>).
- Hinrichs, J.F. (2000), 'Flexkantoor bindt personeel', *Het Financieele Dagblad*, 9 November.
- Klaveren, van, M. and A. van de Westelaken (2000), *Thuiswerk – telethuiswerk – telewerk. Verkenning van het Werken Thuis*, Utrecht: FNV Bondgenoten.
- Klaveren, M. van, and A. van de Westelaken (2001), *Telewerken – Het Vervolg. Een Onderzoek voor de FNV naar Aanleiding van 10 Vragen*, Eindhoven: STZ advies and onderzoek.
- Klaveren, M. van (2002), *Handboek OR Strategie en beleid. Telewerken*, Alphen aan de Rijn: Kluwer.
- Klaveren, M. van, and K.G. Tijdens (2003), *Teleworking Policies of Organisations – The Dutch Experience*, Amsterdam, AIAS Working Paper 03/07, www.uva-aias.net/files/aias/WP07.pdf.
- Klomp, H. and B. van Oosterhout (2001), 'Telewerken is niet te stoppen', *Intermediair*, 4 January, pp. 28-33.
- Kraan, K.O. and S. Dhondt (2001), *Telewerk in de Praktijk: Grenzen aan Tijd en Vrijheid*, Hoofddorp: TNO Arbeid (<http://www.arbeid.tno.nl>).
- Limburg, D. (2002), *Making Telework a Reality. A Method for Introducing a New Way of Working into an Organisation*, Enschede: Twente University Press.
- Martino, di, V. (2001), *The High Road to Teleworking*, Geneva: ILO.
- Meijers, P. (2000), 'Telewerken bij Interpolis', *IT-Monitor*, 4(7), 22-24.
- NEI (2000), *Een Virtuele Schaarbeweging? De Invloed van ICT op de Vraag naar en het Aanbod van Arbeid*, Rotterdam: Nederlands Economisch Instituut.
- Otten, F. and I. Houtman (2001), 'Werkdruk stabiliseert', *Index (CBS)*, 8(9), 2-3.

- Paoli, P. and D. Merllié (2001), *Third European Survey on Working Conditions 2000*, Dublin: European Foundation for the Improvement of Working and Living Conditions (<http://www.eurofound.ie>).
- Peters, C.P. (2000). *The vulnerable hours of leisure. New patterns of work and free time in the Netherlands 1975-1995*, Amsterdam: Thela Thesis.
- Peters, P., K.G. Tijdens and C. Wetzels (2004), Employees' opportunities, preferences, and practices in telecommuting adoption. *Information & Management*, **41**(4), 469-482).
- Peters, P., C. Wetzels and K. Tijdens (2002), 'Teleworking, timesaving or timegreedy?', paper contributed to the 7th International ITF Workshop and Business Conference, Badajoz, 12-15 September.
- Rossum, van, S. (2001), 'De onweerstaanbare nieuwheid van het flexibele kantoor', *Nederlandsche Staatscourant*, 20 November, pp. 8-9.
- SZW (2000), *Bereikbaarheidsscenario: Verkenning van een Extra Optie voor Taakcombineerders. Eindrapportage*, The Hague: Ministerie van Sociale Zaken en Werkgelegenheid /Directie Coördinatie Emancipatiebeleid.
- Tijdens, K.G. (2000), *Werken in de ICT sector: onder welke voorwaarden?*, Amsterdam: Stichting FNV Pers.
- Tijdens, K.G., M. van Klaveren and C. Wetzels (2001), 'Wie kan en wie wil telewerken? Een enquête in de ICT-sector', *Tijdschrift voor Arbeidsvraagstukken*, **17**(2), 152-64.
- Tijdens, K., A. Dragstra, D. Dragstra, M. van Klaveren, P. Osse, C. Wetzels and A. Zorlu (2002), *Loonwijzers 2001/2002*, Amsterdam: AIAS (<http://www.uva-aias.net/files/aias/RR10.pdf>)
- Tijdens, K. and B. Steijn (2002), *Competenties van Werknemers in de Informatiemaatschappij. Een survey over ICT-gebruik*, Amsterdam: AIAS (<http://www.uva-aias.net/files/aias/RR11.pdf>).
- Vuuren, van, V.C., W.G. van Arkel, A. van den Bosch, E. Schol and W. Bosveld (1998), *Telewerken in Amsterdam: Telewerkpotentieel en Milieu-effecten*, Petten/Amsterdam: Energieonderzoek Centrum Nederland / O+S Amsterdams Bureau voor Statistiek en Onderzoek.
- Voogdt-Pruis, H. (1998), 'Reizen tussen huis en werk', *Index* (CBS), **5**, 10-12.
- Vries, de, H. and T. Weijers (1998), *Zicht op Telewerken. Een Studie naar de Stand van Zaken in de Kennis over Telewerken en de Impact op de Beleidsterreinen van SZW*, The Hague: Ministerie van Sociale Zaken en Werkgelegenheid.
- Wetzels, C. and K. Tijdens (2001), *A Digital Dutch Miracle in Households and Firms. Definitive report for the Ministry of Economic Affairs*, Delft: TNO Strategie, Technologie en Beleid.