

# **Labour conditions, quality and formality in Telework**

## **Labour market debate and structural solution to controversial empirical findings around Telework**

Juhani Pekkola

PhD

Research Director, Kymenlaakso University of Applied Sciences

Adjunct Professor, University of Tampere

Kymenlaakso University of Applied Sciences / Social and Health care

Kotka

Finland

[juhani.pekkola@kyamk.fi](mailto:juhani.pekkola@kyamk.fi)

© 2012 Juhani Pekkola

No written or electronic reproduction without permission

The introduction of knowledge work, globalization of economy and innovative paradigms of management has led to the rapid increase of telework during last 20 years. At the moment main part of white collar workers – at least according Finnish statistics – work up to some degree in various – formal and informal – places and according flexible – formal and informal - time concepts.

There are many definitions for telework. We have various several of understanding and harnessing possible forms of work organization. In addition we have various management cultures and business strategies. Therefore we have not one but various forms of telework. Telework can be defined for instance as work at home, flexibility in time and place or as a mode of work by which maximum amount of knowledge can be created in virtual space and by using various time concepts etc.

One of the main empirical characteristics of telework is the informal nature in relation to work contracts as well as labour agreements. 7/24 connectivity is at last a real technical option. Individuals work often informally and managers allow and even support them to do so because of many interests possible to explain when taking a close look for the nature of work, drivers of business and dynamics on labour market. The focus of this paper is not to describe the history of ideal teleworking concepts or terminology. Hopefully this paper will at the very end highlight some essential phenomenon's of telework.

The definition of Telework I've used is as follows:

**The concepts of telework, eWork and telepresence are considered as a whole to which the term *telework* refers. Telework seeks to create temporal and spacial arrangements to facilitate working methods that foster an innovative environment in order to produce knowledge. This may be done in physical, virtual or social platforms or spaces as long as they are used to support psychological or conscious individual or group processes to create knowledge. To this end, the physical, social, and technological factors of working and business environments should be interrelated in ways that improve thinking and innovating.**

## **1. Historical discussion of labour conditions related to telework.**

Globally there is a wide discussion concerning the labour conditions and the quality of work among Teleworkers during last 30 years. In short the discussion can be put in three categories:

I Telework have been regarded as an extension to old home based work with all insecurity and harsh labour conditions, non unionizing practices and labour disputes. In some cases telework has been seen a form of social oppression. (Chamot & Zalysky; 1985, Oldfield; 1991, Vorjans; 1987, Kubick & Fischer, 1987, The protection...;1989, Conditions...1990, 27-28, Di Martino & Writh; 1996, Oldfield; 1991, Vega Ruiz; 1992, Fischer; 1992, 73, Bertin & Denbigh; 1996, Arnal & OK & Torres; 2001, 12-13.)

II Some reports demonstrate polarization. Highly skilled and privileged workers improve their quality of work and less skilled or Teleworkers already in less favorable labour market position will suffer. (Fischer; 1992, Conditions...; 1990, Council of Europe...; 1990, Kawakami; 1985.)

III In addition there is a telework model of win-win situation for all social partners, up skilling, better working conditions and even high unionization rate. ( Engeström etc. 1990, Huws etc. 1990, Paavonen; 1992, The State of California....; 1990.)

Most blurring thing is the fact that all options seem to be empirical realities. This has lead to endless debates and blurring around telework.

## **2. Three dimensional model to understand the outcomes in terms of labour conditions in telework.**

It is possible to explain these controversial trends in labour conditions by definition of the critical factors behind the quality of work on three levels.

First we have to take a look for national labour market systems and especially to the degree of regulation among them. National labour market models are relevant in explaining the patterns of behavior on company level. (Julkunen & Nätti; 1999, 12.) Nordic applications telework correlate positively with the quality of work (Pekkola 1993., Engeström etc. 1991, På lagom distans; 1987). When we speak about central Europe and USA there are a lot of reports about labour market and quality of work problems (Oldfield; 1991, Vorjans 1987.)

Basically labour markets are more or less regulated. In **more regulated labour markets**, like in Nordic states, there are comprehensive legislation, social policy, and high unionization rate. On **less regulated labour markets**, like UK, USA, the legislation leave the labour market status of teleworkers unclear, unionization rate is low. Social security is based on individual insurances. (Pekkola; 1993, 271-278., Heikkilä; 1996., compare Bakke; 1993., Tuliara & Paanetoja; 1999 53, 57., Boldt & Laine; 2001, 3 – 26.)

Secondly we have to understand the rationality of management in personnel policy. In principle it can be based on **functional flexibility** that is, harnessing and supporting the competences among workers in the long run. On the other hand personnel policy can be based on **numerical flexibility**. There are short term labour contracts based on economical fluctuations, low paid policy etc. (Atkinson; 1987, Alasoini; 1990, Ylöstalo; 1999. )

Thirdly we have to analyze the **skills** among the workers. Basically they can be **high** with characteristics of independency, autonomy, personal development and inclusion to core groups of work force. On the other hand the skills can be relatively **low**, which correlate with unstable labour market position and membership of marginal work force. In general the more one have a skill the more likely is that the employer will address functional flexibility towards him. On the contrary low skill workers have a higher probability to meet numerical flexibility on their work place. (Atkinson; 1987, Nätti; 1988, Räisänen; 1992, Storper & Scott; 1990, Paananen & Ylöstalo; 1994.)

Making dichotomies on these three factors it is possible to explain the differences in labour conditions among Teleworkers in global, national and company level by placing observations on the their structural concepts. Telework on more regulated labour markets will take place among skilled, white collar workers and in work places which run the policy of functional flexibility. On the less regulated labour markets there are telework both among high and low skilled workers. Labour market segmentation will lead to polarization in labour conditions. High skilled workers enjoy the benefits of functional flexibility and low skilled workers face the harness of numerical flexibility.

When we take a look for findings we can see, that on more regulated labour markets telework applications fit the nature of functional flexibility and on the less regulated labour markets we find both numerical and functional labour market flexibility because of the labour market segmentation. (Figure 1. and 2.)

Figure 1. Telework applications on the more regulated labour markets

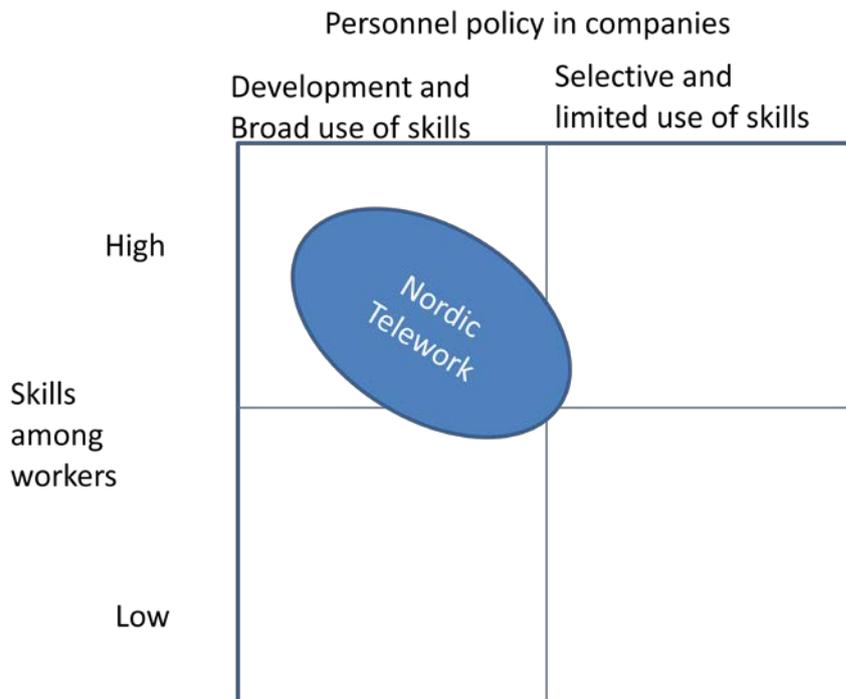
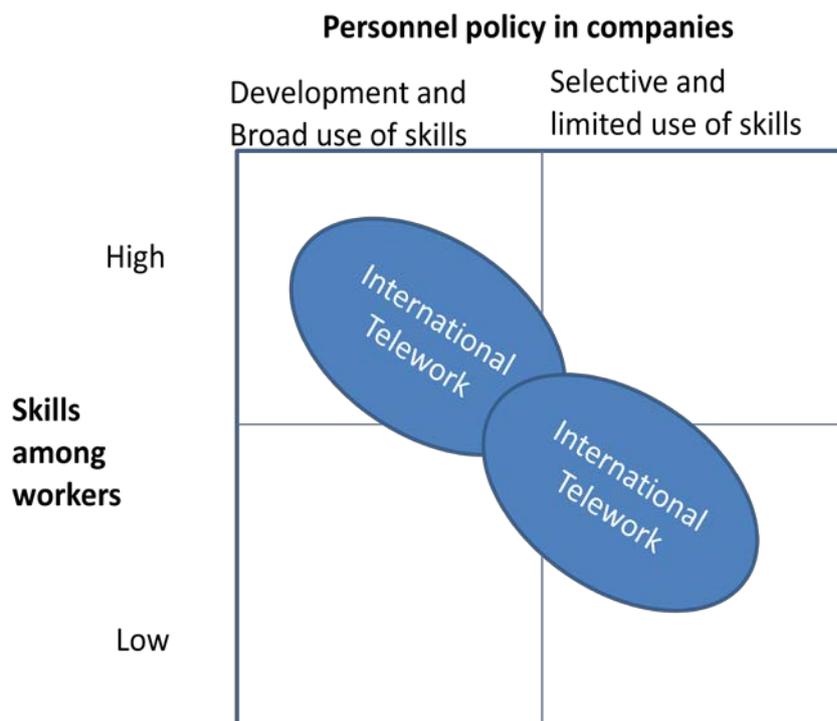


Figure 2. Telework applications on the less regulated labour markets



The choices of the management, role of social partners etc. can be of various natures. Social partners are involved in the introduction of telework in various manners. Some labour unions are resisting and trying to prohibit the whole phenomenon especially in USA and central Europe. White collar unions in Nordic Countries are doing co-operation with employers in order to boost and manage this new type or knowledge work and some are promoting telework as an opportunity for their members. Accordingly the attitudes and policies vary on employer side based on the nature of personnel policy. (see chapter 1.)

### 3. Labour market position and quality of work among Teleworkers during transformation period to telework in Finland.

It has been difficult to analyze the amount and nature of Teleworkers in surveys because the definitions vary and are not even comparable from time to time. In Finland the share of Teleworkers vary between 4,3% and 16.8% in several empirical surveys during 1994-2000. The changes in numbers of Teleworkers are nonlinear, which is cannot be correct. The main trend of telework for sure is increasing. According Working life barometer 1997 12,5% and according ECATT survey 1999 16,8% of Finnish workforce did at least some telework. People teleworked in various places like home, when traveling, in customer’s premises, etc. In addition they had a conventional work place. The impact of ICT in work organization was visible already during late 90s. (Pekkola; 2002.)

Teleworkers in Finland are 2/3 upper white collar workers<sup>1</sup>. Less than 1/3 are lower white collar workers<sup>2</sup> and only 3% were blue collar workers at end of 90s`. The gender balance was almost even in 1997 but the data in the year 2000 demonstrate increase of telework among men. Teleworkers are highly educated and earn more than average workers.

**Table 1. Teleworkers in Finland 1997**

	No telework % n 988	Do at least some telework % n 137
Blue collar workers	42	3
Lower white collar workers	43	29
Upper white collar workers	15	68
	100	100

The labour market position of Teleworkers in Finland is mainly similar with non Teleworkers. Both are 83%-84% working in permanent and 17%-16% in fixed term contacts. During early 90` the relative labour market position of Teleworkers improved but during late 90`s the labour market position of Teleworkers in terms of the threat of lay out or redundancy is mainly the same as among all others. Among upper teleworking white collar workers the possibility of lay out, redundancy or transfer is higher than among non teleworking upper white collar workers. The impact of labour market model is visible here.

<sup>1</sup> Upper-level clerical employees

<sup>2</sup> subordinate clerical employees

High unionization and comprehensive collective agreements protect blue collar workers up to the level of white collar workers. Numerical flexibility and telework seem not to fit together in Nordic labour markets. The main beneficiaries in terms of labour market position are lower white collar workers. They meet less often patterns of numerical flexibility and they are a lot more confident than their non teleworking colleagues to find a new job if needed. (Pekkola; 2002, 62-73.)

Nearly all Teleworkers are in information occupations. They perform their tasks a bit often in group work and pay systems among them are more sophisticated. Teleworkers have more impact on their own work and they have more autonomy in working time compared with non Teleworkers. Within upper and lower white collar workers unpaid overtime work and long working hours are more typical among Teleworkers as well as periodical variations in working time. In general this does not mean the loss of control, but mainly voluntary and subjective working time arrangements to organize work, that is, the functions of management are dealt by white collars themselves. Anyhow these are phenomenons of numerical labour market policies. Teleworkers are a target of various kind of labour market flexibility but the subjects of this policy are both employers' and Teleworkers themselves. Despite of increasing elements of numerical flexibility the labour market position is still high among upper white collar teleworkers. (Pekkola; 2002, 62-73.)

The quality of work is better among Finnish teleworking upper white collar workers in terms of meaningfulness, gender equality, environmental performance of the work place, information flow, management styles, opportunities for development at work and possibilities to have an impact on own work compared with their non teleworking colleagues. However these differences are not statistically significant. (Table 2.)

**Table 2. The quality of work and telework. Finnish upper white collar workers 1997 +/- balance Working life barometer**

	<b>No telework % n 152-153</b>	<b>Telework % n 92-93</b>
Meaningfulness and willingness to work (Paerson Chi-Square ,171)	20	24
Gender equality at work (Paerson Chi-Square ,626)	25	36
Taking into account environmental questions at work place (Paerson Chi-Square ,809)	69	77
Information about future places at work (Paerson Chi-Square ,399)	55	62
Positive management style (Paerson Chi-Square ,632)	31	41
Self development at work (Paerson Chi-Square ,084)	47	67
Impact on position and tasks at work (Paerson Chi-Square ,576)	31	42
Positive economical performance of the workplace (Paerson Chi-Square ,539)	14	11

The differences between Teleworkers and non Teleworkers are more prominent among lower white collar workers. Differences in management style and the positivity of economical performance of the workplace are statistically significant. Also the gender equality seem to be better well of among teleworking lower white collar workers. We can conclude that the main beneficiaries of telework are lower white collar workers who are mainly women.

**Table 3. The quality of work and telework. Finnish lower white collar workers 1997 +/- balance Working life barometer**

	<b>No telework % n 412-416</b>	<b>Telework % n 40</b>
Meaningfulness and willingness to work (Paerson Chi-Square , 235)	12	33
Gender equality at work (Paerson Chi-Square ,006)	19	30
Taking into account environmental questions at work place (Paerson Chi-Square ,024)	68	95
Information about future places at work (Paerson Chi-Square ,306)	39	55
Positive management style (Paerson Chi-Square ,000)	22	45
Self development at work (Paerson Chi-Square ,018)	49	65
Impact on position and tasks at work (Paerson Chi-Square ,043)	26	50
Positive economical performance of the workplace (Paerson Chi-Square ,002)	12	53

The main negative side of telework is the attraction to prolonged working hours. The responsibility to make compromises is mainly among Teleworkers themselves. Government and health institutions give some general advice and some companies take care of working hours. Anyhow the majority of telework is dependent on the management of Teleworkers themselves.

#### **4. The nature of informality in telework**

Some of the most interesting question around telework is about the voluntariness and subjects of this organization. The critic of telework is based on non voluntary home work. (see chapter 1.) Main problem in analysing survey data is the fact that the amount of Teleworkers and the sample selected is mainly dependent of the (non rational) definition concerning the possible agreement on telework. If the criterion for telework is an agreement or even a formal agreement on telework, the share of Teleworkers is always low. If the definition is based on the place and time of work and the usage of ICT, the number of Teleworkers is a lot higher.

Our studies during mid 90's in Finland demonstrate that 4/5 off all telework took place without any agreement between employee and employer. Only 1/5 of telework is based of formal agreements. (Luukinen & Pekkola; 1996, Pekkola; 1998, Pekkola; 2002, 85.) Until some other evidence is shown we can make a strong hypothesis, that his is the structure still today.

The study of Antila and Ylöstalo tell the same type of story. People work at home especially on proactive work places. This work is mainly done without an agreement with employer. In addition there is agreed work at home as well a combination of both of these. In addition there is “telework”, which is defined to be “something else” than work at home with computer. (Table 4.)

In the year 2011 41% of Finnish work force did at least some work at home and 34% worked in some other premises than traditional workplace or at home. (Aho & Mäkiäho; 2012.)

**Table 4. Working with computer at home in proactive and traditional work places during late 90’s in Finland**

	<b>Proactive work place %</b>	<b>Traditional work place %</b>
Working sometimes or partly at home; of them:	36	18
- over time work at home, without agreement with employer	46	55
- some part of working time agreed to take place at home	40	33
- both unofficial over time and agreed work at home	14	12
- Telework	15	12

Source: Antila & Ylöstalo; 2000, 30.

The informality of telework connects to the needs of employee to organize his / her own work. Teleworkers are mainly professionals with competence and autonomy. Their tasks are evaluated more often by outcomes and not only according working time used. Their work is of non standard nature and complicated. It is not possible to put it in tight format or monitor it in details. This lead to self based organization of work in terms of time and place.

The generation of ideas is less and less dependent on traditional work place. Often the ideas are generated among customers and other stakeholders where ever people meet and especially in virtual working environments. In fact the connectivity and ability to reach colleagues and information sources are of first priority. Often professionals even must avoid disturbances on the traditional work place and have to concentrate on their own issues somewhere else. This is possible by selecting and combining physical, social, virtual and mental work spaces.

Generating knowledge by using these environments is the real essence of telework. Therefore we could also call it “individually selected form of presence” in ideal networks. This presence is dominated by the requirements of work in the format the employee him / her think to be relevant. Therefore the obstacles of formal order are less important. On the other hand employers’ are aware of these practices and allow freedom needed for employees. Sometimes employers also avoid labour costs and the costs of equipment and office space when they “allow” employees to stay in informal telework.

We could even ask, up to which degree it possible to manage nonstandard innovation process at all? What else the management should do but allow employees to adapt themselves in innovation processes and trust on their competence and networks?

## **5. The concepts and rationality among management as well as outcomes in the organization**

The main motives of employers to organize telework are: management of time, productivity, allocation of work load and motivation of employees. (Pekkola; 2002, 224.) These goals are related to production of knowledge in borderless environments, value added chains and networks. The essence of information work is not bound to any place. The interest of proactive companies is to position themselves into complex value chains in order to produce knowledge their customers need. This is possible only via human contributions by their own workers and contributions of all others connected in value chain. The possibility to flexible working place and working hours are a precondition of access to information. Telework is a form of work organization which allows intellectual penetration into social and virtual environments.

The essence of telework is spatial flexibility but also flexibility in time. This means the mix of traditional 7/24 time and harnessing of synchronous and asynchronous time concepts in virtual space. These time contexts are presentations of work- and innovation processes. (Compare: Nowotny; 1994.) The support for human thinking and performance are the benefits of computer- and information technology. (Engelbart; 1962.)

The aim of telework is make the presence in value added chains possible for companies. The nature of this processes can be described for instance by theories of Intellectual Capital. The more human capital is combined with structural capital the more the company is able to generate customer capital. (Stewart; 1997; 158., Pekkola; 2011.) Innovative work organization is precondition for the ability to organize successful business.

The benefits of telework are not absolute. The outcomes of telework relate to the business process, especially to the development of product- and process innovations. At the very end the elements of efficiency in telework are the supports to human performance. These benefits can be divided to economical and organizational gains for the company and to personal gains for the employee. Therefore telework within functional flexibility is a win-win concept. (Pekkola; 2002.)

## **6. Contemporary discussion on labour markets about telework on the labour markets**

The less problematic nature of telework and the European collective agreement on telework is sopped the critics around telework in Finland. On the contrary the government and social partners have together promoted the introduction of telework. This discourse is restricted to conventional thinking and patterns of labour market negotiations. The benefits of telework are understood in forms of the benefits for social partners and for the society. However the essence of telework as virtual presence or participation in intellectual processes is not common even among researchers (compare Ojala; 2009.). In fact social partners support business processes by accepting the EU-convention about telework and by implementing it as a part of labour market system.

At the moment there are a discussion about the dispersion of working times and the mix between work and leisure time. In fact the working time is chattered over days and weeks. In general 41 % of all workers take contacts with customers beyond normal working hours (Aho & Mäkiäho; 2012.) When we bear in mind that telework is most common among upper white collar workers we can assume that the traditions of work spread between white and

blue collar workers at the moment in Finland. White collar workers give their contributions via mobile or smart phones, lap tops etc. regardless of conventional working hours and they are integrated. Blue collar workers are not connected in information economy in forms of virtual innovation processes. This is midterm harm for blue collar workers labour market position and structural threat for hem in long run.

European commission has taken an intermediate role in Europe. Instead of giving a directive about telework the European Commission asked European social partners to reach a consensus on the conditions of telework and implement them on national basis. This policy was a success. These days we have confident European policy and organic agreement about telework among social partner which has a status of labour agreement. European labour market has taken a significant step towards regulation especially related to telework.

### **Sources:**

Alasoini Tuomo; Labour market flexibility and work organization in Finland, Some general trends, Publication of Labour administration No 6, Ministry of Labour, Helsinki 1990.

Aho Simo, Mäkiahho Ari; Työolobarometri lokakuu 2011 ennakkotietoja, Työ- ja elinkeinoministeriö, Tem raportteja 4/2012, 2012.

Antila Juha, Ylöstalo Pekka; Functional Flexibility and Workplace Success in Finland, Flexible Enterprise Project, Labour policy studies 206, Ministry of Labour, Helsinki 1999.

Arnal Etena, Ok Wooseok, Torres Raymond; Knowledge, work organization and economical growth, Labour market and social policy occasional papers No. 50, OECD, DEELSA/ELSA/WD, 2001. Bakke; 1993

Atkinson John; Flexibility or fragmentation? The United Kingdom Labour Market in the Eighties, Labour and Society, Vol 12, No 1, January 1987.

Bertin Imogen, Denbigh Allan; The Teleworking Handbook, New ways of working in the information Society, TCA 1996.

Boldt Peter, Laine Pekka; Joustavuus työmarkkinarakenteet ja työttömyys, Taloustieto 1/2001.

Chamot Dennis, Zalysky John L.; Use and Misuse of Workstations at Home. In Office Workstations in the Home, Board on Telecommunications and Computer Applications, Commission on Engineering and Technical Systems, National Research Council, National Academy Press, Washington, D. C. 1985.

Conditions for the Development of New Ways of Working and Electronic Commerce in Finland, ECaTT National Report – Finland, University of Tampere, Institute for Extension Studies, The project and Consultation Unit, Tampere 2000.

Conditions of Work digest; Telework, Volume 9, Number 1 1990, International Labour Office Geneve.

Di Martino Vittorio, Writh Linda; Telework: A new way of working and living International Labour Review, Vol 129, 1990, No 5.

ECATT - Conditions for the Development of New Ways of Working and Electronic Commerce in Finland, ECaTT National Report – Finland, University of Tampere, Institute for Extension Studies, The project and Consultation Unit, Tampere 2000.

Engelbart Douglas C.; Augmenting Human Intellect, A Conceptual Framework, Air Force Office of Scientific Research, AFOS-3223, Washington D.C., 1962.

Engeström Mats-G, Eriksson Gunnar, Johanson Rikard; Att flexa tid och rum: Distansarbetets struktur och tendenser, Byggnadsforskningsrådets I samarbete med Arbetsmiljöfonden, T8: 1990, Stockholm.

Engeström Mats-G, Johanson Rikard; IT and alternative forms of working, living and communication – By flexibility in time, space and organisation. In Teleworking environments, Proceedings of the Third International Workshop on Telework, Turku Finland, Turku Centre for Computer Science TUCS General Publication No 8, Sep 1998.

Fischer Ulrich; Betriebliche Möglichkeiten der Sozialen Gestaltung von Telearbeit, InfoTech, Moderne Technik Arbeit Umwelt Gesellschaft, Jg4, Heft 2 Juni-Aug. 1992.

Heikkilä Asko; Työlainsäädäntö ja sosiaaliturva etätyössä, EU-komission Euroopan etätyötutkimuksen Suomen osaraportti, Työpoliittinen tutkimus nro 126, Työministeriö Helsinki 1996.

Huws Ursula, Korte Werner B, Robinson Simon; Telework, Towards the Elusive Office, John Wiley Information systems series, 1990.

Julkunen Raija, Nätti Jouko; The Modernization of Working Times, Flexibility and Work Sharing in Finland, Laukaa 1999.

Kawakami Steven E; Electronic Homework; Problems and Prospects From a Human Resources Perspective, report for tutorial seminar LIR 494, Institute of Labour and Industrial Relations, University of Illinois at Urbana-Champaign, Sep 7 1983, In Office Workstations in the Home 1985.

Kubick Herbert, Fischer Ulrich; Homework in the Federal Republic of Germany, Historical Background and Future perspectives from Workers point of view, hand out in Telework conference in Bonn March 1987.

Luukinen Ari, Pekkola Juhani, Heikkilä Asko, Zamindar Marya; Directions of Telework in Finland, Report by the Finnish Experience with Telework Project, publication of Labour Administration 143, Ministry of Labour 1996.

Nowotny Helga; Time, The Modern and Postmodern Experience, Polity Press 1994.

Nätti Jouko; Työmarkkinoiden lohkoutuminen Suomessa, Työvoimaministeriö, suunnitteluosasto, Nro 78, Helsinki 1988.

Ojala Satu; Työ hajautuu – missä käsitteen rajat? Työelämän tutkimus 2/2009.

Oldfield Margaret A; The Electronic Cottage – boon or bane for mothers? Observations from an empirical study of mothers doing electrical work on computers in their homes, In Lehto Anna.Maija, Eriksson Inger (ed.) Proceedings of the conference on Women, Work and Computerization, Helsinki 1991.

Paananen Seppo, Ylöstalo Pekka; Rakenne ja muutos, Palkansaajaväestön rakenne 1989-1991, Työministeriö, Työpoliittinen tutkimus 80, Helsinki 1994.

Paavonen Walter; Arbete på distans, förutsättningar och konsekvenser, Stockholms universitet, Företagekonomiska institutionen R 1992:6.

Pekkola Juhani; Etätyön soveltaminen henkilökohtaisella, tuotanto-organisaation ja työmarkkinajärjestelmän tasolla, Työpoliittinen tutkimus Nro 47, Työministeriö, Helsinki 1993. (Telework applications on individual,- organizational- and labour market level, Labour Policy Studies Number 47, Ministry of Labour, Helsinki 1993.)

Pekkola Juhani; Etätyön tehokkuustekijät ja liiketoimintaympäristön haasteet. Etätyön osaamisverkoston 3. kokoontuminen, Jyväskylän yliopisto 15.-16.10.1998.

Pekkola Juhani; Etätyö Suomessa; Fyysiset-, virtuaaliset-, sosiaaliset- ja henkiset työtilat etätyöympäristöinä.(Telework in Finland; Physical, virtual, social and mental spaces as working environments for telework.) Swedish School of Economics and Business Administration; Ekonomi och samhälle 104, Helsinki 2002.

Pekkola juhani; Telework type of work organisation and the structure of Intellectual Capital in two modern Finnish companies at the beginning of 3rd millennium. In: El Cid (ed.) Telework Argentina; Telework for sustainable development, United States & Argentina, may 2011.

På lagom distans; För och emot distansarbete, TOC, 1987.

Räisänen Heikki; Työmarkkinoiden rakenne ja työllisyyspolitiikka, Helsingin yliopisto, Sosiaalipolitiikan laitos, Tutkimuksia No 3/1992, Helsinki 1992.

Stewart Thomas A.; Intellectual Capital, The new wealth of Organizations, New York, 1997.

Storper Michael, Scott Allen; Work organization and local labour markets in an era of flexible production, International Labour Review, Vol 129, 1990, No 5, 1990.

The State of California Telecommuting Pilot Project 1990, final report, Jala Associates, Inc, Los Angeles 1990.

Tuliara Merr, Paanetoja Jaana; Etätyö ja vajaatyökykyiset, Tutkimus Invalidiliitto ry:n Horizon TIME projektista, Adapt/Employment – julkaisut No 18, Työministeriö 1999.

Vega Ruiz Lutz; Home work, Towards a new regulatory framework, 1992 International Labour Review, Vol 131, No 2, 1992.

Vorjans Bernd; Tele-Heimarbeit Möglichkeiten – Probleme – Perspektiven, Soziopolitische Auswirkungen Neuer Informations- und kommunikationstechnologien am Einzelbeispiel, Europäische Hochschulschriften Reihe XXII 1987 Soziologie, Bd/Vol. 140, Frankfurt am Mein 1987.

Ylöstalo Pekka; Technological and organizational changes at functionally flexible and traditional work places, In Antila & Ylöstalo 1999.