

Teleworking as a Modifier Element of the Socio-Economic Environment

Roberto Fernández Gago
José-Ángel Miguel Dávila

RESUMO

O artigo propõe uma reflexão sobre o trabalho à distância, tratando da questão do sujeito frente ao ponto de vista da organização formal e apontando algumas vantagens e desvantagens das organizações informais prestadoras de serviços, dos trabalhadores e da sociedade em geral. Finalmente, pretende apresentar a relativa importância do sujeito trabalhador, uma pequena síntese da posição corrente do desenvolvimento do trabalho à distância na União Europeia e suas diferenças regionais internas bem como uma pequena apresentação nos Estados Unidos.

Palavras-chave: Trabalho à distância, desenvolvimento, trabalhadores, organizações formais.

ABSTRACT

This article offers a reflection of teleworking, dealing with the subject from the viewpoint of the transactional organization and pointing out some of the advantages and disadvantages for the organization itself, its workers and society in general. Finally, with the aim of showing the relative importance of this subject, a short synthesis of the current status of the development of teleworking in the European Union and the internal differences within its regions as well as with regard to the United States is shown.

Key words: Teleworking, development, workers, transactions organization.

INTRODUCTION

Teleworking is a recently created form of work. The process of adoption and spread of teleworking is a function of a number of varied parameters (Ruppel, 1998). Although it has not attained the speed that many initially predicted, everything seems to indicate it has

a bright future ahead of it. At first only a few firms accepted the major organizational changes required by teleworking, with the hope of seeing increased productivity and flexibility, thus manifesting the innovative characteristics that have been the distinguishing feature of entrepreneurs (Schumpeter, 1984).

Dr. Roberto Fernández Gago; Dr. José-Ángel Miguel Dávila são Doutores, professores do Departamento de Direção e Economia de Empresa da Universidade de León – Espanha. E-mail: ddejmd@isidoro.unileon.es

Apart from any interest those involved may have in teleworking because of the advantages it might bring them, as discussed later, it is clear that technological developments are one of the fundamental causes of its expansion. Alongside the increased performance arising from technological improvements in computing and telecommunications, there is a decrease in costs which seems only now to be making itself felt in a significant way. Thus, although optimistic forecasts about the potential of teleworking were already being made before there was technology available to implement it, it appears at present that the technological opportunity now in existence is also becoming an economic opportunity in most developed countries.

In any case, the growth in teleworking is not surprising if one keeps in mind the fact that the jobs most suited to adopting this form of working have to do with handling information, and these are undergoing continuous expansion within a society that is now generally known as the «Information Society». It is also worthy mentioning the effort being made by various governments to promote research into, and establishment of, teleworking, with the ultimate aim of combating unemployment and improving the social wellbeing of their citizens.

It is hard to find a precise definition of what is meant by teleworking, given the ambiguity with which the topic has been discussed. Here the definition put forward by Gray, Hodson and Gordon will be followed (Gray, 1995). They state that teleworking is a flexible form of work organization consisting of professional activities being carried out without the physical presence of the worker in the enterprise for a substantial part of the working hours, and that it covers a wide range of activities, which may be full-time or part-time. They also comment that work through teleworking requires the permanent use of some form of telecommunications to maintain contact between the teleworker and the enterprise.

This wide-ranging definition includes a number of different types of relationship between worker and employer. Thus, there may be a contract for a specific piece of work, a short fixed-term contract, or an employment on fixed or variable hours, with the teleworker taken onto the staff of the firm or remaining

outside it. The teleworkers may carry out their tasks from home, from a branch site, a telecentre, or the client's premises, or even from a number of places (mobile or peripatetic working). In any case, there must be communication between workers and firm by the transmission of voice, data or images through some form of telecommunications: phone, fax, videoconferencing, internet, and so forth (Ortiz, 1995).

TELEWORKING AND THE ORGANIZATION OF ECONOMIC ACTIVITY

If seen from the viewpoint of the transaction cost economy (Coase, 1937), we could say that technological development and teleworking are creating a substantial change in the environmental conditions in which those transactions aimed at contracting some services related to information processing will be developed.

Since, some works can be performed from different places, the organization appears to be defined, more than ever, by those people from which it is made up and for the relationships established between them. In fact, on many occasions the idea of organization disappears and the work previously performed by a team acting in a planned way is now carried out through freelancers who hire the contract of specialized services through the new means of communication. In this way, the physical support which acted as a link among the members of the team disappears, and together with it, the fixed costs which accompanied it. The coordination instrument of these transactions now resembles the market more, although in this case it is a virtual market, as there are discrete transactions established with a very precise aim and with the validity strictly necessary to achieve this goal. The contracts established among all the parties involved will be complete, multilateral and without delegation of authority, all of them typical characteristics of the contracts made in the markets (Fumás, 1984).

The technological development has contributed to the reduction of information costs, which make up one of the main transaction costs in which the market as an instrument of coordination incurs. In fact the worldwide

shopwindow which is Internet allows a fast and easy access to a multitude of freelancers with whom it could be interesting to obtain some type of exchange as well as knowing the offer made by each one of them and the price they demand. If the relationships established within this market among freelancers for the execution of a determined project are repeated in successive projects, each part will be able to prove that its behaviour is the right one for the interests of the other part. In this way, as long as the transactions are repeated the remaining transaction costs typical of the market like the costs related to negotiation and contractual draft of the agreements and the need to control the other agents or offer guarantees to them will be reduced. This would be an intermediate situation between a pure market and an organization, since the agents maintain their independence but the continuity in their relationships would create a permanent quasi-organization.

Finally, if these relationships reach stability, with the aim of increasing the global productivity it could be interesting to check the profit of each one of them, to achieve this, a certain loss of individual independence is accepted assuming the authority of a supervisor who will mark the working of the group in a planned way (Alchian, 1972). Then, we could talk of the birth of a virtual organization. It is quite clear that this virtual organization characterized by the absence of a continuous and direct contract between the members of the team and the hierarchical authorities will not be able to implement a rigid control similar to that of the traditional organizations. The relationships of agency (Jensen, 1976) created at its heart will be characterized by disposing of an important part of power decision delegation which strengthens the possibility of conflicts among the parties. Management by objectives (Drucker, 1954): is highlighted as the best form of management when facing a situation like the one planned here, as it tries to define negotiated and interrelated objectives which serve as a guideline for individual action and its evaluation, and leads to a beneficial goal for the organization as a whole.

ADVANTAGES AND DISADVANTAGES OF TELEWORKING

In order to sharpen somewhat the definition of teleworking just given, and

concentrating essentially on teleworkers operating from home, details of what we see as the most striking advantages and disadvantages of it will now be summarized. This presentation will be ordered on the basis of those who gain or lose most by the adoption of teleworking: businesses, workers, and society in general.

Advantages for businesses

a. Financial advantages:

- The most obvious of all the advantages is the reduction in fixed costs that is achieved when the physical space needed by the employees to carry out their work is moved into their own homes, or, where this format is used, into premises situated far away from city centres. In addition, travel costs for employees borne by the business could also be diminished.

- Teleworking gives the firm a greater degree of flexibility, which in changing and turbulent environments is always desirable (Skyrme, 1994). The adoption of teleworking is a form of flexiworking that is compatible with others relating to the number and distribution of hours worked (part-time work, job sharing, flexihours, overtime, shift work and so on), contractual flexibility (short-term jobs and subcontracting), flexibility in the length of a working life (early retirement and periods of unpaid leave of absence), flexibility in job description and flexibility of pay (AEDIPE, 1995).

- According to a number of studies, an increase in productivity is achieved, principally as an outcome of the greater optimization of time use by workers, who can attain higher levels of concentration and suffer fewer interruptions.

b. Staffing advantages:

- Access to good staff who need flexibility in their working time and place of work is enhanced, as is their retention in the company.

- Levels of absenteeism drop.

- Meetings and contact between workers become less easy, which may have the result of decreasing labour conflicts and lessening the influence of those in the business who attempt to divert the organization towards aims which are in their own personal interest;

- Access to information for workers is greater and faster, which has the potential for expanding explicit knowledge (Raghuram, 1996).

c. Organizational and managerial advantages:

- Physical decentralization is achieved without logical centralization being lost;
- A greater latitude in establishing the framework of business management is possible, which may result in a wider variety of contributions from employees with a view to improving it. Contracts drawn up with teleworkers are of a more relational nature than classic contracts. The fact that duties are not specified in detail permits and often stimulates flexibility. It also avoids the inhibitions affecting the flow of information that arise from classic contracts, under which information is withheld for fear it might be used against the person supplying it (Kay, 1994).
- The organizational change necessarily brings about a decrease in the level of supervision maintained, and thereby in the number of layers in the hierarchy, as these exist because the number of staff a superior can control effectively is limited. This reduction brings down the cost of operating the structure of the business, makes co-ordination between levels easier, and aids communication and the tasks of planning and control.

Advantages for workers

- Greater freedom and independence: the timetable is more flexible and better adapted to personal and household tasks; there is no need to fulfil certain formalities required within the business; there is the possibility of personal choice of the best atmosphere to work in; one's job has less impact on the choice of a place to live; there are savings of time and money as there is less travelling; and so forth. To sum up, all of the above lead to an improvement in the quality of life and a decrease in levels of stress for the workers.
- There is the possibility of increasing the amount of pay received thanks to improved productivity, and even through providing services to several different firms by taking on the role of freelance teleworker. Furthermore, since these freelancers do not depend exclusively on the relationship established with a unique employer but they can have a wide range of potential customers, they will dispose of a greater personal safety.
- Training undergone and knowledge acquired relating to information technology and to telecommunications give the worker a better position in the job market.

Advantages for society

- Less travelling gives rise to the following advantages for society: lessened traffic congestion, particularly in town centres; energy savings; fewer accidents; reduced pollution and environmental impact.
- There are more openings in the job market for the disabled, as physical obstacles are no longer present (Woelders, 1990), and for those who require greater flexibility in working hours.
- It assists in the economic development of depressed areas and combats problems of depopulation (Martin and McKeon, 1993).
- There is a reduction in the price of land and buildings in urban areas, since the demand for them from businesses is decreased.
- As new services appear which can be offered through teleworking and which do not simply replace former operations, there can be a growth in demand for these services and thus increased employment.

Disadvantages for businesses

a. Financial disadvantages:

- The first obstacle to be overcome is the investment required in order to set up new technology allowing teleworking to be put into operation. Normally the cost of equipment is borne by the company, although it is sometimes the workers themselves who provide it, and on other occasions there are rental arrangements.
- The costs of maintenance and renewal of equipment may rise because of the loss of control over how it is used by workers in their homes.

b. Staffing disadvantages:

- It is obvious that not all staff match the profile needed by a teleworker. Adequate staff selection for teleworking posts is not simple and the process has to be performed on a pool of candidates who have coherent and solid working habits, with a good capacity for time management (Mahfoodt, 1995) and a certain degree of personal and family stability. According to a study aimed at defining the typical European teleworker (Carrasco and Salinas, 1994), the latter is characterized by being aged under 40, being an independent worker, habitually using computing equipment, and carrying out work involving

information processing.

- There usually has to be an effort put into training workers to ensure they have the specific skills in information technology and telecommunications that are needed. In fact, it is normally businesses involved in sectors linked to information technology and having staff accustomed to using such equipment that bring in teleworking systems.

- Physical distance from other members of the organization can impede access to certain tacitly understood information (Raghuram, 1996).

c. Organizational and managerial disadvantages:

- It is usual for projects aimed at bringing in teleworking formulas to meet with rejection from the executives, who are reluctant to lose direct control over their staff. One of the first requirements for the success of teleworking is confidence on the part of the managerial staff and their ability to adapt to the new form of management that this approach brings with it (Grensing, 1999).

- The management system will be completely altered, since supervision cannot be as continuous as when employees spend their whole time in the office. This can lead to a state of affairs where control over the workers and over the quality of their work is lost. In fact, it is a question of deciding what degree of freedom is to be granted to the staff to allot their working time to the duties of their posts or to personal matters. An individual enjoying the maximum liberty in this respect will seek to maximize returns and thus will choose to assign time to personal business if its marginal productivity is greater than that of the same amount of time used on work. Teleworking implies extending the amount of freedom granted to staff for personal matters. It entails the adoption of a pay system that will generate opportunity costs for those staff who spend their time on personal business, this being achieved by introducing clear incentives in the measurement of assiduity in work (Milgrom and Roberts, 1993). Thus, it may be concluded that, in view of the complementarity between allowing discretion and giving incentives, and of the fact that teleworking favours discretionary assignment of time, organizations using it will tend to increase the use made of incentives.

- The physical distance between the worker

and the business in many instances causes communication to be discontinuous. Although telecommunication networks allow contact to be maintained, arrangements have to be put in place for personal messages between supervisors and teleworkers, and even between various teleworkers, with a frequency that will generally be a function of the tasks being performed (Duxbury and Neufeld, 1999).

- It is harder to ensure the security of information when this is continuously flowing into and out of the organization. Workers will increasingly see themselves as independent agents, and the question may be asked whether it is appropriate for such agents to have free access to some types of information.

- The more relation-based nature of contracts will only have positive effects if there is a high degree of security in the employment link, since if any party foresees it is soon to end, then opportunistic behaviour will emerge.

Disadvantages for workers

- It is the case that promotions and raises within a job are habitually given to those employees who perform their duties in a visibly successful way (Metzger and Von, 1988). In the light of this it is understandable that there may be a certain reluctance to move to teleworking on the part of some workers, since they may believe that it will damage their career prospects.

- It is hard to establish a clear-cut frontier between private life and work when both go on in the same place.

- There may be a risk that workers no longer having a controlled timetable may try to increase their productivity levels by spending excessive time on work. This would be likely to have negative personal consequences over the longer term.

- There are some people for whom personal contacts and the possibility of varying surroundings from work to home and back again constitute a very rewarding part of their work. With teleworking, they are plunged into an atmosphere of isolation for which they have no desire (Huws, 1998).

- When an employee works from home, it is more difficult to ensure that the employer will not abuse the system.

Disadvantages for society

- There are trades that can be harmed by

teleworking, such as passenger transport companies, some catering or hotel businesses, and building firms.

- New imbalances between regions can arise through the different levels of technological infrastructure available in each (Ortiz, 1994).

- Society could become dehumanized as the level of personal contacts maintained through work decreases (Agres, Edberg and Igaria,1998).

DEVELOPMENT OF TELEWORKING IN EUROPE

According to indications from the European Commission (EC, 1998), four main features characterize the state of teleworking in the European Union:

- Teleworking taken as a whole is growing at a high rate in Europe.

- Teleworking is increasingly seen applied in combination with other techniques typical of the Information Society, principally telesales and telecooperation.

- There are clear differences in the nature of teleworking and the role it plays according to which country or region is involved and the organizational surroundings found there.

- There are still major obstacles holding back the progress of teleworking. One is the requirement for a high degree of confidence in teleworking from the management and employees involved, especially in the case of organizations that are not in constant contact with information technology and telecommunications. There is also a need for

a positive attitude towards teleworking on the part of local government and the trade unions.

Although it is true that teleworking constituted a type of work which could only be found in Europe in very concrete situations where both the companies and workers involved were directly related to the new technologies of information and communication processing, nowadays its expansion is more and more obvious and reaches a more diverse field of activities.

According to the European Commission (EC, 1999), four different stages in the evolution of teleworking in Europe can be distinguished. Firstly, throughout the eighties, teleworking was mainly a research and analysis subject for researchers and politicians, with almost a million users mainly technologically highly skilled. In the first half of the nineties this number doubled but the final taking off of teleworkers took place in the years 1997-98, it was then when teleworking became an appropriate option to satisfy the economic and general interests of both employers and workers. The data corresponding to this third stage show figures between two and four and a half million users, although it is considered that the real data were much higher than those estimates. Finally, the fourth stage places us in 1999, when teleworking adopted multiple ways having a relevant presence in various economic sectors with a number of teleworkers exceeding nine million (EcaTT, 1999).

The distribution of these workers within the European Union is far from homogeneous with significant variations between the countries which make up Northern Europe and those defining Southern Europe.

Teleworking in Europe:

Country	Teleworkers	% Workforce	Country	Teleworkers	% Workforce
Denmark	1,800,000	5.1	Finland	220,000	10.0
United Kingdom	1,455,000	5.5	Spain	120,000	0.9
Netherlands	1,200,000	18.2	Portugal	100,000	2.2
France	420,000	1.8	Austria	67,000	2.0
Italy	350,000	1.7	Ireland	58,000	7.1
Sweden	300,000	9.0	Greece	50,000	1.3
Denmark	300,000	11.6			
Belgium & Lux.	250,000	6.2	Total	6,690,000	4.5

Source: European Telework Development estimates, 1998-99 (from different quantitative and qualitative surveys and analysis in each country). Figures only include people substantially using the techniques of telework.

These differences are not only shown in the level of expansion of teleworking, but they are also obvious in the degree of development obtained by other aspects of the Information Society such as PCs or Internet. In this sense it must be highlighted that the percentage of European homes disposing of a personal computer stood at 31% in 1998, but while in Sweden it reached 60%, in Greece it was only 12%. With regard to the percentage of homes connected to Internet, the average is 8% although there are also great differences between countries such as those between Greece or Portugal and Sweden, with differences between 3 and 40% respectively (EISB, 1998).

In spite of the efforts carried out in Europe, the leadership with regard to the use of teleworking still belongs to the United States where the estimates were around 15.7 million teleworkers halfway through 1998 (CD, 1999). The main reasons pointed given to explain these differences are the greater development experienced by the United States in the Information Society as well as a far greater favourable bias of its directives towards innovation. With regard to the first cause it must be pointed out that in 1999 more than half of U.S. Homes had a PC and around 30% of them were connected online (ISC, 1999).

CONCLUSIONS

The environmental changes due to technological advances are creating a change in the conditions in which transactions are carried out. In this way, the decrease of information costs could start a trend towards hiring multiple services in the market through freelancers with no need to establish a formal organizational structure which has to be maintained. On the other hand, in the case of opting for decision-taking in a planned way in search of the joint interest of the team, the resulting virtual organization will dispose of its characteristics, among them, the greater delegation of authority and responsibility in each of the components which supposes the need of a change in the management with regard to the traditional structures.

The application of teleworking can bring significant benefits to companies, workers, and society in general, although it can also be the origin of some drawbacks that

must be kept in mind. Some of the more relevant have been studied in this article.

The expansion of teleworking in Europe seems to be finally taking off, although we should not forget to mention the important internal differences between each country. In any case the difference with respect to the United States, indisputable birthplace of teleworking, is at this moment insurmountable.

BIBLIOGRAPHIC NOTES

AEDIPE (Asociación Española de Dirección de Personal [the Spanish Association for Personnel Management]) (1995): *Flexibilidad en el trabajo. Estrategias y prácticas en Europa*. Gestión 2000, Barcelona.

AGRES, C.; EDBERG, D. AND IGARIA, M. (1998): Transformation to Virtual Societies: Forces and Issues. *Information Society*, Vol.14, No.2, pp.71-82.

ALCHIAN, A.A. Y DEMSETZ, H. (1972). Production, information costs and economic organization. *The American Economic Review*, No.62, pp.777-795.

CARRASCO, R. AND SALINAS, J.M. (1994). *Teletrabajo*. Ministerio de Obras Públicas, Transportes y Medio Ambiente [Spanish Department of the Environment], Madrid. A survey carried out for the European Community covering 16,000 workers in Germany, France, Italy and the United Kingdom.

COASE, R.H. (1937). The nature of the firm. *Economica*, No.4, pp.386-405;

CYBER DIALOGUE (1999). *Telecommuting Boosted in 1998 by Internet & Economy*. accesible on the Internet.

DRUCKER, P.F. (1954). *The practice of management*. New York: Harper & Row.

EUROPEAN COMMISSION (1998). *Telework 98, Status Report on European Telework*, accesible on the Internet.

EUROPEAN COMMISSION (1999). *Status Report on European Telework. New Methods of Work 1999*, accesible via the Internet on ECaTT project (EcaTT: Benchmarking Progress on Electronic Commerce and New Methods of Work) led by empirica GmbH, Bonn (Germany). Over 6 million people are

teleworking in ways which significantly affect their working lives and the organizational arrangements adopted and another 3 million Europeans have also started to employ teleworking techniques in practice and it is likely that most of them rapidly increase their use of these methods.

DUXBURY, L. AND NEUFELD, D. (1999). An Empirical Evaluation of the Impacts of Telecommuting on Intra-Organizational Communication. *Journal of Engineering and Technology Management*. Vol.16, No.1, pp.1-28.

GRAY, M.; HODSON, N. AND GORDON, G. (1995). *El teletrabajo*. Madrid: Fundación Universidad Empresa. (The original in English was published in 1993).

GRENSING-POPHAL, L. (1999). Training Supervisors to Manage Teleworkers. *HR Magazine*, Vol.44, No.1, pp.67-72.

HUWS, U (1998). In from the Cold. *People Management*, Vol.4, No.25, pp.34-36.

JENSEN, M.C. Y MECKLING, W.H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, No.3, pp.305-360.

KAY, J. (1994). *Fundamentos del éxito empresarial*. Barcelona: Ariel. (The original in English was published in 1993).

MARTIN, W.J. AND MCKEON, S.F. (1993). The Potential of Information and Telecommunications Technologies for Rural Development. *Information Society*, Vol.9, No.4, pp.145-156.

MAHFOODT, P.E. (1995). *Trabajo a distancia*. Barcelona: Ediciones S.

METZGER, R. AND VON, M.A. (1988). Off-Site

Workers: At Home and Abroad. *California Management Review*. Vol.XXX, No.3, pp.101-111.

MILGROM, P. AND ROBERTS, J. (1993). *Economía, organización y gestión de la empresa*. Barcelona: Ariel. (The original in English was published in 1992).

ORTIZ, F. (1994). El teletrabajo comienza mañana. *Fundesco*, No.157, October, pp.19-20.

ORTIZ, F. (1995). *El teletrabajo. Una nueva sociedad laboral en la era de la tecnología*. Madrid: McGraw-Hill.

RAGHURAM, S. (1996). Knowledge Creation in the Telework Context. *International Journal of Technology Management*. Vol.11, No. 7/8, pp.859-870.

RUPPEL, C.P. AND HOWARD, G.S (1998). Facilitating Innovation, Adoption and Difusion: The Case of Telework. *Information Resources Management Journal*, Vol. 11, No.3, pp.5-15.

SCHUMPETER, J.A. (1984). *Capitalismo, socialismo y democracia*. Barcelona: Folio. (The original in English was published in 1950).

SKYRME, D.J. (1994). Flexible Working: Building a Lean and Responsive Organization. *Long Range Planning*, Vol.27, No.5, pp.98-110.

WOELDERS, H.J. (1990). Telework: New Opportunities for Handicapped Unemployed Workers. *International Journal of Sociology and Social Policy*, Vol.10, No.4/5/6, pp.176-180.

WILLIAMSON, O.E. (1975). *Markets and hierarchies: analysis and antitrust implications*. New York: Free Press.

WILLIAMSON, O.E. (1985). *The economic institutions of capitalism: firms, markets, relational contracting*. New York: Free Press.