

“Creating Employment for People with Disabilities through Telework and Self-employment Models. Cepadite Project” (Carmen Viorreta) -- 1999

Introduction

The Cepadite project is developed within the scope of co-operation between non-profit institutions that share a common concern for the creation and maintenance of jobs and, taking into account the specific difficulties for the disabled to enter the job market, decide to collaborate to develop an innovative pilot experience in the field of creation of employment incorporating ICTs.

The *Cepadite Project* belongs to the EC Initiative HORIZON/EMPLOYMENT. The public co-financing entities of the project are the European Social Fund and, at national level, the Ministry of Work and Social Affairs-IMSERSO

The private co-financing entities who participate in the project are:

- As promoter of the Project: *CEPES-Confederación Empresarial Española de la Economía Social (The Spanish Business Confederation for Social Economy)* – is a professional independent organisation of national scope, that is intersectorial and confederative in nature, made up of 15 confederations. that group together some 20,000 enterprises of the social economy sector, maintain approximately 600,000 jobs and amount to about 5% of the GPD (gross domestic product).
- *FUNDOSA Teleservicios S.A. - Fundación ONCE (Foundation of the National Association for the Blind)*, a state organisation that maintains more than 23,000 jobs for the disabled.
- *FREMAP, Social Security Mutual Society for Labour Accidents and Professional Illnesses nº 61*, is a mutual entity which runs a service that offers professional training in 11 areas and 22 specialities for people with physical handicaps.
- *Bioingeniería Aragonesa S.L.*, is an enterprise dedicated to the development of high technology that participates in many national and European R&D programmes

The following objectives are worth pointing out:

- To facilitate the socio-labour integration of people with disabilities, since the unemployment rates for these social groups is four times higher than for the rest of the population in Spain.
- To generate an innovative experience of creating employment for the disabled by way of incorporating teleworking models and self-employment formulas
- To contribute to the development of strategies by way of the exchange of experiences on a European level in order to promote new forms of work organisation
- To make companies aware of the need to hire workers with disabilities
- To experiment with training methodologies for handicapped workers both in the use of telematic tools and in the necessary psychosocial skills for teleworking

The aim of the *CEPADITE Project* is to launch a **teleworking pilot experience** intended for people with disabilities under real conditions of competition, production of tasks and fulfilment of objectives, training, and a trial period in the job market.

The evaluation and permanent monitoring process of the pilot experience try to discover critical factors for the launching of teleworking services for people with disabilities, as well as key factors for accepting teleworkers and companies. The evaluation process will be undertaken at various levels:

- Evaluation of labour, social and psychological factors that determine the degree of satisfaction of the teleworkers.
- Evaluation of the degree of acceptance of the companies involved.
- Evaluation of management aspects of teleworking services for self-employment teleworkers.
- Evaluation of ergonomic and technical aspects of the working conditions for teleworkers with disabilities.

A methodology based on the analysis of cases will be applied in order to carry out ongoing monitoring of the pilot experience. The holistic approach of the evaluation, achieved by the **cases analysis methodology**, aims at:

- Formative evaluation: Discover the key factors for success and the critical factors associated with the launching of teletraining services and teleworking services, in order to tackle the necessary corrective measures throughout the pilot experience.

- Summative evaluation: To extract results, conclusions and final recommendations of interest for external experts in the field of educational technologies and design of telematic services for the management of employment telecentres and teletraining programmes. The final objective of the evaluation is to draw up a final report (“*Good Practices Guide on Telematics and Disability*”) that will cover practical information on how to design, set up and manage a telecentre for people with disabilities.

Home-based telework modality and profile of participants

The Cepadite Project consists in setting up an experimental Telecentre, so that **20 self-employed people with physical handicaps** can offer services to companies from their homes, in a “**home-based telework**” modality. Following the home-based teleworking model different jobs can be carried out for various companies or institutions at the same time.

This **group of teleworkers is spread all over Spain** (9 people in Madrid and 11 in several of the main cities and smaller towns of the self-governing Communities of Galicia, Basque Provinces, Asturias, Andalusia, Castilla-La Mancha, Extremadura and Castilla-León).

The Cepadite Telecentre is conceived as a support structure that offers different services to teleworkers:

- **Access to telematic resources**
- Prior training in teleworking skills, mainly in a “teletraining mode” from the teleworker’s home
- Permanent technical support
- Business counselling for self-employed workers
- Marketing, monitoring and quality control of work

Teleworkers will offer services to companies in the following activity sectors:

- Graphic design and visual communication
- Creation of Web pages
- Management services: accounting, legal and labour
- Clerical and translation services

Except for two teleworkers who work from an adapted workplace facilitated by a business organisation and a City Hall’s business centre, the teleworkers participate in the project activity from their own homes, as free-lance professionals that offer their services to several companies.

All the teleworkers taking part in the Cepadite Telecentre have some form of physical handicap of varying degree. 30% have hard limited mobility and require a wheelchair. The disabilities are as follows:

congenital agenesis of the left hand, amputation with implant of the left arm. arthrodesis of the left foot, amputation of the right foot, reduced mobility of the left hand, lack of mobility of the left thumb, spasticity of both legs, paralysis of the left side of the body, malfunctioning of the kidneys, congenital deformity of the left hand, problems in the immunological system due to HIV, neuropathy, poliomyelitis, cerebral palsy, Friedrich’s ataxia, paraplegia and tetraplegia.

In most cases these are young unemployment people with no or little professional experience (75%), or people who as a consequence of a labour or traffic accident have had to reorient their professional profile and after a period of retraining and professional adaptation have embarked on a new labour activity within the scope of the Cepadite project (25%).

The majority of the group are males (70%) compared to 30% of females. As regards the different age groups: 30% are under the age of 25; 15% are between 25 and 30 years of age; 35% between 31 and 40 years of age, and 25% over 40 years of age.

The beneficiaries of the project have set themselves up as **free-lance professionals** in various activity sectors: clerical, accounting and management, graphic design and visual communication. During the execution period of the project they are receiving a **self-employment grant** of a total amount of 1,800,000 ptas. (10.818 euros), to cover the setting up and running costs of the teleworking activity to be developed and the costs incurred in establishing themselves as free-lance workers.

Telematic services provided by the Telecentre

The Telecentre offers the teleworkers free access to the following telematic resources:

- Ms Exchange group messaging service
- FTP server
- Internet account which also provides them with a second electronic mailbox
- Cepadite Web-site that offers general information on the project as well as specific information on the professional services provided by the telecentre.

The Telecentre telematic services are provided by way of a server located on a hosting service at an Internet Services Provider (ISP). The teleworker accesses the Telecentre telematics services via the Infovía Plus national network, by connecting to his/her area node, which corresponds to the cost of a local call.

Both servers provide:

- maintenance derived from "Hosting", that covers continuous presence in Internet, and uninterrupted service, such as TCP/IP configurations, DNS services, etc.
- necessary maintenance to support telework (specific user configurations, Web services and FTP, etc.) specific to the services provided and personalised for the users.

Technical specification of the teleworkers workplace

The teleworkers have Basic Rate (2B+D) ISDN access in their workplace, provided by Telefonica, with the exception of those workers who live in rural areas and where ISDN is not available.

Each teleworker has a computer in his/her home with the following minimum features:

- Central Processor Pentium II 400 MHz
- RAM Memory 128 MB
- Hard disk > 8,4 GB
- Graphical adapter AGP with >= 8MB memory
- Multimedia Sound Blaster 16 or higher
- CDROM >= 32x
- Monitor 15" or 17"
- Communications system ISDN EICOM DIVA 2.0 PCI board or US ROBOTICS 56K external modem

Without taking into account the necessary tools for the development of the activity of each teleworker the common basic software for all the computers is as follows:

- Windows 98 or Windows NT Workstation 4.0
- Ms. Office 97
- Client-client programme of the MS Exchange 5.0 group messaging system
- Client programmes of the following tools: Internet Explorer 4.0, Outlook Express, mIRC, Cute FTP, Netmeeting 2.0, Ms fax
- Win Zip
- PC Anywhere Host Remote LAN

Only two people affected by tetraplegia have required specific software or hardware adaptations: voice recognition programmes, a head mouse or a hand joystick mouse.

Technical support for teleworkers

The teleworkers have received individual technical information to allow them to adapt the equipment in their homes and the tools and resources to connect to the Cepadite Telecentre according to the specific requirements of each workplace and the specific disability of each person.

Before starting on the first module of the teletraining programme the equipment and telephone lines were installed in the homes of the teleworkers according to the technical specifications defined for each workplace. In this way, **the**

installation of the telematic tools and the configuration of the teleworkers equipment, necessary to connect to the telematic services provided by the Telecentre, was centralised in Madrid.

From that point on the teleworkers have been receiving **remote technical support** to solve connection problems and difficulties in using the Telecentre telematic resources.

Since the teleworkers are spread over the country, "in situ" support would be very expensive. Therefore, the solution covers support via telephone and e-mail as well as remote control of the PC. Technical support via telephone ("hot-line") is provided during office hours, answering all calls placed by the users without limitations as regards the number of incidences. The following incidences are covered: incidences in the operating system, connection problems, errors in the telematic applications.

An alternative is to use electronic mail for technical support. If it is necessary to connect to the teleworker's computer, as long as the connectivity of the PC is not affected, PCAnywhere software installed on each of the computers is used to take remote control of the PC and solve the problem.

Training and tutoring activities for teleworking

This modality of work essentially linked to ICTs requires changes in procedures and strategies in order to successfully undertake jobs. With regard to teleworkers the aim of running training programmes prior to taking over the work in question is to provide the future teleworker not only with a certain degree of knowledge but also a series of fundamental skills that will allow him/her to handle this new model of work organisation.

One of the features of teleworking is that it requires new forms of organisation and control over the production system. From this point of view it is basic for the training programmes to cover the **management of new telematic tools** and **psychosocial skills** that are necessary for teleworking (planning and definition of terms, objectives, tasks, time management, self-regulation and self-control of the quantity and quality of the work to be undertaken, co-ordination with inter-disciplinary teams, customer attention, etc.).

Since this project deals with a group of people with disabilities the training process has paid particular attention to **ergonomic aspects, prevention of accidents and health at work**, by way of practical training sessions and the application of criteria for the adjustment and adaptation of the human-machine-interface.

The training programme for the teleworkers has been carried out prior to actually offering their services to the companies. The course "Skills for Teleworking" has been designed in a **mixed mode** which combines:

- 2 face-to-face seminars of one week's duration
- 2 months of "teletraining" from the teleworker's home, based on a Ms Exchange group messaging service.

The methodology is of a theoretical-practical nature based on self-study and "collaborative learning" strategies by means of creating discussion groups, both virtually and face-to-face. To this end certain activities have been designed so that the teleworker can develop the capability to structure resources and solutions, to manage his/her work in the broadest sense, to solve problems, acquire resources to resolve conflicts, to carry out negotiations, to develop tools for self-control and strategies for teamworking.

The **teletraining** has been developed using the *Microsoft Exchange 5.0* group messaging system with a client programme installed on the computer of each teleworker. The proposed teletraining activities have been estimated to amount to 6 hours per day (30 hours per week). During the teletraining period, each participant has had access, either from his/her home or remote workplace, to a 'virtual classroom' to participate in individual self-study activities, or group reflection activities, and simulated work tasks either individually or in a team.

The teletraining process, which has applied a methodology based on the **simulation of providing services in teleworking mode**, has allowed for **tutoring and evaluation of the capabilities of each teleworker**.

The capabilities analysis has highlighted the lack of professional qualifications of the teleworkers when faced with providing their services in the activity areas for which they had initially been selected. The said analysis has made it possible to define more closely the services to be provided, initially selected as potential areas, and delimit a provision of services more in line with the capability of response of the group.

Furthermore, the deficiencies detected in the “production capacity” of the teleworkers has made it necessary to **strengthen the individual tutoring and job counselling activities**, in particular:

- Individual and group tutoring activities to encourage the teleworkers to reflect on their professional identity, to recognise their professional qualifications and to understand where they can coherently match the demands of the job market.
- Teletraining activities (“Teleworking Workshops”) to complement the technical-professional profile or the specific professional qualifications of some teleworkers particularly in the areas of Web site creation.
- Orientation concerning training courses offered by entities, external to the Telecentre, in the home areas of the teleworkers (up to June 1999, 45% of the participants have taken additional training to complement their activity in the project depending on their professional recycling needs).
- Measures to organise on-the-job practice periods at companies for those workers needing to come into direct contact with work processes mainly in the graphic arts and visual communication sector.
- Group dynamics activities to encourage exchange of information and creation of virtual groups for reflection by way of the group messaging service.
- Design and tutoring of simulation activities to validate and experiment with teleworking methodologies and management of the telecentre; quality control services, customer services, co-ordination of dispersed workers ...

Business counselling service for free-lance workers

The teleworkers are provided with an individual orientation and counselling service concerning:

- The steps necessary to fulfil the legal requirements to establish themselves as free-lance workers (legal licence, social security registration, and further legal requirements necessary for the development of their activity)
- Steps to obtain disability allowances
- Tax declarations
- Invoicing and accounting concerning their professional services

Marketing and quality control services

From the point of view of managing the telecentre particular attention is being paid to the design and experimentation of teleworking methodologie, quality control protocols and co-ordination of a scattered workforce.

Once the services to be provided and the criteria to approach the market have been defined, direct marketing actions have been initiated in the second semester of 1999 in order to attract companies as potential recipients of the services provided by the teleworkers.

Preliminary conclusions. “Lessons learned”

Although the pilot experience is still in the development phase certain preliminary conclusions can be highlighted.

When defining the potential advantages of teleworking for people with disabilities it is important to take into account the differences that exist in the relationship that is established with the technology. Whereas for a non-handicapped worker the technology simply facilitates the execution of tasks and access to the global job market, in the case of a physically handicapped person the relationship goes much further: the technology compensates for the disability allowing the person to realise his/her full potential, to carry out certain tasks that otherwise would be impossible without an appropriate workteam, to organise him/herself and adapt the pace of work to the restrictions imposed by his/her disability, to have access to sources of information, leisure, continuing training, or access to jobs that would otherwise be unthinkable. To a certain extent, we could say that the physically handicapped person, particularly in the case of important mobility problems, is an essential user of technology, depending on technology for access to employment.

In spite of the potential of telework to provide self-employment opportunities for disabled people it is not an easy task to introduce this modality of work with success.

- Within the scope of the Cepadite project and during the selection phase of the potential teleworkers the **difficulties in selecting unemployed people with disabilities, that would fit the previously defined professional profiles for the various activity areas initially foreseen for the Telecentre**, became apparent.

The low levels of professional qualifications and job experience of the disabled group constituted the first barrier for introducing teleworking models that can only be overcome by carrying out technical and professional training programmes with the said group of unemployed handicapped people.

Parallel to this, two factors were detected during the selection process that dissuaded a high percentage of the most qualified candidates with prior job experience from taking part in the project:

- on the one hand, the fear of losing their disability allowance and not being able to apply for it again if the self-employment experience proved to be unsuccessful
 - on the other, the awareness that the current legislation does not favour self-employment (since these professionals are subject to the same fiscal terms as a company and are at a disadvantage as regards social security and other allowances compared with a worker hired by a company)
- When referring to the **profile of the teleworker** a series of characteristics are taken into account that, from the personal point of view, do not allow for differentiations between people with or without disabilities. The most fundamental characteristics refer to: capacity for organisation and time management, self-discipline, capacity for resolving problems and making decisions, self-motivation, high self-esteem, capacity for communication management, and the skills for combining work and private life. Thus the selection process of potential teleworkers should comprise the evaluation of these psychosocial features.

As well as these personal qualities other aspects such as good use of ICT and a broad telematic culture should be taken into account.

- Thus **training** in the necessary skills for teleworking should comprise the improvement of **psychosocial skills and the acquisition of a solid telematic culture**. Therefore, in this second aspect the training programme not only has to encourage familiarisation with the use of telematic tools but also an open attitude and a suitable disposition on behalf of the teleworker for staying permanently up to date with use of ICT.

In this sense, one observes a greater tendency for a favourable attitude towards the use of ICT in those people with greater mobility problems for whom technologies are a window through which to approach the world and the job market.

- Training teleworkers (with or without disabilities) means **training entrepreneurs** yet this peculiarity is not always taken into account even when it constitutes a key factor for success.

In this sense it is necessary to point out that a large part of the disabled group have lower levels of self-motivation and tend to establish dependency relationships with the counsellors or professionals that participate in the teleworking projects. These professionals have to bear in mind the risks implied in fostering situations of dependency that come into conflict with the attitudes of self-sufficiency and self-confidence that have to be encouraged in the entrepreneur.

- The experience of the Cepadite project has revealed that the **teletraining methodology based on simulation processes** of real services is a factor of key importance as it has made it possible to verify those areas where maladjustment or inadaptation of the selected teleworkers occurs and where it is necessary to take corrective measures and provide complementary support throughout the project.

Assessment of curriculum and personal interviews are not enough to make an appropriate diagnosis of the personal capabilities and specific professional skills of the candidates. A period of training and on-the-job practice make it possible to detect more thoroughly whether the potential teleworkers fulfil the necessary minimum conditions to successfully adapt to this new modality of work

- When we are dealing with people with physical disabilities it is specially important to bear in mind the **ergonomics of the workplace**, understanding as such the hygiene and health at work aspects and physical adaptation of equipment, since inadequate conditions can have serious consequences for the health of the worker who already has some form of impairment. The knowledge on such aspects that is transferred to the teleworker in the training programme is a fundamental element for awareness and prevention of possible accidents.

A large percent of people with physical disabilities do not require any specific adaptation of their equipment in order to be able to carry out teleworking activities. If this adaptation were necessary then it must be done with a prior analysis of the individual needs of the worker, although it has to be said that the limits set by technology are becoming less and less.

- After the training period and up to September 1999, 50% of the beneficiaries of the project have started to provide their services to companies in different activity areas: clerical services, accounting and management, and graphic design. These are professionals who already had prior work experience and an optimum level of professional qualifications which has enabled them to offer services of a high quality.

Nevertheless, it is important to point out that although the services have been developed in a distance mode (from the home of each beneficiary), since the specific disability of each person does not impede their mobility, in most of the cases the actual exchange of information with the client for developing the service or for delivering the final product has been face-to-face instead of telematic. So far, **the project is tending to generate work in a self-employment mode, and not so much self-employment in a teleworking mode**. The reasons for this are many:

- In a high percentage of cases, the services are being provided to clients that are small companies, located in the home areas of the workers, that do not have the necessary minimum telematic resources (electronic mailbox and access to Internet).
- In other cases, the client is reluctant to dispose of face-to-face contact with the service provider and demands a periodical personal relationship, or at least during the early stages of the service.
- The “teleworkers” themselves offer resistance to modifying their traditional working models and switching to telematic models. They have taken a step forwards, they have accepted the risk of being “free-lance” workers, but not of being “free-lance” teleworkers.

Although the incorporation of technologies in the business scenario is a determining factor in the implementation of teleworking systems it must be stressed that there is a deeper social factor that is slowing down the process, i.e. the resistance to a change in attitudes and to losing the fear of modifying the models of work organisation. Thus it is **essential to develop dissemination and awareness strategies in the business sector** (particularly in the area of SMEs) so that companies increase their knowledge of the potential advantages of introducing ICT and applying teleworking models in their business structures.

- **The teleworker that carries out his/her professional activity according to the home-based telework modality is faced with the most negative scenario for teleworking.** Thus there is an evident need to offer him/her an external structure that, especially in the initial stages, provides a series of **support services**:
 - The teleworkers need to receive **technical support** in their homes in order to resolve quickly and efficiently the many technical incidences which are taken care of in a face-to-face scenario (teleworking centre, shared resources centre ...).

Remote technical support to solve software problems can be a feasible strategy. Maintenance of hardware that has already outrun the guarantee period for home-tech assistance implies a high cost and thus is an important barrier to be taken into account.

- **When launching self-employment activities, teleworkers require regular and efficient** business counselling: **feasibility analysis of their business initiative, decision making regarding investment in equipment, legal procedures, tax commitments, accounting, invoicing, drawing up estimates**
- So as to ensure the quality of the services and foster self-control mechanisms in the teleworker (particularly in those cases in which the teleworker has no prior job experience in a normal company) it is crucial and compulsory in the initial phase of setting up the telecentre to:
 - train the teleworkers and validate specific **teleworking protocols** and methodologies according to the specific activity sectors
 - introduce **quality control mechanisms** supervised externally by the “telecentre manager” that will progressively be reduced
- Particularly those people with special mobility difficulties require **support for marketing** their professional services and gaining a briefcase of clients.
- To provide the necessary **teletraining** resources due to the conditioning factors of technological evolution and on-going techno-professional updating required by the job market.
- The free-lance teleworker that carries out a home-based activity is practically isolated and runs a greater risk of social isolation than other teleworkers. It is thus essential to generate mechanisms for social relationships and to encourage the **creation of virtual groups** of geographically scattered teleworkers.

When conceiving a virtual telecentre it is important to provide access to telematic tools for group communication (groupware) so as to:

- facilitate the co-ordination of multidisciplinary professional teams
- generate teletraining processes
- encourage exchange of information
- foster common knowledge of successful experiences, difficulties to be overcome, etc. that provide references for carrying out one’s own projects

Providing the teleworkers with a telematic means of group communication is not enough to ensure communication in virtual groups, it is necessary that there also be a “telecentre manager” or another professional person who acts as moderator or facilitator of the group, someone who has the necessary skill to initiate group dynamics in order to search for synergies and break the resistance to asynchronous communication based on written language.

- The cases of **real implementation of telework by people with disabilities in Spain are both recent and rather scarce**. Although pilot projects in the different modalities of telework have been carried out since the mid 80’s, these projects have been faced with difficulties to develop real marketing operations and thus to become self-financing. The institutional “push” to carry out studies and pilot experiences is still of vital importance and thus they are still being supported by local or national institutions under the legal and monetary auspices of the European Union. In Spain there are currently about 30 HORIZON teleworking projects centred mainly on training the beneficiaries at local telecentres but whose survival, once the Community financial support ceases, is questionable.

However, a certain awareness and feeling of hope can be perceived among the promoters of telecentres as regards reaching common objectives and joining forces by means of the creation of associations of teleworkers (with or without disabilities) and telecentres, exchange networks, common user support services, business awareness networks, and shared structures for the marketing of services provided by free-lance teleworkers.

Author briefing:

In September 1996 Carmen Viorreta joined *CEPES- The Spanish Business Confederation of Social Economy*. Currently, she is coordinating the *Cepadite project* under the European Initiative Horizon/Employment 98-99, devoted to the implementation of a Telecenter involving workers with disabilities.

Professional Experience**1990- 1996**

Educational Technology Expert at FUNDESCO and the *GATE (Educational Technology Office)* of the *Universidad Politécnica de Madrid*,

1988-90 Technical Director at the Eulen Training Institute

1983-87

- Teaching experience in training Junior School teachers
- Psychosocial research

Keywords:

Telework, home-based teleworking, teletraining, pilot experience, self-employment, disability, physical handicap, telecentre, telematic services, disabled, support services, social economy.

Contact Details:

Name: Carmen Viorreta
Position: Employment Projects Manager
Organisation: CEPES
Address: c) Vallehermoso 15, 1ª planta
28015 Madrid SPAIN
Tel: +3491 593 04 12
Fax: +3491 448 73 93
e-mail: c.viorreta@cepes.es
web-site: <http://www.cepes.es/cepadite>
