Teleworking: Assessment of Trials

Results, assessments and perspectives arising from the trialling of Home Working in Regione Toscana "Second International Telework Accademy Conference" – Preston e Liverpool – Agosto 2005.

By:

- Ombretta Gheri, Sandra Raddi: Regione Toscana *(Tuscany Regional Government)*, Office for Organisational Innovation and Recruitment
- Stefano Berti: Consulente – stefano.berti@studioberti.it

SUMMARY

1   INTRODUCTION

The trial Regione Toscana teleworking programme was launched under the auspices of the first initiative of the special project "Greater Efficiency and Less Bureaucracy for Tuscany" falling under the 2000-2005 government programme.
The objective of the first initiative, "Organisational flexibility of work - Teleworking," was to create the necessary technological and organisational conditions to trial teleworking as a flexible form of work organisation aimed at promoting the "de-bureaucratization" of the regional administrative apparatus, through initiatives focused on cultural, technological and organisational innovation.
The main promoter behind the programme was the Regional government, which delegated the implementation of the project to the "Organisational Innovation and Recruitment Office."

2   OUTLINE OF THE PROJECT

2.1   Activities

The project involved the following activities:

- Study, on the national level, of the civil service administrations that have trialled teleworking programmes within their organisations;
- Retrieval of documentation relating to trials launched;
- Collection and evaluation of the legislative and contractual provisions available on teleworking;
- Establishment of an internal work team comprising representatives from the main organisational units involved in the outlining of the project and co-ordinated by the "Organisational Innovation and Recruitment Office", responsible for the implementation of the programme.

  The main problem encountered in the implementation of the programme arose in relation to the co-ordination of the organisational units involved in planning. The creation of the work group contributed significantly to resolving this problem.

  > The tasks and duties deemed necessary for the implementation of the programme and delegated to the various organisational units concerned:
  > - work place safety;
  > - technology;
  > - training for teleworking;
  > - laws governing employment relations;
  > - contractual details and the provision of furniture.

  The organisational unit directly managing the project co-ordinated the activities of all the organisational units participating in the trial programme, providing its support also through the preparation of the necessary arrangements for the launch of the trials.
- Drawing up of the programme by the "Organisational Innovation and Recruitment Office" in conjunction with the organisational units participating in the project.
- Consultation with trade unions
- Training and education
- Launch of trials
- Monitoring of trials

2.2 Project Phases

The project involved the implementation of various phases:

- Identification of tasks suitable for teleworking and areas for trialling (phase carried out from February to June 2001)
  A series of meetings were held with the various Directorates General to illustrate the programme and the identifying characteristics of the tasks which the Directorates General were to identify within their offices as suitable for teleworking.

- Gathering of candidatures through a questionnaire, carried out from September 2002 to June 2003.
  The questionnaire was distributed amongst staff members engaged in tasks suitable for teleworking, as deemed in the previous phase.
  The questionnaire was designed to determine and gauge:
  - willingness to participate in trials;
  - the level of interaction with co-workers and superior officers;
  - degree of independence and working autonomy;
  - the need to access resources, information and documentation available in offices;
  - the availability of space to set up a workstation at home.

- Talks with trade unions, held from November 2002 to January 2003.
  Trade unions proved open to and supportive of trials, and expressed their interest in participating in the programme monitoring team.

- Approval, by the Regione Toscana executive, of the programme and of the regulatory framework governing the employment relationship, and which set forth the new operating procedures.

- Identification of offices/staff members interested in participating in trials, carried out from January to April 2003.
  To be eligible for participation in the trial programme, offices were required to have staff members interested in taking part in trials, and to carry out tasks deemed suitable for teleworking. Workers were required to have suitable levels of computer literacy/skills, whilst executive officers were expected to demonstrate awareness and openness towards the introduction of organisational and technological innovation.

- Training of workers chosen to participate in the trial, carried out from May to June 2003.
  The training programme was designed on an inclusive model involving the participation of teleworkers and their senior officers, and the creation of workshops designed to teach the instruments and operating procedures to be concretely implemented during the trial itself (e.g. reports for activity summaries). Training was carried out by both internal and external staff and was broken up into two sessions.
  During the training course, the teleworkers elected two representatives to participate in the programme-monitoring group.
  Topics of study included:

- legislative aspects governing teleworking, with particular reference to the Regione Toscana programme
- organisational techniques for work
- planning and assessment tools for activities
- occupational health and safety regulations

- Launch of the trial in November 2003.
  Given that on the basis of the questionnaires, the number of candidates for the trial did not exceed the maximum number of trial positions available, all the candidate applications were accepted. Trials were launched with a trial group of 21 workers from 15 different organisational units.

2.2.1 Monitoring of the Trial

Trials were launched in November 2003 and came to an end in November 2004. An internal monitoring team was set up comprising:

- officers responsible for co-ordinating the project
- representatives for the executive officers of the teleworkers
- representatives for the teleworkers
- trade union representatives

The task of the monitoring team was to analyse the results of the trials including the organisational and social implications arising from the introduction of teleworking, in order to provide the Region with its assessment of whether to adopt the organisational model in a permanent and ongoing manner.

An external expert was subsequently called upon to contribute to the team[1], bringing added impartiality to the assessment made and greater effectiveness to the methodology employed.

Attention was focused on gauging:
- the satisfaction of teleworkers given their expectations
- the implications for work quality and standards
- the implications for the quality of life of teleworkers
- the impact on work organisation
- the impact on the office (senior officer and co-workers)
- the technological aspects regarding work stations
- the financial resources necessary

Active throughout the entire trial period, the team also played a de facto supporting role for the trial programme.

The analysis of the programme involved the use of the following survey tools:
- a questionnaire completed by all the teleworkers involved
- a brief interview with each teleworker
- a questionnaire completed by the executive officers of the teleworkers
- a questionnaire completed by the co-workers of the teleworkers

[1] Stefano Berti – co-ordinator and lecturer in conceptual modelling and application planning for the "GINTS" Masters course of the University of Siena. Nominated "Honorary Member" of the Società Italiana Telelavoro (Italian Telework Society). Co-author of this paper.

2.3 The Trial Group

The trial group comprised 21 staff members of the Region. The ages of participants ranged from 35 to 54 years of age, with the average age for the group approximately 45; the most common specific age of participants was 47 years of age. The average length of service of the teleworkers, on the other hand, was 13.38 years, ranging from a minimum of 5 years to a maximum of 31 years; the most frequent length of service, as was the case for 4 participants, was 12 years.

Turning to the employment level and type of the participants, the majority of the group - 52.38% - were officials, whilst 33.33% were assistants; only three participants were freelance workers (14.28%) and no executive officers took part.

Whilst these characteristics provide a static portrait of the sample involved in the trials, they also underlie a range of structural variables which we believe influenced the initial motivations which led the teleworkers to participate in the teleworking trials, along with the opinions expressed in interviews held upon completion of the trials.

The Trial Group
• 15 organisational units involved
• 21 teleworkers
• 17 women
• 4 men
all working from home, of whom
• 13 of age < 45 years
• 8 of age > 45 years
• 15 with > 10 years of service
• 6 with < 10 years of service
• 11 officials
• 7 assistants
• 3 freelance workers
For a total of approximately 2500 days of home working

In surveying the outcomes of the trials, the participating teleworkers were asked to reveal the motivations which led them to accept the proposal to participate in the programme.

Motivations bar chart with categories: Health reasons (~24%), To look after & care for family members (~65%), Distance/difficulty in reaching the workplace (~35%), To reduce travel expenses (journey, car maintenance, etc.) (~6%), Desire to participate in an innovative project (~30%), Desire for greater autonomy in time management (~30%), Other: to reduce daily stress (~6%), Curiosity (~2%)

In giving their responses, reported above on the previous page, a significant proportion of the participants (approximately two-thirds of the group) indicated personal motivations for their decision to participate:

- o health problems
- o to look after & care for family members
- o to reduce travel expenses,

whilst approximately one-third of the group indicated that they chose to participate in the trials for organisational reasons such as the desire to participate in an innovative project and, to a lesser extent, the desire for greater autonomy in time management.

No one indicated mere curiosity as the motivation behind their choice to participate, even though it featured in the range of possible responses.

3   THE ASSESSMENT: DATA COLLECTION MEANS

Various survey tools were employed for data collection, including more traditional methods such as:

- o questionnaires submitted anonymously by the teleworkers[2],
- o nominative questionnaires for executive officers,
- o anonymous questionnaires for the co-workers of the teleworkers,
- o confidential interviews with the teleworkers.
- o technical interviews with senior officers on technology, security and administration costs.

Along with these traditional methods, a specific tool was also used based on the collection of organisational data which were

- o significant
- o difficult to objectivize.

This method was created by Charles Schwenk[3] for the analysis of decision-making behaviour in complex organisations. The method is based on a module containing a series of questions relating to a survey topic with answers ranging from completely false to completely true on a scale of one to seven, to be completed as quickly as possible in order to gauge the respondents' instinctive response.

The modules produced constitute what we have called maps of perception.

The modules were used in four situations, two for primary purposes and two for the purposes of comparison. Teleworkers were asked to give their perception of what teleworking represented for teleworkers, whilst executive officers were asked what teleworking represented for the Region; for the purposes of comparison, teleworkers were then asked to explain what they believed teleworking represented for the Region and executive officers were asked what they believed teleworking represented for teleworkers.

The sample involved in the analysis was essentially the entire "universe" of teleworkers and their respective executive officers, along with the direct co-workers of

---

[2] In order to anonymously identify each of the participating teleworkers, during preparations for data collection tasks a random number was assigned to each participant and recorded on a secure file along with the name of the teleworker and any pertinent information deemed confidential, including the transcript of the interview held.

[3] "The Essence of Strategic Decision Making" – Proceedings of the ARTIS seminar of the same name, Elea, Florence, June 1991.

the teleworkers themselves. Although only a limited percentage of co-workers responded (30%), all other persons approached gave their answers.

4   HIGHLIGHTS AND LOWLIGHTS OF THE TELEWORKING TRIALS

4.1   Introduction

This section of the report looks at the following topics and issues:

- the analysis criteria employed
- "highlights and lowlights of teleworking", with many positive aspects highlighted, and general room for improvement indicated, rather than strictly negative aspects
- technical assessments and room for improvement
- cost-benefit analysis for a budget proposal to extend teleworking
- conclusions

4.2   Data Analysis Criteria

Essentially three statistical tools were employed: means, quadratic errors and modes. Means were further used to identify the mean opinion of the sample towards a certain question, whilst the mean quadratic error was used to estimate how broad the range of opinions towards a question was. Mode highlighted the prevalent opinion of the group, and was focused upon when preparing the report.

4.3 The Opinion of the Teleworkers

<u>General Satisfaction</u>

To begin with the strongest figures, when asked "Would you candidate yourself again for teleworking?", seventy per cent of the sample responded "Yes, definitely." Of course the response "Absolutely not" was also given, however the positive figure gives the impression of overwhelming satisfaction.

Would you candidate yourself again?

Legend:
- Yes, definitely
- Yes
- Perhaps
- No
- Absolutely not

0% | 6% | 12% | 12% | 70%
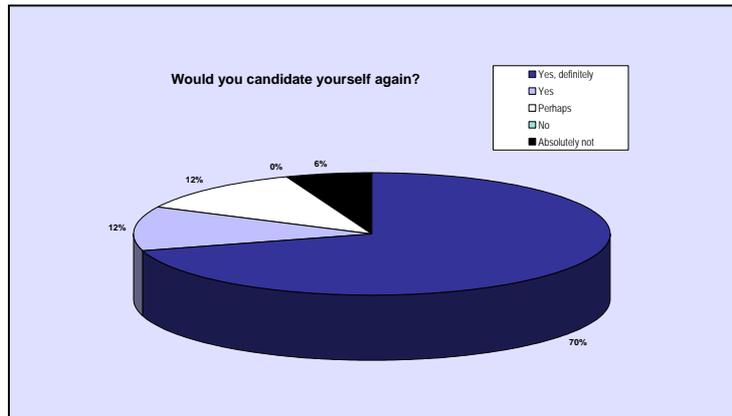
In fact, when asked "How would you assess your overall experience?" seventy per cent of the sample responded "very positive", whilst only six per cent (one person) claimed that the experience was negative.

<u>Expenses</u>

As concerns expenses, over fifty per cent of the sample claimed that their expenses had remained unchanged, approximately one-third claimed that their expenses had been reduced as hoped, whilst a quarter of the sample claimed that their expenses had increased as feared.

Overall Assessment of the Experience

Legend:
- Very positive
- Positive
- Negative
- Very negative

6% | 0% | 24% | 70%
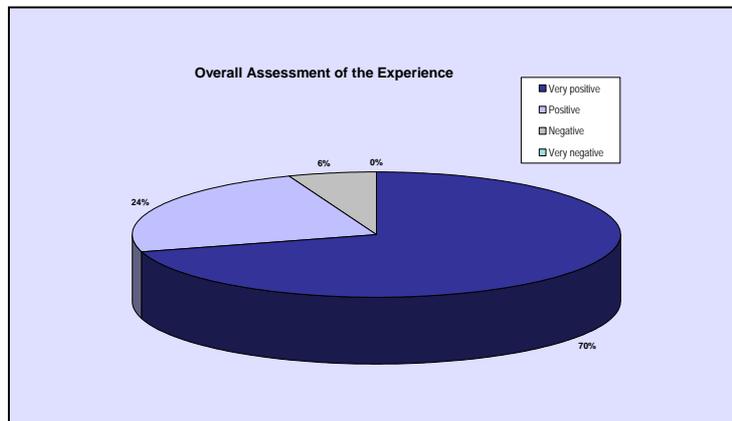
These assessments were made with regard to total expenses, hence summing lower travel costs to greater living costs. When asked to consider only travel costs, three-quarters of the sample responded that their expenses had fallen as hoped, whilst a third answered that they had remained unchanged.

Twenty-four per cent of the teleworkers declared that they do not drive to work but go by bicycle, on foot, or use public transport, and hence their travel expenses are lower and less reducible compared to workers who drive.

Looking at all the teleworkers as a group, on the basis of data obtained prior to the trials, it was calculated that the teleworkers saved (on average) 227 hours a years in reduced travel time.

Insufficient data exists to determine with the same precision the economic savings made. Supplementing the data with accurate estimates and standard values of reference, it may be estimated that savings worth 1665 euros per year can be achieved for those who drive.[4] Nevertheless, it should be borne in mind that:

---

[4] The estimate regards the economic savings achieved on travel expenses (per year/person) with respect to the entire sample; cost per journey: 0 euros for bicycles, 1 euro for public transport, 2 euros for scooters; 56.6 cents/Km for cars, as quoted by ACI tables for a FIAT Punto 1.3 GT 3p CAT, 10,000 Km/year; in the case where more than one means of transport is used, fixed pro-quota calculation was assumed. Estimated car speed: 25Km/h. All data come from Italian sources and refer to December 2004, the month for which estimates were made.
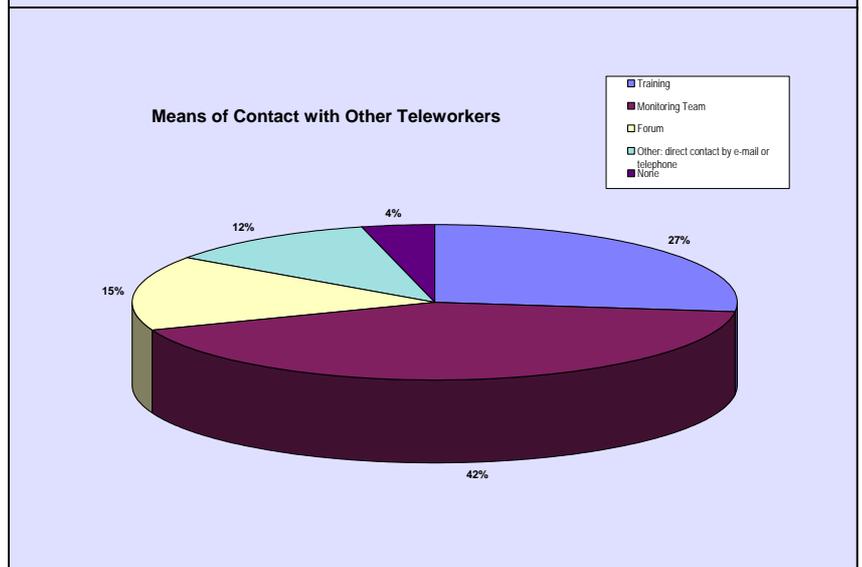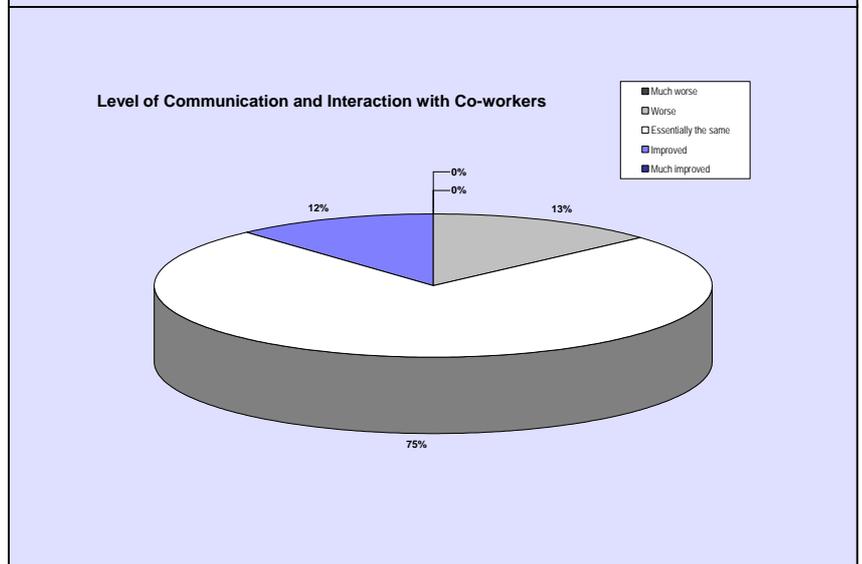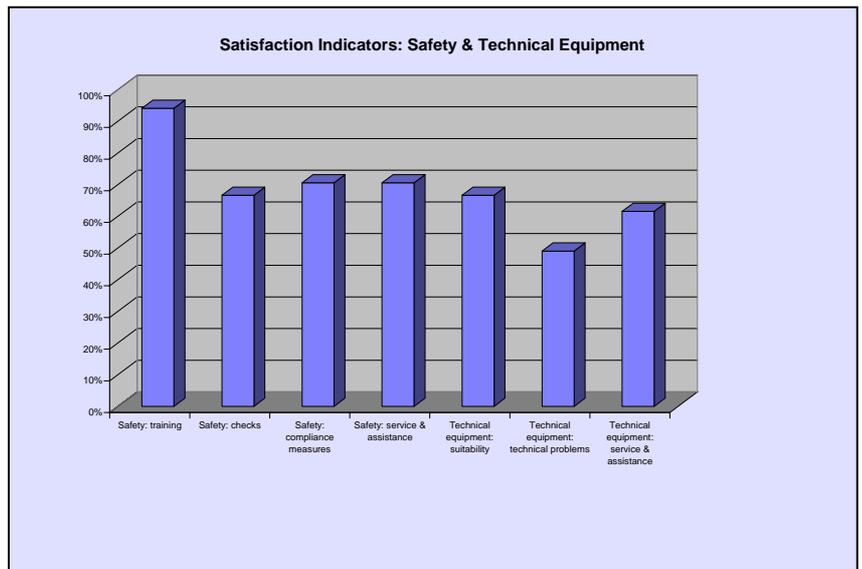
- o the estimate is a mean across situations which are all very different;
- o It is derived from both consolidated data and other estimates;
- o It contains a component of savings (albeit minor) which under certain aspect is "virtual", as it is linked to costs which are substantially fixed (car insurance payments).

With regard to the environment, attention should be brought to another important element, namely the reductions achieved in fuel consumption. Taking into consideration only those teleworkers who would otherwise have driven to work, an estimated 800 litres of fuel per person per year can be saved.[5]

<u>Satisfaction on Technical Variables</u>

The figures show the level of satisfaction with regard to a series of technical variables, expressed as an overall percentage rating.

The results indicate a heightened sensitivity towards technical problems experienced with equipment, as for the teleworker, such technical faults are much more bothersome than for office workers, as technical equipment has a further function in teleworking of connecting the teleworkers with the workplace.

Satisfaction Indicators: Safety & Technical Equipment

Level of Communication and Interaction with Co-workers

- Much worse
- Worse
- Essentially the same
- Improved
- Much improved

0%
0%
12%
13%
75%

Means of Contact with Other Teleworkers

- Training
- Monitoring Team
- Forum
- Other: direct contact by e-mail or telephone
- None

4%
27%
12%
15%
42%

---

[5] The estimated saving in fuel per person per year comes to 874 litres, calculating 1/3 of expenses as per ACI tables for the fuel consumed by teleworkers who would drive, even only occasionally, to work (76% of total).

Communication

As concerns the level of interaction and communication with co-workers, the results of the questionnaires greatly exceed the expectations based on existing literature. In all probability, the **Intranet** played a key role in this result, though as it is used equally by both teleworkers and office workers, it was not specifically included in the questionnaire.

Sense of Belonging to a New Community

With regard to other specific means of interaction and communication (the monitoring team, training, etc.) various responses were possible.

Very positive assessments were made of both the monitoring team and the training programme, with room for improvement in the latter, whilst the forum was not particularly well seen.

Finally, when asked about their sense of belonging to a new community of workers, the teleworkers again gave a positive response, though not quite as positive as the general assessment given to the overall experience and the willingness to repeat it.
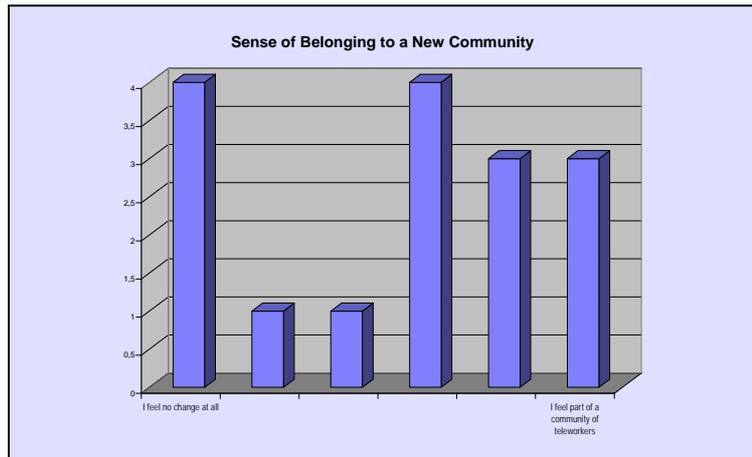
4.3.1 The Perception Maps of the Teleworkers with regard to Teleworking

General Considerations

With regard to the impact of teleworking on the Region, as perceived by teleworkers, the responses proved to give an unrealistic perception of such impact.

The teleworkers all agreed that teleworking did not open up further career opportunities, however, as we will see, their executive officers did not express such concern.

> Which brings us to immediately identify an area for improvement, as the teleworkers were concerned about the impact of teleworking on their careers, whilst their executive officers did not confirm any grounds for such concern.

THE QUESTIONS
For the teleworker, does teleworking…
- o create greater quality of life?
- o permit greater attention to be paid to the family?
- o reduce work costs?
- o allow time to be saved?
- o increase the opportunity to socialise?
- o promote a better relationship with co-workers?
- o improve the image your co-workers have of you?
- o lends greater transparency to your relationship with the institution?
- o gives greater effectiveness to trade union information?
- o allow you to better organise your work?
- o enable greater productivity when working?
- o open up further career opportunities?

For the institution ….
- o represent an opportunity to improve the organisation of the area?
- o encourage greater organisation in management?
- o enable swifter responses to work needs?
- o enable better checks on work performance?
- o reduce overall costs?
- o promote greater overall productivity?
- o enable better human resources management?
- o promote growth in professional skills and aptitudes?
- o represent a means to improve relations with trade unions?
- o send a positive message to employees?
- o send a positive message to the community?

Dominant Perceptions

Using the "mode" operator, let us look at the dominant opinions of the group, as expressed in terms of overall affirmations of the group:

It is completely true that Teleworking for the Teleworker:
- o creates greater quality of life
- o permits greater attention to be paid to the family
- o allows time to be saved
- o allows work to be better organised
- o enables greater productivity when working

It is somewhat true that Teleworking for the Teleworker:
- o reduces work costs

It is completely false that Teleworking for the Teleworker:
- o opens up further career opportunities

The opinion held by teleworkers on the impact of teleworking on the institution can similarly be examined, although on this aspect, the opinion of the executive officers carries much greater weight.

It is completely true that Teleworking for the Region:

- *sends a positive message to employees*

It is somewhat true that Teleworking for the Region:

- *represents an opportunity to better organise work*

- *encourages better organisation in management*

- *promotes greater overall productivity*

- *sends a positive message to the community*

It is partially false that teleworking for the Region

- *reduces overall costs*

THOUGHTS	SUGGESTIONS
▪ Checks on performance can only be justified if they are carried out throughout the organisation	▪ **Greater flexibility in returning to the office**
▪ Problems relating to the management of emergencies are linked to deficiencies in planning and not to teleworking itself	▪ Scheduling of meetings on days when teleworkers are in the office
▪ **In the event of technical failures, the sense of isolation and anxiety soars**	▪ Scheduling of union meetings on days when teleworkers are in the office
▪ **The teleworking forum does not work as a means for participation**	▪ **Adoption of ADSL connection only when strictly necessary for the type of tasks carried out**
▪ The Region needs to establish whether a sense of isolation was felt by the teleworkers	▪ **Increase the amount of training on time management and organisational techniques for work**
▪ (Adequate) work planning was missing	▪ **Supplement training with further seminars on the issues addressed**
	▪ **Selection of a specific assistance centre, with guarantees that equipment failure will be swiftly dealt with.**

"In distance learning, it is the teacher who is distant, not the student" – G.Canavese, TACIS ED062 Project

Results from Interviews

Looking at the thoughts and suggestions given by the teleworkers in interviews, reported in the box above, it becomes apparent that the teleworkers saw their situation as a normal working situation (at most it was the Region that was detached, and not vice versa). For this reason, the teleworkers expected the same level of facilities as when they are in the office. In fact, the normal working experience was recreated through a series of tools designed to give a sense of proximity, for example the monitoring team and intranet, although technically speaking, room for improvement does exist on this point. In the box, the issues raised which we believe should be addressed with priority have been highlighted in bold.

From this point of view, and generally speaking, the overall experience of the trials in Regione Toscana produced excellent results, well beyond those forecast on the basis of the literature available, although some room for improvement does still exist.

4.3.2 Teleworking and Leave

Along with these analyses, we decided to determine whether or not the trials confirmed results repeatedly mentioned in existing literature indicating that teleworkers take less brief leave from work for sickness, as compared to their office co-workers. The results overwhelmingly confirmed such claims.
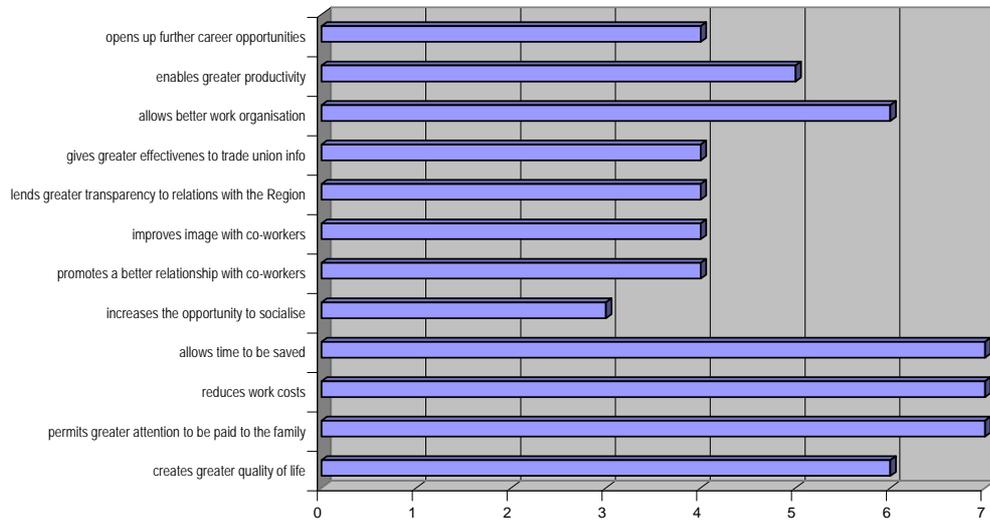
	Teleworkers (from 1/10/03 to 30/09/04)	Non Teleworkers (same period)	Difference
Number of absences for sickness per-capita (up to 2 days off)	1,92	3,38	-1,46
Number of absences for sickness per-capita (up to 7 days off)	2,14	4,13	-1,99
Number of absences for sickness per-capita (more than 7 days off)	0,57	0,51	0,06

4.4 The Opinion of Executive Officers

The executive officers of the teleworkers were more concerned than the teleworkers themselves about the impact of teleworking on socialisation, though they were less negative about the impact on career opportunities.

This highlights the importance of the results obtained as regards socialisation and the room for improvement with concern to careers. The perception of career opportunities needs to be transformed. As long as teleworkers continue to see their careers from a traditional point of view, in terms of internal hierarchy, careers will remain a point of weakness for teleworking. The important point is that teleworkers benefit from the range of new opportunities for growth arising from the new community in which they take part.

Executive Officers on Teleworking for Teleworkers (mode)

Category	Value
opens up further career opportunities	4
enables greater productivity	5
allows better work organisation	6
gives greater effectivenes to trade union info	4
lends greater transparency to relations with the Region	4
improves image with co-workers	4
promotes a better relationship with co-workers	4
increases the opportunity to socialise	3
allows time to be saved	7
reduces work costs	7
permits greater attention to be paid to the family	7
creates greater quality of life	6

Executive Officers on Teleworking for the Region (mode)

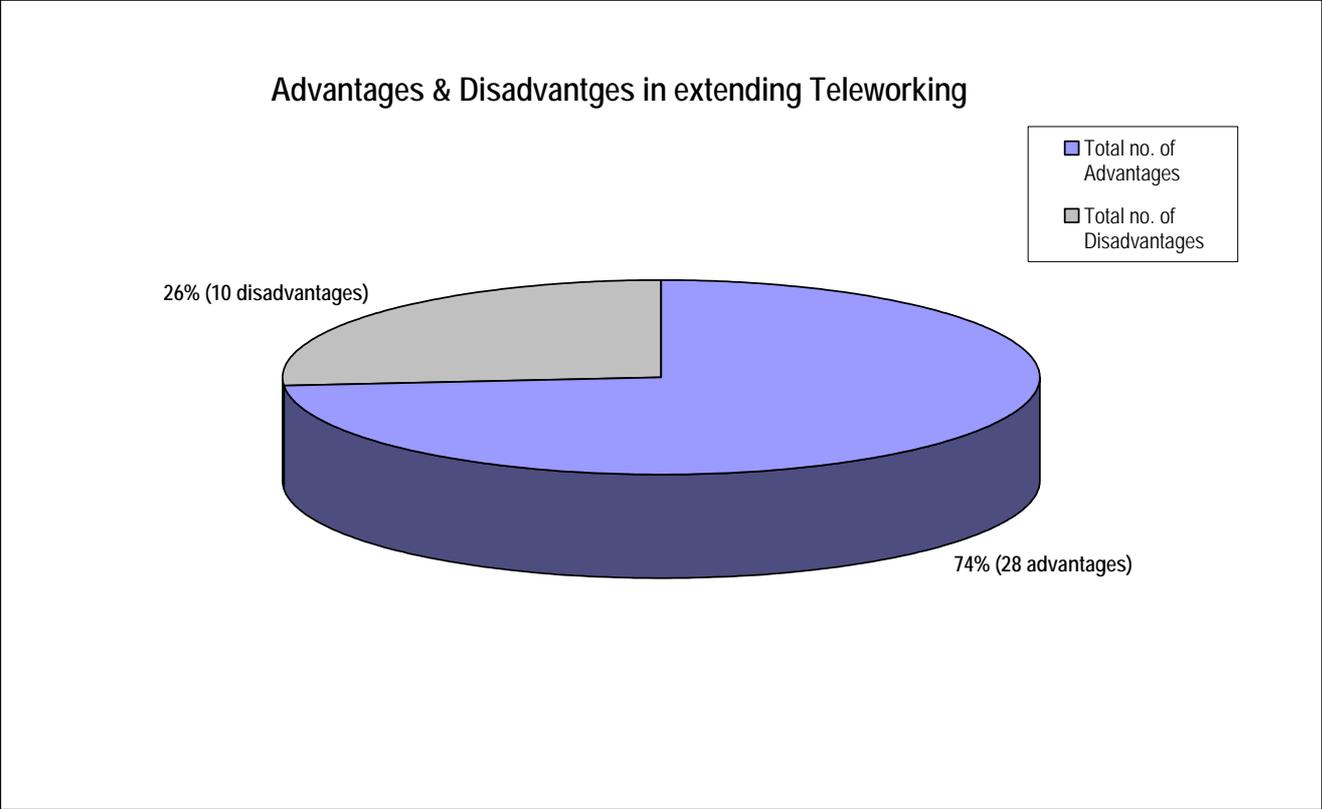| Category	Value
sends a positive message to the community	4
sends a positive message to employees	6
represents a means to improve relations with trade unions	6
promotes growth in professional skills & aptitudes	6
enables better human resources management	4
promotes greater overall productivity	5
reduces overall costs	4
enables better checks on work performance	6
enables swifter responses to service needs	4
encourages greater organisation in management	4
represents an opportunity to improve organisation in the area	4

The assessments given on the impact of teleworking on the Institution were also positive, as illustrated in the graphs above.
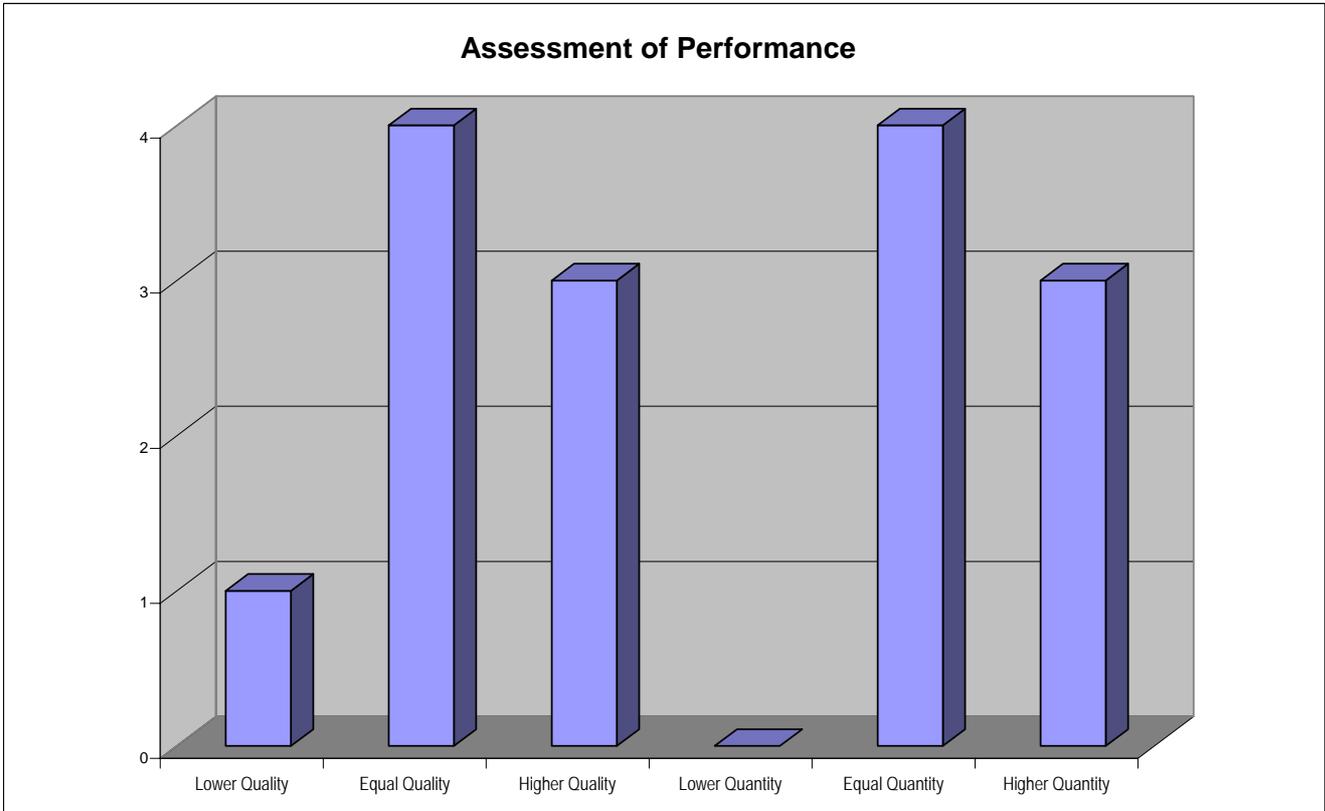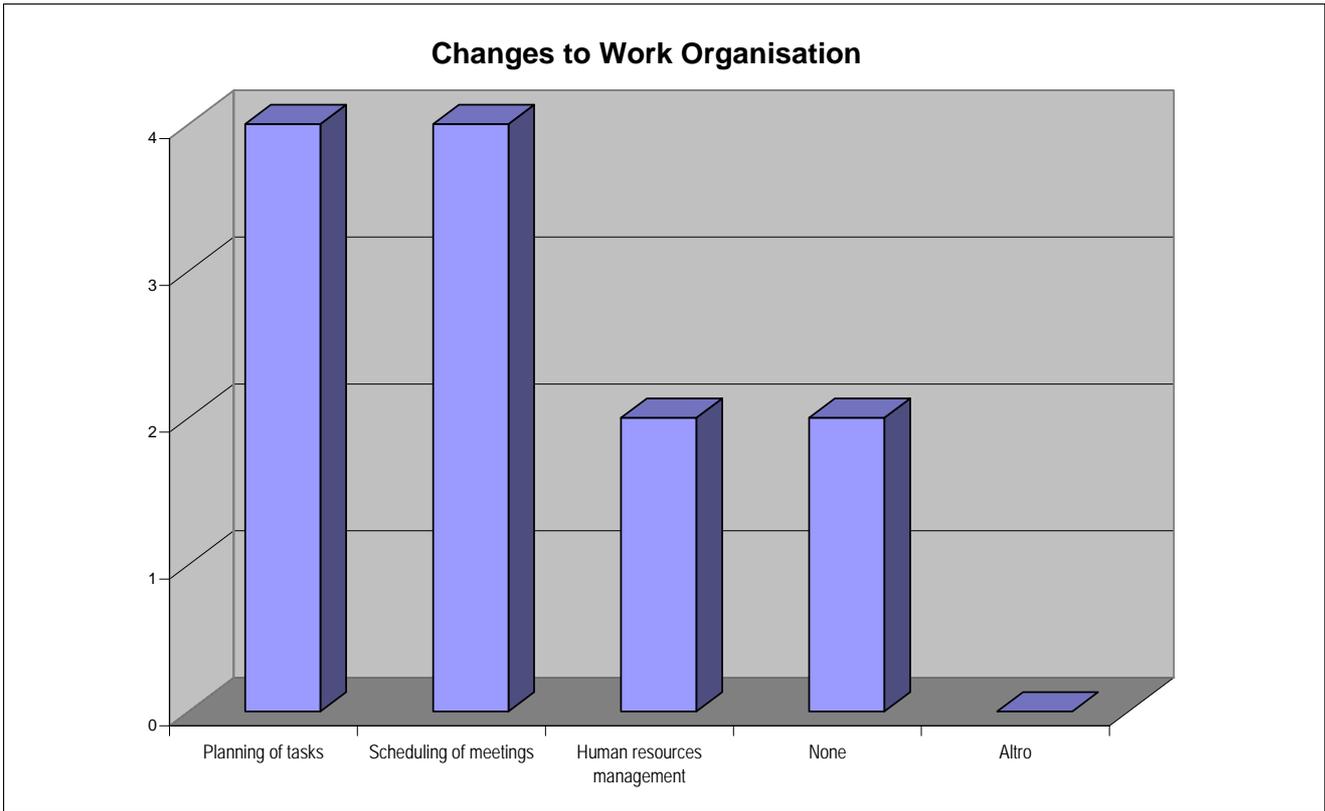
Eight advantages and six disadvantages were listed with regard to the diffusion of teleworking within the Region and executive officers were asked to choose between
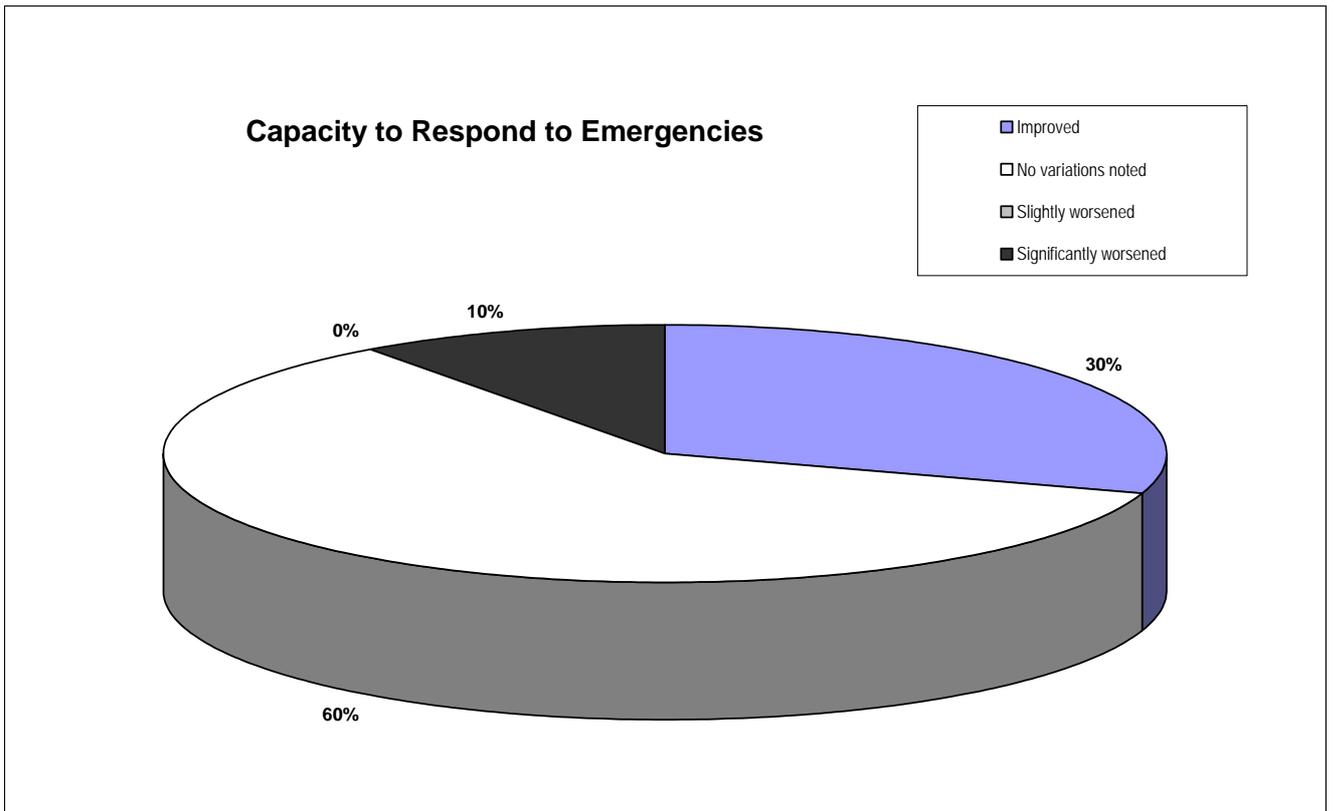
them without limit. Approximately three-quarters of all responses indicated advantages, whilst only a quarter pointed to disadvantages. Worker performance, in all responses except one, was defined as the same or greater in terms of quality, and the same or greater in terms of quantity. Furthermore, again with the exception of one response, the capacity to respond to emergencies was not seen as lessened, and in some cases, this capacity was deemed to have improved, in contrast to the critiques generally present in existing literature.

We believe that this surprisingly positive result can be explained by the fact that certain changes to the organisation of work were made to accommodate teleworking. Hence teleworking represents an opportunity for changes in programming, planning and human resources management, and as a consequence, encourages improvements in organisation.

The most significant results have been summarised in the graphs below and on the following page.

Advantages & Disadvantges in extending Teleworking

- Total no. of Advantages
- Total no. of Disadvantages

26% (10 disadvantages)

74% (28 advantages)

Changes to Work Organisation

Assessment of Performance

Capacity to Respond to Emergencies

Legend:
- Improved
- No variations noted
- Slightly worsened
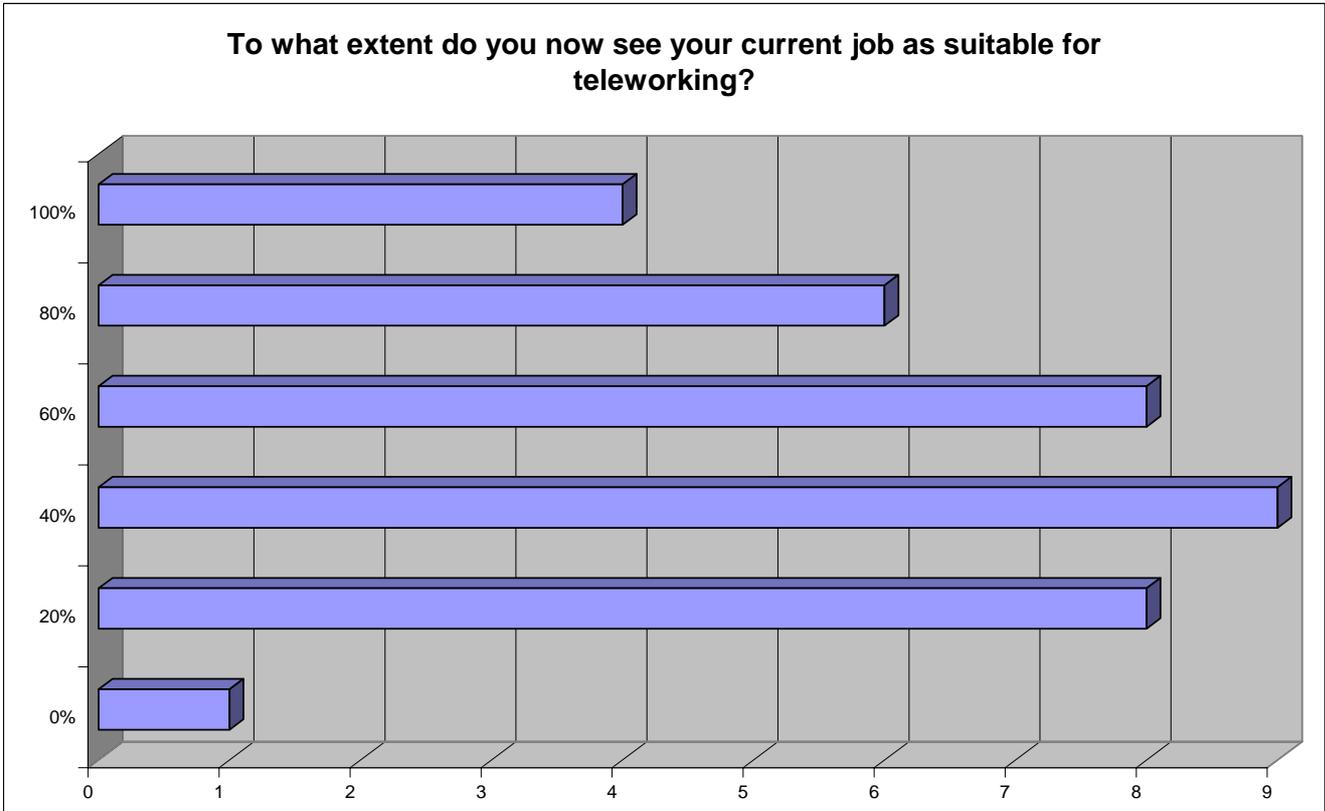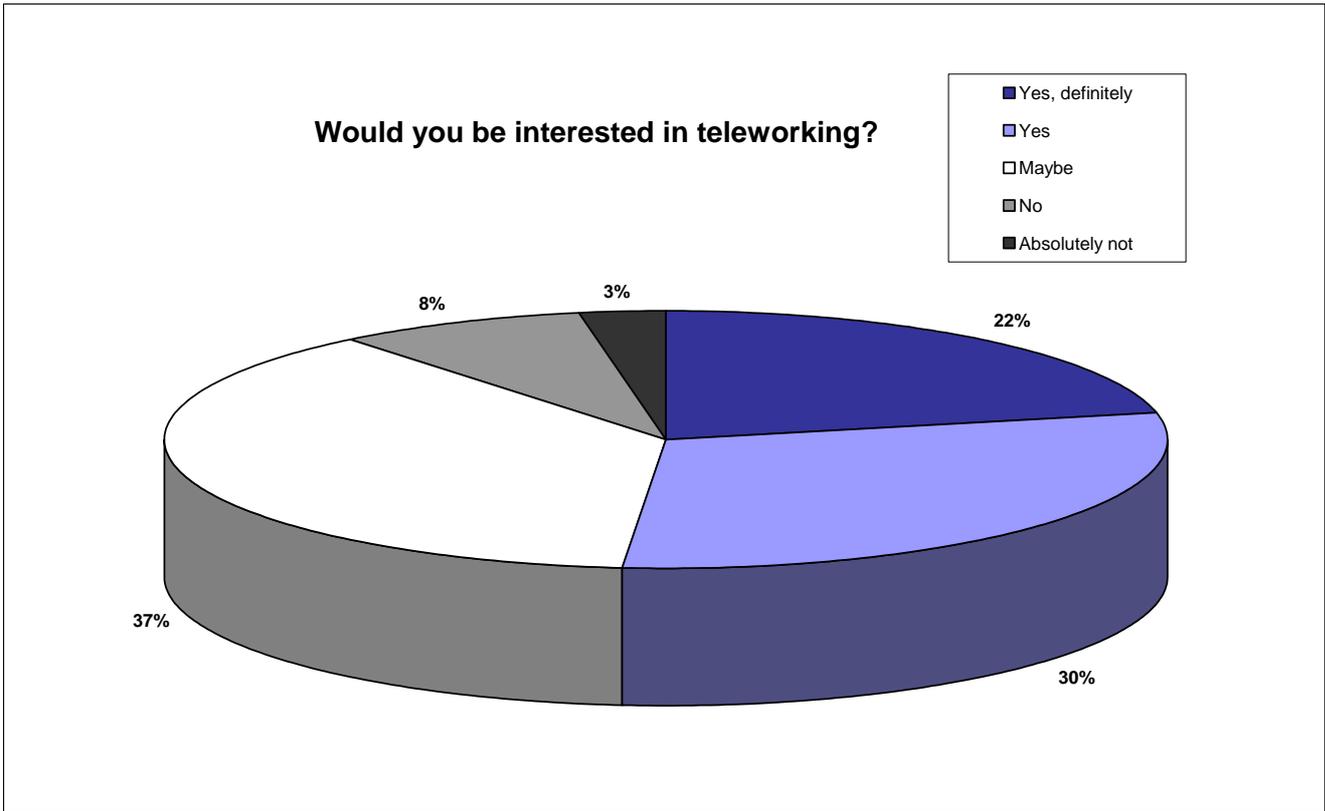- Significantly worsened

10%
0%
30%
60%

4.5   The Opinion of Co-workers

According to co-workers, the impact of teleworking was primarily neutral or positive. An impressive 62% of co-workers questioned declared they had had no difficulty at all in interacting with the teleworkers, and no one put such difficulties greater than "sometimes".

However, the key questions of interest are:

- "Would you be interested in teleworking?"
- "To what extent do you see your current job as suitable for teleworking?"

Existing literature (in particular the DEIS - Developing Employment in the Information Society Project) explains that the perceived suitability of tasks for teleworking grows hand in hand with positive experiences of teleworking. Looking at the figures reported below, in operating terms, the teleworking experience in the participating organisational units may be deemed to have been a success, especially considering that at the beginning of the project the number of candidatures did not exceed the number of teleworking positions available (see paragraph 2.2).

Would you be interested in teleworking?

Legend:
- Yes, definitely
- Yes
- Maybe
- No
- Absolutely not

- 22%
- 30%
- 37%
- 8%
- 3%

To what extent do you now see your current job as suitable for teleworking?

Category	Value
100%	4
80%	6
60%	8
40%	9
20%	8
0%	1

4.6 The Main Areas of Agreement and Disagreement in the Assessments given by the Teleworkers and their Executive Officers

The teleworkers expressed much more positive opinions compared to their executive officers (also because they were statistically a more varied group), though trends were the same.

In the questionnaires, the Executive Officers gave a series of positive assessments of great importance (quality and quantity of performance, impact on co-workers, capacity to respond to emergencies, advantages and disadvantages of the diffusion of teleworking, and so on).

The Executive Officers, however, did not share the concern expressed by the (majority of) teleworkers with regard to the effect of teleworking on their careers.

The greatest agreement seemed to be shown on:
- o the overall extremely positive impression given, with "room for improvement" indicated rather than negative aspects;
- o The positive effect of teleworking on the teleworkers, with various points of particular excellence;
- o Quality of life;
- o Time saved;
- o Positive impression of the impact on productivity, and no negative impressions on the overall effect on the Area;
- o Doubts with regard to cost savings for the Region;
- o Shared view of teleworking as an opportunity for change.

4.7 Room for Improvement

At the moment, there is an insufficient sense of belonging to a community of teleworkers, which underlies the pessimistic view of the impact of teleworking on careers, seen as they are in a traditional way, thus blinding the teleworkers to the broad range of new possibilities opening up before them.

1400 E-Mails in 16 months for the ETO (European Telework On-Line) Discussion Group
The red bars indicate the beginning and end of the WebForum period

This area for improvement should not be underestimated, as despite the excellent global results, there is a risk of teleworking being ultimately seen in a generally negative light.

Another area that needs improving is the forum, though such improvement cannot be based merely on new technologies. The forum needs greater animation so as to be perceived as a real instrument for contact. This was demonstrated in the ETO experience (see graph above), whereby the level of debate, as measured by the number of e-mails exchanged each week, paradoxically plummeted when a technological upgrade was introduced (activation of the Webforum), as the latter was perceived as a decline in personal contact (the e-mails were essentially anonymous); the debate returned to its previous levels when more traditional methods were reintroduced.
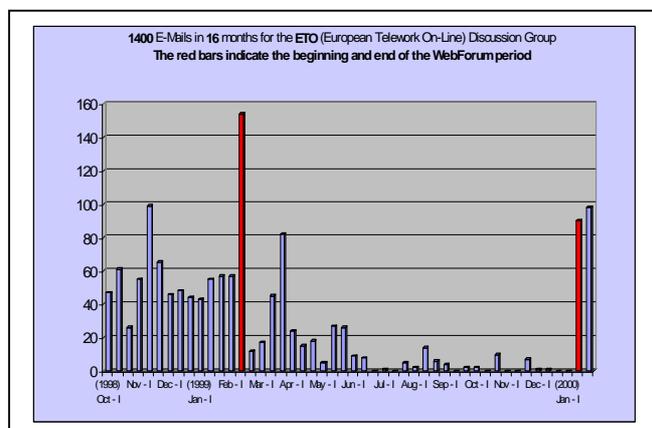
5 TECHNICAL ASSESSMENTS: ISSUES TO BE ADDRESSED IN ORDER TO EXTEND TELEWORKING IN REGIONE TOSCANA

Apart from that already addressed through the trial programme, in order for teleworking to become institutionalised:

❑ Costs need to be drastically reduced.

THE COSTS SUSTAINED IN THE TRIAL PHASE, although:

- o thoroughly justified for a trial programme, and
- o economically accurate, considering that a teleworking station costs:
  - ▪ approximately half that of a work station in the offices of the Region, and
  - ▪ 15% of the employment costs of an "average teleworker" can be fully recovered in terms of productivity;

ARE NOT SUSTAINABLE IN PRACTICE, given that with these costs – to a large part fixed and not variable - effective costs savings for the Region cannot be demonstrated. Furthermore, funding would need to be found to address the areas earmarked for improvement.

Two measures would presumably be necessary:

- o the passage from an ADSL connection with a guaranteed minimum band to a common domestic ADSL connection
- o the substitution of the two desktop solution (adopted in some cases - with one desk top at home and the other in the office) with a single desktop solution involving a laptop computer and "carry on" service and assistance - that is, provided only by the supplier or in the offices of the Region.

❑ A certification process on the domestic work place would need to be set forth by the Region, determining suitability in accordance with Law no. 626 on occupational health and safety.[6] The occupational health and safety officer would need to be able to ascertain whether the work station identified by the teleworker effectively fulfils the provisions set forth by law no. 626, and whether compliance measures,

---

Safety and Article 5 of Law 626/94

Article 5 (Obligations binding on workers). Each and every worker must concern himself with his personal health and safety and the health and safety of all other persons present in the workplace who may be affected by his actions or lack of action, in accordance with the training, instructions and means supplied by the employer. In particular, all workers shall:

a. comply with the provisions and instructions issued by the employer, executive officers and officers in charge, for the purpose of protecting the individual and the collective group;

b. make proper use of all machinery, equipment, utensils, dangerous substances and preparations, means of transport and all other work tools and safety devices;

c. make proper use of the protection means and devices made available to them;

d. immediately notify the employer, executive officer or officer in charge of deficiencies in the means and devices mentioned in subparagraphs b) and c) above, and any other dangers they learn of, and in the event of emergency make direct efforts, within the limits of their duties and capacities, to eliminate or reduce said deficiencies or dangers, giving due notification thereof to the health and safety officer;

(……..)

h. contribute, in conjunction with the employer, executive officers and officers in charge, to the fulfilment of the obligations required by relevant authorities and those requirements deemed necessary for the health and safety of workers during work time.

---

[6] The Law no. 626 is an Italian law that puts into effect an European Directive on occupational health and safety.

besides being technically feasible, are economically sustainable by the Region, that is, whether they can be covered by the budgetary resources committed. Certain requirements have already been identified on this issue, though they need to be re-discussed in the light of the debate currently underway in the Department for Public Administration on the setting forth of a legal framework to govern teleworking.

The requirements identified have been motivated by a <u>serious commitment </u>to addressing issues which to date are characterised, perhaps intrinsically, by a certain degree of ambiguity, as it is a <u>**fact**</u> that the domestic workplace is necessarily multi-functional. Objective limits exist on the possibility of rendering a domestic workplace compliant with laws in force (on night lighting for example) due to the different safety regulations governing workplaces and homes.

Hence it would be opportune for such provisions to be agreed upon in conjunction with trade unions.

The provisions under consideration concern:

- o the evaluation of fire hazards, requiring the installation of a fire extinguisher (entailing costs of approximately 50 euros) and training on its use (4 hours)
- o full explication through training (attested in writing, also through signed declaration by the teleworker, to be agreed upon with trade unions) of the <u>specific requirements</u> binding <u>**in practice**</u> on teleworkers under the provisions of Article 5 of law no. 626. For ease of consultation to confirm the claims made herein, an extract of Article 5 has been included above in the box on the previous page.
- o Checks on connection times (<u>**not**</u> <u>working hours</u>) in order to identify situations of potential risk of *workaholism*
- o The need to define an analogous mechanism for privacy concerns, <u>especially if,</u> <u>as it is hoped</u>, the requirement that the work station be used exclusively for the purposes of work with the Region is lifted[7], thus rendering telework an opportunity to promote the spread of IT knowledge and the Internet culture in families

❑ The guarantee of insurance cover needs to be ascertained, to be regulated by the Department for Public Administration or through a formal submission to INAIL highlighting the aspects relating to the multi-functional use of the domestic workplace in teleworking, in order to attain attested guarantees that full insurance cover will be afforded.

❑ Expressly set forth, in agreement with trade unions, that the employment situation of the teleworker can at all times be changed:
- o at the request of the teleworker,
- o at the initiative of the Region, for example in the event of changed working circumstances that significantly reduce the suitability of tasks for teleworking;

❑ The potential benefits of teleworking need to be fully enhanced

---

[7] This would of course have an impact on the suitability of certain tasks for teleworking, as well as on the cost of technical equipment, in order to guarantee suitable levels of security for institutional information. This issue will need to be addressed by a specific assessment project, but at present, we have no doubt that in the majority of situations the outcome would be clearly positive.

- o **FOR THE TELEWORKER**, for whom the average number of hours saved in commuting time in one year is equal to the number of working hours otherwise contained in the total number of annual leave days in one year.
- o **FOR THE INSTITUTION**, seeing as the outcomes achieved represent an important and positive innovation contributing to "Greater Efficiency and Less Bureaucracy for Tuscany."
- o **FOR THE COMMUNITY**, considering the benefit deriving from the opportunity to dedicate greater attention to the family which teleworking gives.
- o **FOR THE SPREAD OF KNOWLEDGE AND FOR GREATER COMPETITIVENESS**, if the possibility of using teleworking as an opportunity to promote an IT culture in families is pursued (by all means feasible).
- o **FOR THE ENVIRONMENT**, given that on average, a teleworker represents two tonnes (rounded figure) of carbon dioxide saved through the reduction of fuel consumption achieved by not commuting.[8]

---

[8] For the purposes of rigour, it should be stressed that existing literature does not give a unanimous opinion on the issue of fuel savings related to commuting, as consumption saved thereby may be used by the teleworker in other activities, as shown in a counterexample (the RomaTrADE project). This was not the case in our trials, however, as 3/4 of the teleworkers declared to have achieved the savings they hoped for in their travel expenses.

6   CONCLUSIONS

Conclusions drawn have been grouped under two points: overall considerations on the trials held, and perspectives for further and broader developments.

6.1   Concluding Considerations

On the basis of the trial programme carried out in Regione Toscana, the following can be claimed:

- o   Home working substantially reinforces the image of teleworking as an attentive approach by the Region to teleworkers and their specific needs
- o   Changes are required in the fields of

    - ▪ **Safety**
    - ▪ **Internet connection**

    necessary respectively for reasons of statutory requirements in force and economic motivations.

- o   Greater investment for relational support (better training, greater animation of the forum) would enable the residual weak points to be transformed into points of strength, representing the **necessary conditions to broaden the population base interested**.

The key issue to be addressed in order to achieve widespread diffusion remains the reduction of costs, which nevertheless is feasible.

The analytic table below estimates the costs incurred for a single home worker, economically adjusted and reported net of the effects of increased productivity, estimated at a minimum of 15%, equal to 4,891 euros per year, per teleworker.

BUDGET PROPOSAL - ANNUAL COSTS & REVENUES FOR THE REGION PER TELEWORKER				
COSTS				
		One-off costs per teleworker	Annual costs per teleworker	Annual costs or one-off costs per teleworker /three (1)
Additional health & safety costs	equipment (2)	€ 308,5		€ 102,8
	work	€ 148,2		€ 49,4
Connection costs			€ 500,0	€ 500,0
Refund of energy bills			€ 180,0	€ 180,0
Additional HW service & SW licensing costs				
Technical-organisational improvements in workplace	Laptop	€ 1.250,0		€ 416,7
	Training (3)	€ 250,0		€ 83,3
	development	€ 350,0		€ 116,7
Roundings-off				€ 0,1
ANNUAL COST PER TELEWORKER				€ 1.449,0
REVENUES				
	average number of days per teleworker	minimum cost per day	minimum overall cost per teleworker	unitary revenues per teleworker
Reduced sickness leave costs (4)	5,0	€ 148,2	€ 746,3	€ 746,3
Reduced meal costs (5)	144,0	€ 4,9	€ 702,7	€ 702,7
ANNUAL REVENUE PER TELEWORKER				€ 1.449,0
BALANCE (net of increased productivity)				€ 0,0

Notes:

1) corresponding to the amortisation rate where applicable, and requiring a rapid return on investment in the case of one-off costs

2) cautiously assuming a 100% need for cut-out boards and fire extinguishers (35 euros), and a 50% need for desks, chairs and footrests

3) 4.5 days instead of the 4 need for the trial programme (for training on fire safety)

4) taking the difference in average number of absences and calcuating the difference in the average number of days per absence

5) arithmetic mean between restaurant vouchers and staff restaurant contributions borne by the Region

6.2   Perspectives for the Future

Given the positive outcomes achieved in the trial programme, the Regional government has decided to extend the home working programme for the group involved in the trials.

An analysis of the results of the trial programme leave no doubt on the expediency of pursuing and developing home working, with a view to approaching the full range of models that fall within the definition of teleworking (telecenters[9], *on-site teleworking[10]*, *nomadic teleworking,* remote working).

Perspectives focus on the:

- o diffusion of home working
- o introduction of on-site teleworking from the offices of other civil service administrations

Home Working

In monitoring the trial programme, certain room for improvement was identified within the extremely positive overall assessment of the programme, pointing to the following paths of action:

- identification of tasks suitable for teleworking and common to all the Directorates General (macro-activity);

- adoption of the most appropriate technological solution (public ADSL, ADSL with guaranteed minimum band, ISDN, other) for the specific tasks carried out by the teleworker;

- change of the two desktop solution (one in the office and one at home) to the use of a single laptop computer with "carry-on" service and assistance - that is, provided only by the supplier, or in the offices of the Region. In this way, the doubling of software licensing costs can be avoided, among other things;

- identification of work space in the offices of the Region to be shared by teleworkers on days when they carry out activities in the office;

- setting forth of certification procedures for the domestic workplace, in agreement with trade unions, as regards features connected to health and safety.

Teleworking from the Offices of Other Civil Service Administrations

The introduction of teleworking from the offices of other civil service administrations in the various Provinces of Tuscany, through the establishment of agreements between Institutions, would enable workers who live near the various offices to carry out a large part of their work from those offices. This approach offers clear advantages for workers, the community and the environment.

---

[9] This category includes remote working from the offices of concurring Institutions.
[10] The Interconfederal Agreement signed 9/06/2004, absorbing the European UNICE/UEAPME, CEEP and CES Agreement, does not classify on-site telework as a form of teleworking. On–site Telework would be applicable in situations such as the offices of the ex-Civil Engineer Corps.

7 MAIN LITERATURE

Internal sources
- Summary of the questionnaires completed by the teleworkers
- Summary of the perceptions held by the teleworkers
- Summary of the questionnaires completed by executive officers
- Summary of the perceptions held by executive officers
- Summary of the questionnaires completed by co-workers

Documents on works and initiatives involving the Region
- Formez Questionnaire
- Eures Questionnaire

Bibliography
- "Status Report" on the issue of the DG XIII (1997-2002)
- Dossier "Telework in the Civil Service Administrations" by the Italian government, July 2004
- Laws (including the "Bassanini Ter" and Law no. 626 on Occupational Health and Safety) and Trade Union agreements (ARAN, Interconfederal agreements, specific agreements) relating to teleworking
- Monographic papers, in particular
  "Telelavoro in movimento" by Ceri and Failla
  "Telelavoro in ENPACL"
- Documentation on meetings held with industrial groups by the Società Italiana Telelavoro

Internet websites
Various sources, in particular http://telelavoro.formez.it/