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Target Project - Ref 96/45503

Pilot Platform Evaluation Report

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EXECUTIVE SUMMARY

Since its commencement on 1 April 1996, the TaRgET project has realised significant achievements. All members of the project management team and regional co-ordinators have strived to obtain maximum progress within the project life-cycle. The main challenge of the project was to determine the elements of and then develop a trans-regional distance learning platform to form the basis of an innovative approach to the delivery of both education and training and promote the concept of lifelong learning.

This challenge has been met in all of the ten European regions involved in the project. All of the regional co-ordinators have either completed, or are in the process of delivering distance training to SMEs via Euro-ISDN. This achievement is even more significant given the fact that at the commencement of the project the majority of training organisations did not have the technical infrastructure of experience of delivering training using desk-top videoconferencing. Furthermore, none of the SMEs involved in the pilots had the available technical infrastructure or previous experience of receiving training via such innovative methods.

The operational and evaluation phase of the project is, with the production of Deliverable 7 *Pilot Platform Operational Reports* almost brought to it's conclusion. Ongoing analysis of the technical performance of the platform and the educational evaluation from the delayed Greek pilot project will be incorporated into the final project report - Deliverable 8 to be submitted at the end of December 1997. This report will also contain a detailed cost analysis of the platform and a Business Plan.

1. INTRODUCTION

The TaRgET project is designed to address all issues associated with the design, implementation and operation of a distance learning network using Euro-ISDN applications to deliver training to SMEs both regionally and trans-regionally.

1.1. TaRgET Objectives

The objectives of the project are:

- to address the issues involved in the design, implementation and operation of a flexible, easily accessible and cost effective means of delivering training materials and programmes to SMEs.

- to implement and operate a trans-regional distance learning platform using Euro-ISDN based on the results from an initial feasibility study.

1.2. Main Activities

Following the outcomes of an initial feasibility study, the main activities have involved the implementation and operation of a trans-regional distance learning platform using Euro-ISDN at ten education and training institutions. These activities have included the adaptation of existing training material to ensure it is suited to this method of delivery and, in close collaboration with 13 SMEs in eight involved countries, the logistical organisation of providing training to employees via desktop videoconferencing. A final report will be produced recommending a way forward for the use of this technology in training.

1.3. Objectives Deliverable D7: Pilot Platform Evaluation Report

The principal objectives of the Evaluation Report were to evaluate:

- user acceptance;
- delivery effectiveness;
- operational effectiveness;
- technical effectiveness;
- initial platform cost analysis.

Deliverable 7 provides an analysis of the data and experiences received by the international project management up to 31 October 1997.

1.4. Methodology Used

Thorough evaluation procedures have been conducted during the project. The evaluation has been based upon the continuous completion and submission of **evaluation forms** designed, distributed and analysed by the operational and technical management.

Additionally, at the **final project meeting** held on 13 October 1997, regional co-ordinators were requested to present a **detailed evaluation analysis** of their regional pilots. This analysis focused upon 6 main evaluation areas defined by the project management.

Independent evaluation procedures were also conducted in the certain regions. Two students from the Mid-Sweden University conducted detailed analysis of the two Swedish pilots as part of their studies.

1.4.1. Evaluation Forms

Concerning the detailed technical and educational experiences of the pilots themselves, the project and technical management developed questionnaires to record the following:

- technical performance and outcomes of each videoconference (call logs);
- monthly trainer summary;
- trainer final experiences (at the end of the pilot);
- trainee experiences (after the first month of training and at the end of the pilot);
- Forms, completed after a training session in the use of videoconferencing delivered to all regional co-ordinators by the Audio Visual Department of the Katholieke Universiteit Leuven.

The questionnaires (which can be found in the Appendix 1) were made available to all partners and participating SMEs in November 1996. The forms were also made available on the TaRgET web site address - ***http://projects.elis.org/target,*** hosted by the Italian partner, Associazione Centro Elis.

The evaluation forms were submitted monthly to the management team to enable ongoing analysis of the operation of the platform.

1.4.2. Final Project Meeting, 13 October 1997 - Evaluation Issues addressed during Regional Presentations

Given the individual nature of each regional TaRgET pilot project, a structured final evaluation procedure was formulated by the project management. It was decided to dedicate most of the final meeting to detailed presentations from each region.

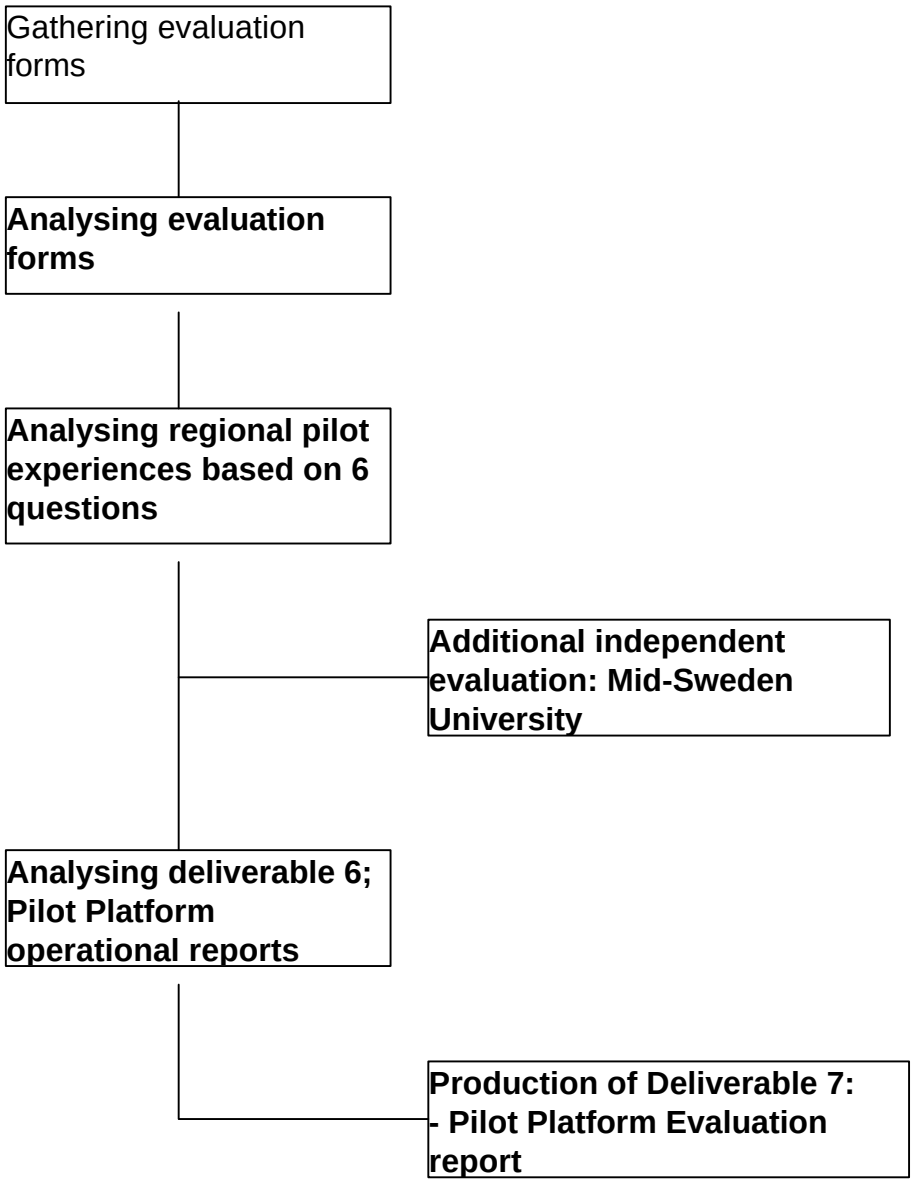
Prior to the meeting the regional co-ordinators were informed of the 6 main evaluation issues to be addressed during their 20 minute presentation (the 6 issues are provided in section 3). This procedure ensured that all of the essential evaluation areas were covered in each region and allowed for constructive comparative discussion to take place.

1.4.3. **Study-plan and methods**

The activities which took place during Workpackage 8 are outlined in figure 1.

Figure 1:

Studyplan TaRgET – Deliverable 7 Pilot Platform Evaluation Report



2. TARGET PROJECT - DISTANCE LEARNING PILOT PLATFORM

2.1. Description of the transregional distance learning pilot platform

The evaluation of the TaRgET pilot activities is based upon the specific nature of the distance learning platform established during the project.

The selection of the platform was based upon the training needs as defined in Deliverable 1 *Needs Analysis Report* and as a result of a thorough technology evaluation conducted during Deliverable 2 *Technical Evaluation.*

During Deliverable 2, research into the European videoconferencing market was undertaken. Taking into account responses from questionnaires distributed to TaRgET partners to determine current technologies used and the applications required to conduct the training in the pilots, products from six manufacturers were obtained and their performance evaluated. The technical evaluation addressed the following factors: Availability; Functionality and Ease of Use; Standards Compliance; Hardware and Software Requirements; Peripherals and Costs.

The Technical management, in consensus with the regional co-ordinators, opted for the selection of the following equipment to form the basis of the platform:

- Nokia Mediastation 447k
- Digital Venturis FX5133 PC
- VCON Armada Cruiser 100 card

This videoconferencing system was installed in the majority of training organisations and participating SMEs involved in the regional pilots.

Slight regional variations to the standard platform were determined by partners specific requirements. VIA in Belgium received a Picture Tel unit for the participating SME. Due to the early pilot commencement date and large number of sites involved, at the start of the Swedish pilots a roll-about videoconferening system was used in addition to a PictureTel Live 100 desktop system.

Due to the low equipment budget available in the project, cost factors associated with the selection of the equipment played a central role.

The evaluation results as detailed in the following sections are therefore specific to the particular platform established during the project as described above.

2.2. Overview TaRgET Pilot

2.2.1. Table 1: TaRgET Pilot Descriptions

Partner	SME	Nature of training
Sweden Swedish War College Bengt Kroon	NNP, which has 15 stores in the Lower Norrland region in Sweden	Basic management training to 15 NNP store supervisors Training Delivered in the Swedish language
	Saw mills, 9 Timber Companies in Jämtland in Sweden	Business English to sales personnel in timber companies. Training Delivered in the Swedish and English language.
UK Hertford Regional College Anna Malchow-Perryman	OCE	Basic maintenance. C & G, BTEC. Training delivered in the English
	Drake Electronics	Basic maintenance. C & G, BTEC. Training delivered in the English
	Paris Travel	Language training Training delivered in English and French.
Italy Associazione Centro Elis Michele Crudele	Libero Instituto Universitario Campus Bio-Medico, University in Rome.	Safety Rules/techniques on fire prevention. Training delivered in the Italian Language
Ireland RTC Tallaght, Dublin Pat Coman	MDS telephone systems	Electrical and mechanical skills development. Training delivered in the English language.
Belgium VIA Luk Indesteege	Borealis, plastics production plant, Beringen, Diepenbeek	Safety and responsibility care. Total Productive Management Training delivered in the Dutch Language.
UK NWIFHE Derry Robbie Hegarty	Total Engineering Design and install control systems in the chemical industry.	Amplifier design and digital techniques. Training delivered in the English Language.
Spain Camera Oviedo Barcelona Brendan Doyle	Ingenieria y Suministros Asturias Antonio Lopez	Language audit and training. Training delivered in the Spanish and English Language.
Netherlands Technology Centre Limburg Belinda Tanner	Textron Automotive LTD Polymer products production	To train production operators to become certified mechanical operators (VAPRO A). Training delivered in the Dutch Language.
Greece Greek Productivity Centre Dimitris Passouris	Hellenic Arms Industry S.A Arms Industry	Application Training Windows, Word, Excel. Training delivered in the Greek Language.
UK North Trafford College	Holt Lloyd Ltd. Process Industry.	Process operator training to recognised competence level. Theoretical basic training. Training delivered in English Language.

2.2.2. **Table 2: Details the ways in which partners use the applications available**

Site/Country	Application	Uses	Language Used
Sweden Swedish War College	E-Mail Videoconferencing	Communications Management training Language teaching Group meetings	Swedish, English
UK Hertford Regional College	E-Mail Videoconferencing	Communications Tutorials, Group meetings	English
Italy Associazione Centro Elis	E-Mail Video Conferencing File Transfer Application sharing	Communications Tutor/Student Teaching Sessions, Group meetings Tutor/Student Teaching Sessions Presentations	Italian, English
Ireland RTC Tallaght	E-Mail Videoconferencing	Communications Tutorials, Group meetings	English
Belgium VIA vzw	E-Mail Videoconferencing	Communications Tutorials Group meetings	Dutch, English
UK NWIFHE	E-Mail Video Conferencing	Communications Test Links, Teaching, Group meetings	English
Spain Camara Oviedo,	E-Mail Videoconferencing	Communications Group meetings	Spanish, English
Netherlands Technology Centre Limburg,	E-Mail Video Conferencing File Transfer Application Sharing Whiteboard	Communications Training Workshop, Demos, Group meetings Transfer of Presentations Demo Vocational Training	English, Dutch
Greece Greek Productivity Centre	E-Mail Videoconferencing Application sharing	Communications Student/tutor comms Group meetings Multimedia applications	Greek, English
Uk Western Connect	E-Mail Video Conferencing File Transfer Application Sharing	Communications Testing, Technical management Group meetings Project materials	English
UK North Trafford College	E-Mail Video Conferencing Application Sharing File Transfer Whiteboard	Communications Test, Tutorial, Group meetings Test, Practice Test, Practice	English

2.2.3. **Table 3: Details of users involved in the pilot**

Site/country	Total no. of groups trained	Total number of Trainees		Total of number Trainers		VC SITES Total per session (included trainer)
		Per group	Ratio trainer : trainee	Total	no. per session	
Sweden Swedish War College	1	15	1 : 15	7	1	16 different VC sites, connected with a bridge

Bengt Kroon	1	9	1 : 9	1	1	10 different VC sites connected with bridges
UK Hertford Regional College	1	3	1 : 1	1	1	2
Anna Malchow-	1	6	1 : 1	1	1	2
Perryman	1	3	1 : 1	1	1	2
Italy Associazione Centro Elis Michele Crudele	4	35	1 : 9 1 : 7 1 : 12 1 : 7	1	1	2
Ireland RTC Tallaght, Dublin Pat Coman	1	1	1 : 1	1	1	2
Belgium VIA Luk Indesteege	3	33: 1 x 8 1 x 3 1 x 22	1: 1	1	1	2
UK NWIFHE Derry Robbie Hegarty	1	1	1 : 1	1	1	2
Spain Camera Oviedo Barcelona Brendan Doyle	1	6	1 : 6	1	1	2
Netherlands Technology Centre Limburg Belinda Tanner	1	3	1 : 1	1	1	2
Greece Greek Productivity Centre Dimitris Passouris	1	10	1 : 1	1	1	2
UK North Trafford College	1	4	1 : 4	1	1	2
TOTALS	18	129		19		48

2.3. Sectors, Sites, Users and Training Involved

Nature of Training

Breakdown of users involved in the pilots

3. OUTCOMES: FINAL EVALUATION OF REGIONAL PILOT PROJECTS

As described in section 1.4.2, each regional co-ordinator was requested to provide an overall final evaluation of their pilot based upon 6 main issues outlined by the project management.

The outcomes of the presentations and the discussions which followed during the meeting are as follows:

3.1. User Acceptance of the technology

How have the users (both trainers and trainees) accepted the technology?

Prior to involvement in the TaRgET pilot projects the majority of trainers and trainees had little or no previous experience of videoconferencing The overall conclusions concerning user acceptance were as follows:

i) Trainer Acceptance

a) Start of Pilot
In general, the majority of trainers were willing to accept using the videoconferencing equipment for training. At the start they were very open to the technology and were interested to learn new methods of delivery of training. Although the adaptation of the traditional learning material and the teaching style was time-consuming (more-so than originally envisaged), they were keen to be involved in this process from a staff development perspective.

b) During Pilot
However, problems were encountered in handling the new technology, especially for those trainers who were not computer literate. In addition, when technical problems occurred (such as a break down in the connection) the learning environment was de-stabilised. This system unreliability did produce a level of frustration amongst some trainers, nevertheless, so as not to de-motivate the trainees they were careful not to let their frustration be seen.

Also, a lot of trainers commented upon the fact that giving a lecture or mentoring via videoconferencing requires a very high concentration level and is therefore very tiring. It is for this reason that after a few sessions, trainers introduced a 5-10 minute break after 30 minutes of videoconferencing.

c) After Pilot
The general opinion amongst trainers involved in the pilots was that the amount of time available for them to get accustomed to using the technology and the training in the use of the equipment was not sufficient. However, the majority are keen to build on their experiences in the future.

ii) Trainee Acceptance

As with the trainers, at the start of the pilots most trainees were open to the technology. During the pilots technical problems somewhat reduced the acceptance level although at the end most concluded that they would be willing to receive training via this method in the future.

Additionally, individual trainee experiences did vary as a result of the following factors:

a) Their previous knowledge of computers -
As with the trainers, those trainees who were not computer literate before the start of the pilot faced a much steeper learning curve compared to those who were computer literate;

b) The computer skills and videoconferening experience of the trainer -
In some pilots, where comparative data was available, the quality of lessons delivered by trainers who were computer skilled and had received thorough training in the use of videoconferening were perceived as being higher;

c) Motivation by the trainers -
The trainee acceptance was also greater when trainers provided frequent motivation and encouragement during the training;

d) Location of the videoconferencing equipment within the SME -
Some trainees encountered disruptions and reduced acceptance of the technology due to the disruptive learning environment which had been created within the SME;

e) the attitude of the trainee -
The character of the trainee also affected their acceptance of the technology. A number of partners commented that less confident trainees found the technology difficult to accept at first and were rather “Camera Shy” and reluctant to sit in front of the screen.

However, those students who were nervous in the beginning soon overcame the fear of the technology and in fact, as a result of participating in the sessions became more confident and developed stronger communication skills.

In conclusion, despite the possible limitations and obstacles described above, the majority of trainees involved in the pilots were suprisingly open to the technology and were willing to accept it as a new support tool in their training.

3.2. Lessons learnt and recommendations

In terms of lessons learnt and necessary conditions for success, what would you recommend to future training organisations planning to introduce this training delivery method to SMEs?

From the regional pilots, the main lessons learnt and recommendations to future training organisations planning this delivery method are as follows:

a) Ensure that the system and technology is tried and tested (is watertight) before being introduced to the company and the trainees;

b) Make firm agreements with the management of the company and ensure that the management is deeply committed to the methodology of training and that flexible work patterns are in place;

c) Establish a solid training environment in the company:
- provide a quiet environment where trainees can train effectively;
- ensure that the videoconferencing room is well-designed (lighting, back-drop; availability of additional cameras, microphones);
- ensure that sufficient ISDN lines are dedicated for use during the training;
- make alternative communication links available in case of loss of connection;

d) Provide thorough training to both trainers and trainees in the use of the equipment, and videoconferencing techniques.
Allow sufficient time for users to familiarise themselves with the equipment and gain practical experience i.e. “learning by doing”;

e) Hold a face-to-face meeting with all people to be involved in the training (trainees, Trainers, company managers, tutors, evaluators) before the first videoconferencing training session;

f) Have one person available both in the company and training organisation who is skilled in using the equipment (to help with problem-shooting)

g) Motivate trainees and provide incentives to persevere with the technology

h) Conduct continuous evaluation of both the system and the user acceptance to ensure that problems can be identified and remedied at an early stage.

3.3. Suitability of the training subject to this delivery method

Was the training subject content of your pilot suited to this delivery method?

As indicated on the partner activity table in section 2.2, the main areas of training delivered during TaRgET were as follows:
- Business English Language Training
- Leadership Management
- Health & Safety Regulations
- Basic Electronics and Process Operator
- IT Application Training

The main conclusions concerning the suitability of the training content were as follows:

a) Business English Language Training

Technical problems severely reduced the effectiveness of the language training courses. The sound quality provided by the standard system with half-duplex was the main cause of this reduced effectiveness.

It was noted that for language training, maybe more than any other subject, high sound quality enabling precise pronunciation is of utmost importance. Video quality was also regarded as being poor. Again, video quality was also viewed as being important particularly for language training as body language, facial expressions and for example, being able to see the position of the mouth clearly are important factors in the learning process.

During the Swedish pilot trainees became increasingly critical of the technology and quality of lessons after the delivery of the videoconference sessions was switched from the roll-about system to the desktop Nokia Mediastation:

Nevertheless, with reduced technical problems, improved organisation of the course and allowing more time for trainers and trainees to become accustomed to using the technology, the end conclusion from the pilots is **that Language training is suited to this delivery method albeit with certain limitations**.

Encouragingly, at the end of the Swedish pilot the head teacher of Business English commented that:

"*the participants have received a greater self-esteem, a better vocabulary, and thereby have increased their communication skills in the English Language"*

b) Leadership Management Training

The requirement to be able to stage structured discussions between the trainer and trainees was regarded as being an all important factor in the effectiveness of Leadership Management Training .

However, due to the sound delays encountered during the videoconferences and the fact that only a limited number of participants could communicate at a given time, discussions became stifled and not as dynamic as in a face-to-face learning scenario.

In conclusion, it was felt therefore that the subject content **Leadership Management was not suited to this delivery method** as too much discussion is required which is not easily facilitated by desktop videoconferencing. As noted by the co-ordinator:

"A clear majority (of users) could consider using this from of education again ***if the subject was more concrete than matters of leadership****".*

Further still, a large section of the Leadership Management course addressed the issue of business development and it was felt that the particular needs of the company and the employees should have been more explicitly addressed in the training.

c) Safety & Health Regulations Training

The contents of the Safety & Health Regulations course were obligatory for the employees to learn as it was teaching new standards imposed by the Italian government.

In conclusion, the regional co-ordinator commented that the **subject content was not suited to this delivery method** due to the fact that the content was *"scarcely interesting to the majority of the trainees, even though it was compulsory".*

Furthermore, the training situation created (the remote group following the training either in front of the 17" monitor or on a 200 x 200 cm screen) produced a rather "talking-head showing slides" scenario. This method is viewed as being suitable as long as the content is of interest to the trainees and the problem of simultaneous vision of slides and teacher is overcome.

In future use of this delivery method, the Italian partner noted that the nature of the training to be delivered will be more carefully selected.

d) Basic Electronics & Process Operator Training

The suitability of the content of Basic Electronics and Process Operator training was viewed as being reduced due to technical limitations of the established platform.

In addition to poor sound quality, the main technical drawback stemmed from the fact that

the application sharing facility *Farsite* was much too slow. This meant that demonstrations of practical solutions, experiments, graphic images and multimedia applications were not effective.

The delay and lack of visibility of practical work meant that the quality of learning via this method was unsatisfactory. The fixed camera was also a drawback as trainers wanted to be able to look at students carrying out practical exercises.

Nevertheless, through the inclusion of external resources such as cameras, whiteboard and additional microphones and speakers, effective teaching methods were designed during the pilots. This activity improved the learning effectiveness (despite the fact that the basic platform had been almost totally bypassed).

In conclusion therefore, trainers believe that **with reduced technical problems desktop videoconferening is a suitable delivery method for this training** (particularly for use of mentoring and guiding trainees).

e) IT Application Training

In addition to the technical problems faced in the delivery of the basics and electronic and process operator pilots, the Information Technology pilot encountered further problems.

The man problem stemmed from the fact that when training using specific Microsoft applications such as Excel, the small lettertype and font size used in the applications were not visible during the videoconference sessions.

It is for this reason that **increased video quality is required** to improve the suitability of the IT Application Training.

3.4 From your regional experience how effective is this teaching medium for:

a) mentoring and guiding trainees;

The general consensus amongst the partners was that the platform used in the pilot trials was most effective for mentoring and guiding trainees on a one-to-one basis as it provided the opportunity to have a “virtual look over the shoulder” of the trainee.

b) delivering ‘traditional’ lectures;

The platform was also perceived as being useful for delivering ‘traditional’ style lectures although the quality of the lecture was inferior to a face-to-face lecture.

The usefulness was seen as being more for practical, logistical and geographical reasons rather than pedagogical ones.

c) delivery of course materials/sending and receiving assignments/administrative functions

In terms of delivery of course assignments and administrative functions the use of the system was seen as being satisfactory as technical problems and the costs involved reduced the advantages compared to more traditional methods.

An overview of partners responses to the effectiveness of the teaching medium is provided in Appendix 2.

3.5 BENEFITS AND DISADVANTAGES

What are the benefits and disadvantages of this training method for both training organisations and SMEs?

The main benefits and disadvantages of this training method for both training organisations and SMEs were perceived as follows:

Advantages

a) Competitive Advantage -
Due to the new approaches adopted to the services of training and demonstration of products;

b) Cost and Time Saving -
Reduced travel, access to geographically dispersed target groups, economic viability of training small groups, just-in-time training;

c) Globalisation -
Possibility to offer training world-wide and have access to experts at 'low' cost;

d) Staff Development and enhanced public image (PR function).

Disadvantages

a) Technical problems

b) High investment required to train users

c) Lack of standardisation (multi-point videoconference calls)

d) ISDN costs too high (both initial investment costs and communication costs)

e) Reduction in social contacts

A complete overview from all regional co-ordinators detailing perceived benefits and disadvantages is provided under Appendix 3.

3.6 INITIAL PLATFORM COST ANALYSIS

What were the actual costs involved in implementing and operating the platform compared to those estimated?

Initial platform cost analysis has shown that in each region the communication costs encountered through the staging of the local and international videoconferences were considered as being lower than estimated at the start of the project (detailed information provided on page 24 of D6).

Concerning the actual costs involved in the establishment and operation of the platform (ISDN installation; ISDN rental costs; obtaining an monthly cost of an Email account), the experiences differed in each region.

However for all partners, the amount of time required for the installation of the required technical infrastructure, organisation of the pilots and training and familiarisation in the use videoconferencing equipment was much greater than envisaged. It is for this reason that much higher personnel costs have been encountered during the project than originally allocated.
Detailed cost analysis of the platform will be included in D8.

During the final evaluation presentations, regional co-ordinators were also requested to consider the following two points:

i) What future plans does your organisation have to transfer the results and experiences of the TaRgET project into practical use?

ii) What do you consider to be the wider commercial and market possibilities of this method of training?

The information from these points will be incorporated into Deliverable 8- Final Report which will include a Business Plan.

4. EVALUATION OF TRANSREGIONAL ACTIVITIES

4.1 Transnational Co-operation Group Activities

During the Feasibility Report the project management identified 3 transregional co-operation groups for the project. These groups were made up of those regional pilots involving training in similar subject areas

a) Co-operation Group 1: Business English Language Training

Partners involved: Swedish War College, Cámara Oviedo

Point to Point Videoconferences were held for the following purposes:
- to introduce trainers and trainees in each country and to describe the subject content of each course;
- to allow the teachers and students to compare their experiences of videoconferencing
- to discuss (in the English language) business cultures in each country.

The Swedish partner also linked with RTC Tallaght in Ireland for the second Swedish pilot involving the NNP agricultural co-operative. This purpose of this session was to use the videoconferencing facility to gain access to an agricultural expert from Ireland to discuss the problem of BSE.

Both partners considered that the transregional activities enhanced the learning experiences of the trainees.

The access to international experts was viewed as being an important element which will be utilised in the future.

b) Co-operation Group 2 - Operator Training

Partners involved: VIA, TCL, North Trafford College

The activities of this group included staging demonstration videoconference sessions to show training materials and methods used for process operator training within the different organisations.

During the sessions the file transfer facility was utilised to distribute Cdi and CD-ROM-materials.

These sessions provided the opportunity to exchange the training materials, software resources and experiences.

It is planned to develop guidelines of best practice concerning the above activities which will be distributed amongst the partnership

c) Group 3 - Assessment of `Added Value' of ISDN Based Technology

Partners involved: Associazione Centro Elis, Hertfordshire Regional College; NWIFHE, Greek Productivity Centre, RTC Tallaght**.**

The activities of the third trans-regional co-operation group concentrated upon evaluating and optimising the performance of the Nokia Mediastations.

Videoconference sessions were held during the project to compare the performance of the videoconferencing equipment.

Guidelines of best practice are being finalised at present. The focus areas of the guidelines are as follows:

- Sound Quality
- Video Image and Quality/ Application Sharing
- Multimedia Experimentation

The guidelines will be distributed to all partners and will be included in the Final Report.

4.2 Transregional Multi-Point Evaluation

Transregional Multipoint conferences were held on four occasions to link the technical and training working groups of the project. PTT Netherlands provided the bridge and, for convenience and cost-effectiveness, dialled out to all participants.

Three of the multipoints were held in continuous presence mode in which the remote video window is spilt into four quadrants, each showing one remote partner. Using this mode, up to five participants took part in the call, each seeing the other four on the screen.

One call, due to the number of participants was held in standard (voice-activated) mode, in which the participant who speaks the loudest and longest takes precedence over all others and theirs is the picture that appears on the screen.

The technical experiences of the multipoint conferences were, in the main positive and video and sound quality were good (more details available in section 3.3 of Deliverable 6).

However, due to ISDN problems, on both occasions that they should have been involved Italy failed to connect to the conference. This problems is currently being investigated by Telecom Italia.

All participants viewed the continuous presence mode as being a much more effective mode of videoconferencing compared to the standard mode.

Participation in the sessions was viewed as being rewarding by all partners. They were provided with the opportunity to more frequently compare the progress of other pilots, whilst at the same time, gained valuable knowledge and experience of being involved in multipoint sessions.

4.3 Evaluation of Train the Trainer Workshop

As highlighted in the feasibility report, a particular condition to ensure the success of the training activities to be conducted during the TaRgET project is the strong recommendation that participants (mentors, trainers and trainees) should be trained in the use of videoconferencing prior to the operational phase of the project.

It was for this reason that the project management organised for each regional co-ordinator to receive a two hour workshop (via a videoconference) on the use of videoconferencing.

The organisation assigned to deliver this training was the Audiovisuele Dienst Department of the Katholieke Universiteit, Leuven, Belgium.

The total workshop consisted of the two hour videoconference training session, a 40 page handbook entitled “TaRgET - The Effective Use of Desktop videoconferencing for Education and Training Purposes” and an accompanying video tape.

All regional co-ordinators were requested to complete an evaluation from concerning the workshop (which is included under Appendix 1).

The results from the evaluation were encouraging. All parties viewed the training as being effective (the total training was awarded an average effectiveness score of between 3-4 out of 5). In particular, advice concerning the design and set up of the videoconferencing room , videoconferencing etiquette and demonstrations of the possibilities of using the equipment were perceived as being of value.

However, most participants commented that the training by itself did not totally prepare them to train via videoconferencing. It was felt that practical skills would be increasingly enhanced with increased usage.

5. TECHNICAL EFFECTIVENESS

Detailed information concerning the technical effectiveness of the platform can be found in Deliverable 6 - *Pilot Platform Operational Reports.*

As stated in D6, the technical effectiveness of the platform was mostly provided through the completion and analysis of technical call logs.

The main outcomes of the technical effectiveness were as follows:

a) Video quality of the system was perceived as being good;

b) Sound quality on the other hand caused more problems especially when training more then one person.

c) Mostly the effectiveness of the videoconference sessions (in terms of expected outcomes) increased during the later stages of the project, as problems were corrected experiences were enhanced.

d) The Application sharing facility *Farsite* was less effective. This is mainly due to the fact that when sharing multimedia applications or presentations the functionality was too slow.

Technical Effectiveness - Conclusion

There have been technical problems. The worst failure have been due to a hard disk breakdown in a PC, a breakdown of a VCON card, software freezing sporadically, local ISDN difficulties and settings on equipment being changed unknown to the user.

Hardware problems should be reduced when each partner receives, on three month free trial, the latest version of the VCON codec and new software. An upgrade to Windows 95 (to version 4.00.950B) is also highly recommended as the version supplied with the PCs has been superseded.

Some problems in the ISDN network, such as dropped calls, remain unidentified. Telecom Italia continue to investigate Italy's inability to participate in multi-point conferences which include Holland and Belgium.

6. CONCLUSION

Since its commencement on 1 April 1996, the TaRgET project has realised significant achievements. All members of the project management team and regional co-ordinators have strived to obtain maximum progress within the project life-cycle.

In total, 184 users (including trainees, trainers and other staff from the regional co-ordinator organisations and participating SMEs) based in 8 European countries have been involved in the project.

The challenge to determine the elements of, and then develop a trans-regional distance learning platform and deliver training to SMEs via Euro-ISDN was not an easy one to meet. This was particularly so given the fact that the majority of the training organisations did not have the technical infrastructure or experience of delivering training using desktop videoconferencing. Furthermore, none of the SMEs involved in the pilots had the available technical infrastructure or previous experience of receiving training via such innovative methods.

The evaluation of results of the TaRgET project as outlined in this Deliverable are specific to the particular nature of the basic platform established in the majority of training organisations and SMEs (Nokia Mediastation 447k, Digital Venturis FX5133 PC and VCON Armarda Cruiser 100 card).

In conclusion, both trainers and trainees were open to the technology despite technical problems during the delivery (which somewhat reduced acceptance levels for a period).

Not all of the subjects delivered during the pilots were considered as being suited to this delivery method. This mainly stemmed from the fact that either too much discussion was required (Leadership Management) or the actual topic of the training was not stimulating (Safety and Health Regulations).

Technical problems and limitations associated with the platform somewhat reduced the perceived suitability of other subjects during the pilot trials. However, with reduced technical problems and the inclusion of external resources (such as cameras, whiteboard and additional microphones and speakers) effective teaching methods were designed which improved effectiveness of delivery (despite the fact that the basic platform had been almost totally bypassed).

As a result, trainers involved in these pilots (Language Training, Basic Electronics, Process Operator Training and IT Application Training) concluded that with reduced technical problems, desktop videoconferencing is a suitable delivery method.

Concerning the cost analysis, communication costs were lower than foreseen however costs involved in the establishment and operation of the platform varied.

The personnel costs involved in the project have been much higher than envisaged due to the very high amount of time required for the installation of the technical infrastructures, organisation of the training and the time required for users to familiarise themselves with the equipment. However, all partners viewed the activities of the project as being a valuable investment for the activities of their organisation in the future.

In hindsight, a higher equipment budget allocation would have increased the choice of the basic platform to be established which may have resulted in improved technical effectiveness of the platform.

Despite the problems encountered during the pilot the majority of the 184 users involved in the pilot would be willing to deliver/receive training via this method in the future.

Furthermore, all of the training organisations involved plan to exploit the experiences of the TaRgET project and expand such training activities in the future.