DIRECTORATE GENERAL
FOR EDUCATION AND CULTURE

E-learning in Continuing Vocational Training,
particularly at the workplace,
with emphasis on Small and Medium Enterprises

Copyright European Commission

SUBJECT:

Final Report
(EAC-REP-003)

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OWNER: Unisys	ISSUE DATE: 31-Mar-2005	VERSION: 3.0
UNISYS	*Contract Nr. 2003-3237*	

DOCUMENT DESCRIPTION

This is the document "Final Report" of the study on e-learning in continuing vocational training, particularly at the workplace, with emphasis on small and medium enterprises (DG EAC 21/02), hereafter referred to as "the e-learning study".

Purpose and scope of this document

This document is the third contractual deliverable of the study. It aims at providing the Commission with an overview of the work carried out, and at the outcome of the study. It covers the following topics:

► Approach for the study;

► Work performed and outcomes;

► Programmes and policies for e-learning in Europe;

► SME needs;

► Pedagogical aspects;

► Recommendations.

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Management Summary

In March 2001, the European Commission adopted the *e-learning* Action Plan[1], aimed at establishing new methods and means to put the *e-learning initiative* into practice. One of the first conclusions of the Action Plan is that there is a lack of current and reliable information about the situation in Europe in relationship with several key issues.

In September 2003, the Directorate General Education and Culture of the European Commission selected Unisys and its partner EuroPACE to lead a strategic study on *e-learning* in continuing vocational training, particularly at the workplace, with focus on Small and Medium Enterprises. The objective is to "*Assess the current situation and analyse and understand the reasons and barriers hindering the full blossoming of e-learning in the world of work, with particular emphasis on SME's, to formulate recommendations for action in order to overcome the problems and issues identified*".

The pan-European survey

A survey was launched to get a direct feedback from European SMEs, assessing with them the opportunities e-learning could bring as well as the barriers they encountered for and during implementation.

The feedback was requested through two questionnaires: a quantitative questionnaire and a qualitative one. A contact network was established with different organisations, mainly Chambers of Commerce, learning organisations, professional organisations and state organisations for identification of national and regional training programmes and policies, and for the distribution of the questionnaires. The quantitative questionnaire was posted on the Internet where it received 575 valid answers.

The qualitative questionnaire was used for 2 types of contacts. It was first sent to the main e-learning service and solution providers and was also used for in depth interviews with representatives of 6 significant case studies.

In the meantime, desk research was conducted for worldwide documentation on the usage and pedagogy of e-learning in SMEs, and a study group collected information on European, national and regional policies that could encourage the take-up of e-learning in SMEs.

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[1] Commission of the European Communities (2001). *The eLearning Action Plan. Designing tomorrow's education*. Communication from the Commission to the Council and the European Parliament.(COM(2001)172 final) http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0172en01.pdf

Expert workshop

The information collected through the different channels was analysed, structured and presented to a panel of experts coming from universities, learning organisations, professional associations, state organisations and the European Commission. In a 2-days workshop, they were asked to provide their view, draw conclusions and propose recommendations for the development of a learning culture in SMEs.

Study findings

Coming in contact with SMEs without having a clear incentive for them is still a challenge.

It is not only difficult to attract SMEs and get them to participate actively, but it is also hard to find consistent policies or business proposals related to e-learning for SMEs. The degree of complexity for finding such relevant and complete information in the frame of this specialised study is a precious indicator of the difficulty SME owners experience when looking for the same information, and may therefore reinforce the interest of the present study recommendations regarding more uniqueness and consistency.

Though the number of existing documents on the subject demonstrates that the interest for e-learning in SMEs is there, it is striking to see how hard it is to find representative information on the subject. The literature is mainly documenting theories on the subject rather than effectively providing an accurate image of the current situation of e-learning in SMEs.

Yet, the information gathered through all the channels is consistent: most SMEs do not have a learning culture, at least not yet a "formal learning" culture. The reasons are varied:

> ► Their priority is to survive;
>
> ► They have no time to give away: they only look for the exact information they need;
>
> ► The management model is an enterpreneurial one.

The large majority of SMEs is now connected to Internet for their business needs. They are equipped with the basic configuration needed for e-learning: a PC and the Internet. Some already adopted e-learning, but they still are a (small) minority that is concentrated in specific regions of Europe. The main observations and reasons are as follows:

> ► There is a lack of awareness concerning e-learning and the practical benefits for enterprises;
>
> ► The e-learning materials are in general not well adapted to the very practical and specific needs of SMEs;
>
> ► If both awareness and adequate materials were there, proximity is an important factor for SMEs: a local effort needs to be provided

(by regions, municipalities) to introduce e-learning in nearby centres;

► SMEs and individuals (employees) may acknowledge the merit of a formal e-learning and certification, but their learning culture is informal, looking for just-in-time, immediate answers to a problem; they have little time to look for a provider, to contract, to send people in formal training. Answers could be found based on rapid access, maybe pre-paid via associations or paid by subscription formulas, if possible also by sharing knowledge with peers (co-operative knowledge).

For the promotion of learning and e-learning, the following recommendations are further detailed in the report:

► Learning should be integrated in knowledge management, knowledge sharing and change management, and e-learning introduced as part of a larger blend that includes the informal as well as the formal learning;

► The content of e-learning, if translated, is not strongly "national" (except in administrative or fiscal matters) but is "single market" sized. Therefore a 'one stop shop' or single window, presented as an SME dedicated portal would be the most appropriate vehicle to disseminate both awareness and content to all internet connected SMEs;

► Regarding the content, the "free knowledge sharing" and the "proprietary formal e-learning" are not contradictory options, because (at the contrary of their equivalent "free V/S proprietary" software) they do not address the same needs: immediate on one side, formal certification at the other side. Therefore a single portal could both attract SMEs on search for shared knowledge and lead them to formal certifications when needed;

► The role of governments is not to provide course content, but to facilitate the access to infrastructure and to inform, to highlight best practices: broadband Internet, single window portal provision, awareness raising, incentives and investment that generate a virtuous circle regarding knowledge contribution, by supporting the portal operation and awarding the most significant of these contributions;

► Regarding the European Commission in particular, other supporting measures could be:

  • The development of a common e-Learning taxonomy;

  • A support to e-learning communities;

  • The creation of a specific accreditation or "Label";

  • A redefinition of the role of universities;

  • Support to e-learning research.

►   The proximity role of national, regional and local organisations is important also:

- Optimising the role of policies in achieving objectives, raising awareness as close as possible to the SMEs (Evangelist role);

- Supporting a lifelong learning culture, sharing the mission between SME owners, schools or universities, the individual learner, and last but not least training the teachers for e-learning;

- Encouraging partnerships and brokerage by grouping content, awarding communities and contributions, developing a sharing culture between SMEs, associations and universities.

►   The "professionals" – e-learning providers should provide innovative solutions that meet the specific needs of SMEs. They should be willing to customise their products to these (content, format, available infrastructure, learner support and evaluation) at a reasonable cost, with an effective return on investment, and accept that their learning offer is part of a larger mix, including blended learning;

►   Large companies could be encouraged to "coach" SMEs, as in many sectors (e.g. aeronautics, defence) they need a bundle of SMEs to provide them flexible resources in their environment;

►   SMEs themselves could be encouraged in acting pro-actively, networking with other companies and acting as a real learning organisation.

After concluding this study, we are aware to have met only a milestone on a long road. However, in governments and industry, the idea that permanent learning has a value and even is a must, is making progress, closely linked to the progression of the Internet and search engines.

What is still missing is a single place where SMEs could find their way in the e-learning route (and from there be guided to the various e-learning proposals, including shared knowledge), and the various incentive and coordination of policies to harmonise efforts from local organisations, from universities and e-trainers in order to provide more structure, more consistency and more SME focus to their training proposals.

1 TERMINOLOGY

1.1 DEFINITIONS

Term	Meaning
e-learning Study	Usual reference for the "Study on *e-learning* in continuing vocational training, particularly at the workplace, with emphasis on small and medium enterprises", i.e. this study
The Commission	Usual reference for The European Commission, DG Education And Culture
Computer literacy	Ability to work with a computer, usually with office applications and the internet

1.2 ACRONYMS AND ABBREVIATION

Acronym Abbreviation	Meaning
CVT	Continuing Vocational Training
DG	Directorate General
EC	European Commission
EU	European Union
EU-25	EU members and candidate member states
HR	Human Resources
ICT	Information and Communications Technologies
ITT	Invitation To Tender (DG EAC 21/02)
n.d.	No date
NAP	National Action Plan
PMB	Project Management Board
PMP	Project Management Plan
ROI	Return on Investment
SMEs	Small and medium enterprises

2   INTRODUCTION

2.1   THE STUDY BRIEF

In September 2003, Unisys and its partner EuroPACE have been awarded the study of **lot Nr. 3, e-learning in continuing vocational training, particularly at the workplace, with emphasis on SMEs,** which is one of the three studies in the Open Invitation to tender (DG EAC 21/02), launched at the end of 2002. In line with the *e-learning* Action Plan, adopted by the EC on 28 March 2001, these studies aim at the realisation of the potential of using e-learning methods and resources for lifelong and life-wide learning by providing current and reliable information about the situation in Europe in relationship with the following key issues.

> ► The last developments of the e-learning industry and e-learning market in Europe;
>
> ► The use of ICT for learning and teaching in initial Vocational Education and Training;
>
> ► The use of e-learning in continuing vocational training, particularly e-learning at the workplace, with focus on small and medium enterprises (SMEs).

2.2   STRUCTURE OF THE REPORT

Writing a report like this puts the author in a somewhat difficult situation: should all details of the activities and their results be presented, or should the report be restricted to those findings that can support and direct implementation of e-learning in SMEs. The first is probably only interesting for specialists and may tend to confuse others with details; the second approach may leave more questions than it provides answers. The authors have therefore chosen to be reasonably detailed in their communication, but in a such a way that readers with a specific interest can easily find "their" information.

After a brief and consequently also general description of the study's aims, methodologies and connected activities, the findings are described in a more detailed way. These findings are grouped into three larger topics:

> ► Policies on e-learning and SMEs;
>
> ► SMEs and e-learning;
>
> ► Pedagogical issues that are relevant for the study's context.

Finally, the future is tackled. Suggestions are given for future oriented scenario(s), and recommendations are provided for various categories of actors.

3   OBJECTIVES, METHODOLOGY AND ACTIVITIES OF THE STUDY

The **objectives** of the study, as expressed in the Request for Proposal, are:

► "Assess the current situation and analyse and understand the reasons and barriers hindering the full blossoming of e-learning in the world of work, with particular emphasis on SMEs";

► "Provide a comprehensive review of the initiatives and measures to promote the use of e-learning in continuing vocational training, identify good practices and also give examples of initiatives which failed to achieve their objectives";

► "Recommendations for action should be formulated to overcome the problems and issues identified".

The study's **methodology** is illustrated in the following figure.
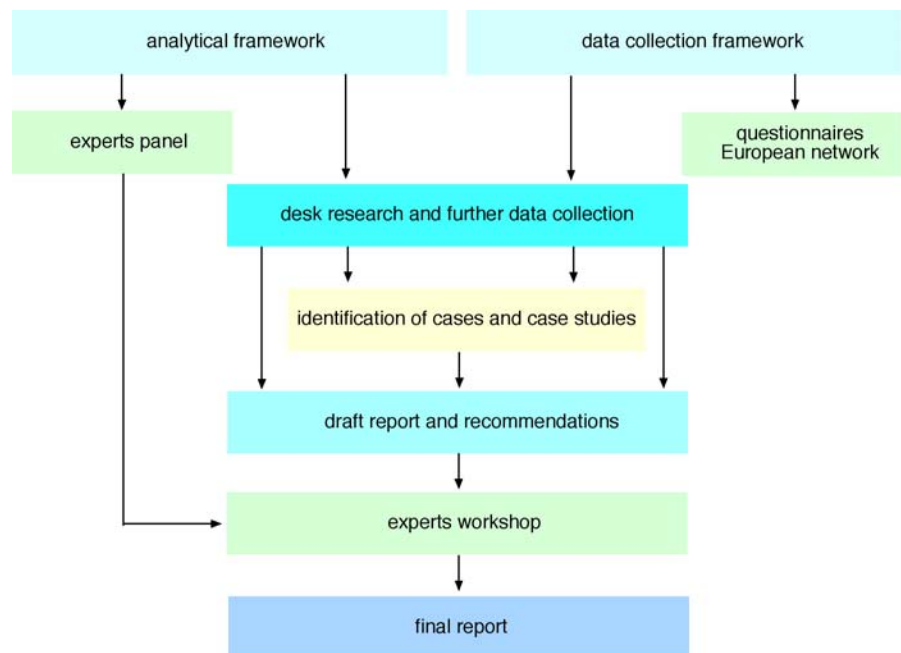
The first step in the study's methodology consisted in creating a common understanding of the work method that would be used for the collection and the handling of data to reach the above-mentioned objectives. Therefore two frameworks were developed that provided for the various stages and aspects of the study the target audience of the actions, the nature and format of the information that had to be collected, indicators for the assessment of the collected data, as well as status and storage of (intermediate) results.

The **analytical framework** defines the overall study structure and includes the following components:

- ► The (numeric, scalable) **indicators** used to measure the level, quality and maturity of the collected information. These indicators are used to categorise the analysed initiatives according to an easily understandable scale;

- ► The definition of the **pan-European panel** to be contacted and interviewed;

- ► The **scenario and recommendation** structure;

- ► The reviewed **report structure** (table of contents) for the presentation of study deliverables.

The objective of the **data collection framework** is to ensure consistency of data collection. In this study, it has been implemented under the form of questionnaires, adapted to their target public.

Data collection was done through a series of activities:

- ► **Desk research** about European, national and regional policies and programmes, outcomes of scientific research (especially on pedagogy of CVT in the lifelong learning chain, on pedagogical models for e-learning and their relevance for the subject of the study), outcomes on previous studies and projects on e-learning (the full list of consulted documents can be found in Appendix B);

- ► The setup and activation of a **European contacts network** of experts and relevant organisations (e.g. Chambers of Commerce, training organisations for SMEs, professional associations, civil administrations in Europe, contacts within the Unisys and EuroPACE networks) within the EU-25 (see Appendix C);

- ► A survey through **questionnaires** (see Appendix A): one for providers, and an Internet survey (primarily quantitative) for companies, which were addressed with the help of the European contacts network.

The **desk research** analysed a number of documents on the Internet that were found in:

- ► Sites of the EC (DG Enterprise, DG INFSO);

- ► Sites of e-learning associations (CEDEFOP, ODL, Global Future Forum, Arafox);

- ► Sites of SME associations (INSME, VIZO);

- ► Sites of market analysis (Gartner);

- ► Google search on keywords (SME, e-learning, in French, English, Spanish and Dutch).

Furthermore, policy documents were collected from governmental bodies in the European member states and candidate member states. A literature

review was undertaken with respect to pedagogical issues, and previous studies and project outcomes were collected.

The **Internet survey** has run from February till September 2004. Though the efforts to promote it were consistent and sustained, the number of responses was not as high as expected and the representativeness of the respondents is not excellent:

- ► 442 answers were received from the Czech Republic, 183 for the rest of Europe;

- ► Out of the 183 "EU respondents", only 133 could be used (valid data, in the scope of the study);

- ► Respondents came mainly from the services, IT and R&D sectors;

- ► The distribution over the countries was very unequal: 442 for the Czech Republic, 41 for Belgium, 39 for Cyprus, and the other countries were largely underrepresented.

Therefore, the input of the survey could not be used as quantitative data, as initially intended: they were just used as a qualitative input for our study and for the workshop.

Case studies were identified through the larger desk research and as outcomes of the contacts within the network, and were the object of an in-depth study through a specific questionnaire and follow-up contacts (by phone, e-mail, conferencing, face-to-face meetings). Six case studies were selected:

- ► DIHK for Germany;

- ► INSTRUX!ON for Europe, Middle East and Africa;

- ► LEARNDIRECT for Scotland;

- ► LEVINTELLIGENCE for Benelux and Scandinavia;

- ► MICROAREA for Italy;

- ► SZAMALK for Hungary.

An extensive description of the case studies can be found in Appendix E.

The outcomes were intensively discussed with **experts** during a 2-days **workshop**, organised in October 2004 at the premises of Unisys. Its objective was to bring together people from diverse cultures and backgrounds, with a common interest for the uptake of e-learning in Europe. The representatives came from the EC, from the CEDEFOP, from governmental institutions, from SMEs, from e-learning providers and from selected case studies.

On the first day, the outcomes of the study were briefly presented, then the participants were requested to draw a picture of the present situation on the following topics: SME needs, pedagogical aspects, organisational needs, programmes and policies.

On the second day, the participants built on their conclusions on the present situation, to make recommendations for the future. The impressive list of expressed ideas has been integrated in the different sections of this report.

All input from the different participants is brought together in this **final report**, which is published in both English and French.

4   SMEs AND E-LEARNING FOR CVT

4.1   CHARACTERISTICS OF SMEs

4.1.1   SIZE AND AVAILABLE INFRASTRUCTURE

More than 99% of all enterprises in the European Union are SMEs. The definition of the concept "SME" overarches enterprises that are very different in nature. To mention only the size dimension, an SME can total up to 249 employees, but be as small as a one-person enterprise too. In fact, according to the 2003 survey of the Observatory of European SMEs, micro-enterprises (<10 employees) total 92 % of all SMEs. And moreover, about half of all European enterprises even have no employees at all[2].

Another important element while considering e-learning is the availability of technology in SMEs. The 2002 survey[3] revealed the following data:

Use of stand-alone PCs and PCs in networks, by size class (percentage of SMEs)

	Number of employees			Total
	0-9	10-49	50-249	
No stand -alone PC and no network	15	5	1	14
Stand -alone PC, but no network	35	21	5	33
No stand -alone PC, but network	17	21	18	17
Stand -alone PC and network	34	53	76	35
Total	100	100	100	100

Source: Weighted data 2002 ENSR Survey on SMEs.

Having either no PCs or only stand-alone PCs reduces considerably the possibilities for SMEs of having e-learning organised at the workplace. Things are nevertheless changing relatively fast, as is demonstrated in the following figure about access of SMEs to the Internet. Connection to the Internet increased substantially, especially in micro-enterprises. Together with the availability of a local network (and the possibilities of an intranet) it should create the conditions for using e-learning at the workplace.

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[2] European Commission Enterprise publications (2004). *2003 Observatory of European SMEs. Report 2003/8. Highlights from the 2003 Observatory.* Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/smes_observatory_2003_report8_en.pdf

[3] European Commission Enterprise publications (2002). *2002 Observatory of European SMEs. Report 2002/8. Highlights from the 2002 Observatory.* Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/smes_observatory_2002_report8_en.pdf

Access to the Internet in 1999, 2001 and 2002, by size of enterprise (percentage of SMEs)

Source: Weighted data 1999, 2001 and 2002 ENSR Surveys on SMEs.
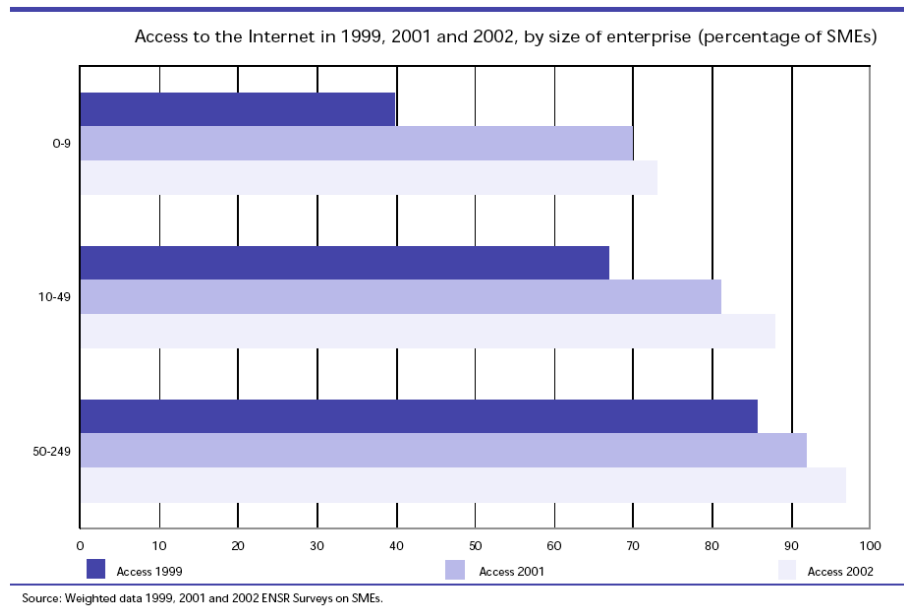
4.2   CVT AND EUROPEAN SMES

The European Observatory for SMEs sixth report[4] studied and analysed the existing CVT activities within the European SMEs and gave a general outlook of the main incentives and barriers that foster/hinder CVT practices in the European SMEs. It contains a lot of information about models of learning in SMEs and attitudes towards training in general.

4.2.1   CVT ACTIVITIES IN EUROPEAN SMES

4.2.1.1   GENERAL CONCLUSIONS

The analysis of the existing CVT activities that this report made led to the following general conclusions.

► Within Europe, there are large **differences** with regards to the country (generally speaking, Northern and Alpine European countries have the highest proportion of SMEs offering CVT). This finding is reconfirmed in the European Observatory for

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[4] European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000.* Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

SMEs 2003 report on competence development in SMEs[5], which notices this **North-South** division, not only concerning the percentage of SMEs involved in competence development activities, but also for the methods being employed (e.g. competence development through knowledge exchange and teamwork are more likely to be found in the North than in the South);

► The **size of the company** is determinant: the larger the company, the more interest and attention is given to CVT. Dagdilelis et al., 2003[6] state that the size is not only determinant for the availability of equipment and connectivity, but also influences other factors that affect training in general and e-learning in particular. The smaller the enterprise, the more likely the owner is also the (general) manager who decides whether, when and which kind of training will be used. Many of these owners/managers are highly skilled in their core business activities, but lack management knowledge, skills and attitudes to run an enterprise, and since barriers for training are most likely to be found in the attitude of employers[7], this person has a large impact on all aspects connected to training. This is also illustrated in a Scottish study about delivering work based learning[8] where it comes out that the smaller the employer, the more chances the preference will go for training at the workplace.

Employers of small enterprises lack knowledge about the learning needs of their employees (EuroPACE 2004 found that especially small SMEs frequently report to have no training needs at all[9]) and of the available training opportunities, including eventual funding possibilities for the purpose. They are often "too busy"

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[5] European Commission Enterprise publications (2003). *2003 Observatory of European SMEs. Report 2003/1 Competence development in SMEs.* Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/smes_observatory_2003_report1_en.pdf

[6] Dagdilelis V., Satratzemi, M. & Evangelidis, G. (2003). Implementing a Nationwide System for Training Very Small Enterprises for ICT Innovation: the Greek Case. *Educational Technology & Society 6(1)*, 26-31. http://www.ifets.info/journals/6_1/dagdilelis.pdf

[7] Attwell, G. (2003) *The Challenges of e-learning in small enterprises. Issues for policy and practice in Europe*. Cedefop Panorama Series, 82. Luxemburg, Office for the Official Publications of the European Communities. http://www.theknownet.com/sme-learning/vet_ict_papers/ictsmes_report.html

Critical Research (2001). *QBO Learning Skills Council Study*. http://www.lsc.gov.uk/NR/rdonlyres/epuxgnl2m7nghrj25733s46gnzmusbsna2ntveq2adubngpob7l5ibeq4cbd76icqdarjnztt76q3e/QBOreport.doc

[8] Glass, A., Higgins, K. and McGregor, A. (2002). *Delivering work based learning*. Scottish Executive Central Research Unit. http://www.scotland.gov.uk/cru/kd01/orange/dwbl.pdf

[9] EuroPACE (2004). *Onderzoek naar voor de Syntra bruikbare nieuwe leervormen*. Not published feasibility analysis on the use of e-learning for VIZO (Flemish Institute for Independent Entrepreneurship) about e-learning within the "Syntra", VIZO's training organizations.

with their core business, training is not a key focus, and they tend to consider it rather in terms of (high) cost than of investment. As training creates a temporary unavailability of the trainee for the core activity of the enterprise, it has a direct impact on its productivity, especially in micro-enterprises, and SME employers tend to fear the loss of their staff to competitors once it is well trained (see the Marchmont Observatory report, 2002)[10];

► Qualified staff is more likely to receive **formal training** in comparison to low-skilled workers, who receive much more **informal, in-house** training;

► Training in SMEs is often of an informal nature, which implies that a lot of the training is organised "in-house" because it is of enterprise-specific nature. A British and a Swiss study reveal that SMEs resort to the training market only when they need to obtain skills and abilities that cannot be provided in house[11];

► SMEs have a bigger **need for custom-made courses** rather than open courses. These tailor made courses are quite expensive, so they are not regarded as a good option. This is confirmed in the already referenced Marchmont Observatory study (2002), which specifies that networking with eventual competitors might create economies of scale and make custom made courses affordable, but this is also not considered as an acceptable option. However, as SMEs often use short-term business strategies, it is difficult to develop customised trainings while maintaining cost-effectiveness.

4.2.1.2 BARRIERS AND INCENTIVES

The report identified some barriers and incentives for SMEs to carry out CVT activities:

► CVT activities are **not regarded as necessary** "per se" by all SMEs;

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[10] Marchmont Observatory (2002). *Adult basic skills in the workplace*. Skills and Learning Intelligence Module. University of Exeter. http://www.swslim.org.uk/documents/themes/LT1_Report.doc

[11] Cosh, A. & Hughes, A. (1998). *Growth, Innovation and Public Policy in the Small and Medium-Sized Enterprise Sector 1994-1997*. Cambridge: ERSC Centre for Business Research.

Sattes, I., et al. (Hrsg.) (1998). *Erfol in kleineren und mittleren Unternemhemen (Success in SMEs) 2*. Afulage (2nd ed.). Zurich: VdF Hochschulverlag AG.

Both mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.300)*. Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

► Pan-European studies have shown that SME employees and employers are becoming **increasingly aware of the importance of continuous training**. It is not only seen as a tool for complementing the experiences gained during compulsory education, but more importantly for keeping up with new technological developments, stronger competitive environments and organisational changes affecting the enterprise's competitiveness;

► In some countries, like Sweden, the existing legal framework in the employment area may become an **incentive for enterprises** to engage in CVT activities, staff training is one of the major parameters by which Swedish enterprise adapt themselves to changes in their economic environment;

► Due to the small size of SMEs, the **absence of employees** for training activities can cause significant side effects on the enterprise's functioning;

► Most SMEs, especially the smaller ones, perceive training as a **cost rather than** as **an investment**, they often prefer to recruit fully trained people or to outsource certain activities;

► Most SMEs have a **short term business strategy**, which makes it more difficult to develop training;

► SME employers are very often **reluctant to invest in people**, on the grounds that the employee is likely to be poached away by competitors. Measures can be taken as in Switzerland, where the employees have to refund the course if they leave the enterprise shortly after a training;

► Generally speaking, SMEs are not interested in improving the general skills of their employees, **training has to be focused on the specific needs** of the enterprise;

► The most quoted barrier by SMEs is the high **cost of courses** and the fact that the existing training offer is too theoretical **and not enough SME oriented**.

► Other barriers include administrative procedures and the lack of transparency of the training market.

4.2.1.3 TRAINING OF SME MANAGERS

The report pays specific attention to the training of SME managers:

► SME managers use a **short term approach**: they only set up a training action plan when they face real problems;

► Most SME managers and owners face **delegation and lack-of-time** problems since they cannot be away from the enterprise too long. They are uncertain about the development of their business, which makes it difficult to plan a long time in advance;

> ► For management training, **cost** seems to be a less relevant
> obstacle.

4.2.2 ICT TRAINING IN SMEs

The report devotes one chapter specifically on ICT and continuous training
in SMEs (Chapter 9.4, pp 310). As with CVT in general, a large difference
between the different countries of the European Union can be observed. The
speed of introduction of ICT varies widely between countries and regions,
but also between sectors, industries and enterprises[12].

It is recognised that ICT is deeply affecting the education and training field
in various ways:

> ► "On the one hand, ICT is **changing the work organisation**
> within enterprises and the structure of competencies and
> qualifications currently required by enterprises. Our current
> technological environment, characterised by constant innovation,
> requires from employers and employees a permanent ability to
> learn, resulting also in a clear danger of gradual exclusion from
> employment and therefore society for certain under-skilled
> groups."
>
> ► "On the other hand, ICT is offering **new possibilities as training
> tools**. Examples of these new possibilities include collaborative
> and interactive learning through educational multimedia tools or
> the possibility to have access to large amounts of information
> world-wide through data networks. Moreover, ICT is currently
> viewed as a powerful training tool for those groups who find
> current modes of learning hard to access. Examples of these
> groups are disabled, sick, house-bound or under-qualified young
> people, people in remote areas or, interestingly from an SME
> perspective, workers in enterprises that do not have in-house
> training capacities and SME owners/managers who lack the time
> for engaging themselves in training activities."

It is clear that in our current study only the second element is relevant,
namely the use of ICT for training. The definition that is given of ICT and
distance instruction in the European Observatory document is rather broad,
including all sorts of technologies: from voice technologies, video
technologies, CD-ROMs, compact-disk interactive tools to computer aided
technologies and the Internet. This definition seems in line with the
definition of e-learning that is used for the study conducted here: "The use of
new multimedia technologies and the Internet to improve the quality of

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[12] European Commission (1996). *Green Paper on living and Working in the Information Society: People First*
(COM (96) 389 final).

learning by facilitating access to resources and services as well as remote exchanges and collaboration."

The **main advantages and disadvantages of distance learning** for enterprises have already been listed in the past and are still valid:

Table 9.8 Main advantages and disadvantages of distance training for enterprises

Main advantages:

- Organisational aspects, such as flexibility of hours, decentralisation of the training process outside the training site, permanent availability of the courses or possibility to reach geographically disseminated populations;
- Cost, since distance training implies important savings related to the lessening of travel hours to the training site, the reduction in transfer cost (travel, lodging, etc), the possibility to train a large number of people from an initial investment in the course design. For this purpose, it is obvious that the contents should not change and the course has to be widely used by a large number of enterprises;
- Teaching aspects, such as simultaneous transmission of contents to all students, adaptability to different habits and learning rhythms, possibility of a more customised training and attention from the teachers.

Main difficulties:

- Difficulties to study in-depth certain training contents;
- Difficulties for the exchange of ideas and problems of isolation. This problem is partially solved by the new communication technologies;
- Difficulties to set up feed-back mechanisms;
- Difficulties for obtaining certain training goals linked to social or practical abilities;
- Difficulties for low-skilled workers and low-motivated students to follow up the training materials;
- Small existing supply of training materials well suited to the enterprises' training needs, resulting in a need for purchasing tailor-made training materials, much more expensive.

Source: AECS (Association of European Correspondence Schools), XV European Congress of Distance Training, Minutes Book, 1996, taken from Rubio Hurtado, M., and A. Escofet Roig, La Formación a Distancia en la Pequeña y Mediana empresa. Usos y Posibilidades (Distance Training in SMEs, Habits and Possibilities), in Capital Humano, No. 118, 1999.

The report also mentions that there is very little published information on the use of ICT specifically for SMEs and that most information is of theoretical rather than practical nature[13], which has been confirmed in the present study. The report does identify some studies with a more empirical perspective. The conclusions are very similar to the conclusions for training in SMEs in general.

> ► The size of the enterprise is determinant, not only for the training offer in general but a fortiori for the use of ICT in training[14];

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[13] This was also one of the conclusions of a research project, the KnowNet, jointly undertaken by CEDEFOP and the European Commission, Directorate-General for Education and Culture which tried to identify key issues related to the use of e-learning in SMEs: "What perhaps emerges most clearly is a somewhat chaotic picture. This could be ascribed to the limited sample size. However, our hypothesis is that this is a true picture of the state of the use of ICT for learning in SMEs in Europe and would be replicated by larger scale studies". A summary of the findings of this research project can be found further on in this report.

[14] Refers to a Danish study "Information technology for training purposes in private enterprises" carried out by IFKA for Centre for Technology Supported Learning (February 1999). The questionnaire study covers a representative selection of Danish private enterprises. This study is mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.312). Luxembourg: Office for Official Publications

► The small business sector is traditionally recognised as being deficient in its use of ICT as a general support tool[15];

► An Australian study showed that SMEs claim to be very interested in introducing computer based training in their enterprises (mainly due to the advantages identified for distance training in Australia) but have very little experience with it so far;

► There are large differences between countries as far as the availability of computers is concerned.

Barriers for SMEs to use ICT for distance training is described as follows in several studies:

► Problems of social isolation and lack of personal contacts;

► High costs, the difficulties in differentiating the myriad of providers and the frequent changes in technology[16];

► Limited access and knowledge of technical matters by customers, technical complications regarding the speed of communications, availability of appropriate infrastructures, high costs, scarce developments of textbooks, shortage of instructors[17];

► Acquisition of the required skills for successfully using these ICT (both as student and as trainer).

Although the new innovative media such as the Internet are becoming increasingly important, an ENSR Enterprise Survey of 1999[18] showed that written material still represented 66% of the training material. We can

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of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

[15] Cf. Chapter 8 on Information Technologies in SMEs in the fourth report of the European Observatory for SMEs (1996). Mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.312)*.* Luxembourg: Office for Official Publications of the European Communities.

[16] Howard, K. (1997). *IT Means Business? A Survey of Attitudes in Smaller Businesses to Information and Technology*. Institute of Management.

This result is also confirmed in Kailer, Norbert (Eds). (1998). *Innovative Weiterbildung durch Computer Based Training, Ergebnisse einer europaweiten Studie (Innovative Continuing Training through Computer Based Training - Results of a European-wide Study).* Vienna: Signum.

Both mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.313). Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

[17] VMA (Verkmenntaskólinn á Akureyri), Hör¶ur Ágústsson, Reykjavik, April 1999. Mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.314). Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

[18] The ENSR Enterprise Survey of 1999 was designed to make uniform data on SMEs available from nineteen European countries. This enabled the European Observatory for SMEs, in addition to using Eurostat data, to make additional comparative analyses based on recent and comparable SME data.

assume that since then the situation has changed, but the percentage is nonetheless interesting.

Although the new technological innovations are getting integrated into the educational and training systems, this process is taking place too slowly in comparison with Japan or the USA, especially as far as SMEs are concerned. In order for Europe to catch up, the report calls on bigger efforts in the next years, but does not indicate what kind of concrete measures should be taken by the European Union in order to reach this goal.

4.3   SME NEEDS

4.3.1   INTRODUCTION

When analysing the barriers that will prevent or the opportunities that will encourage adoption of e-learning, the first question that comes to the mind is what are the needs of the SMEs and how could e-learning meet these needs.

Whatever the country, there is a general agreement that identifying the needs of the SMEs is an absolute necessity, yet a gigantic task. As stated by Klaus Reich and Friedrich Scheuermann: "*SME's operate in almost every sector of the economy. As a consequence they vary widely in their learning and training needs. They have to deal with limited personnel, organisational and financial resources. The situation is furthermore stimulated by the difficulty to formulate detailed training strategies that will enable their employees to be better qualified to cope with increased competition*"[19].

SMEs have different profiles and activities, and their needs vary accordingly. **Training in SMEs** and the whole concept of "developing" the workforce **is not given as much emphasis as in larger organisations**. This is probably due to a combination of factors: business pressure, budget constraints, lack of awareness of the benefits that increased training can bring to business performance, an unwillingness to devote resources (time) for employee training, the fear to loose well-trained resources, etc.

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[19] Reich, K. & Scheuermann, F. (2003) *E-Learning Challenges in Austrian SME's*.
http://futurestudies.org/down/cooperation_collaboration_sme.pdf

4.3.2   SMEs' IT BUYING BEHAVIOUR

In 2002, Gartner made a phone survey to identify the IT spending and Staffing Behaviors of SMEs[20]. This paragraph briefly introduces the conclusions of that study, as they are quite similar to the conclusions the present study could draw.

When buying IT products or services, SMEs will stick to the following behaviour:

► Seeking **productivity gains** is the top priority across all market segments;

► SMEs are very **cost** conscious: price, timeliness and technical capabilities are the major buying criteria;

► SMEs are **conservative** adopters of technology, which often means that they will lag behind for the adoption of new technologies;

► SMEs focus on increasing their **networking and telecommunications capabilities**;

► Major IT spending is focused on **keeping things running**;

► SMES want **customised solutions**, as they perceive their business as unique in many ways;

► The smaller the business, the greater the importance of developing a **personal relationship** with the providers;

► Providers will preferably be **regional or local**;

► For the selection of a product or service, **word of mouth** referrals and recommendations is an important influencer.

4.3.3   THE OPINION OF E-LEARNING SERVICE/SOLUTION PROVIDERS

4.3.3.1   INTRODUCTION

E-learning service and solution providers are important stakeholders in the development of the potential of e-learning. For this study, two types of service providers received a specific questionnaire, covering the items detailed below:

► Providers of well-known e-learning solutions;

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[20] Krammer M. & Kempf T. (2002, October 11). *SMB IT Spending and Staffing Behaviors: 2002 . User Wants and Needs.* Gartner.

► Organisations providing e-learning to SMEs, that were identified as "case studies" for this study.

Below, you will read an analysis of the answers received from the 6 case studies and 11 solution providers. Next to their answer, you will sometimes find a figure between brackets: it indicates the number of respondents who gave that answer. The number of respondents is not very large, but as far as the items are comparable, their answers are in line with the outcomes of the desk research of the study and were also confirmed by the experts during the mentioned workshop. It can consequently be expected that elements, which were brought up during our investigation but not encountered in the desk research have a more general nature than the statistics suggest.

4.3.3.2 BARRIERS TO THE ADOPTION OF LEARNING

Major e-learning solution **providers are not targeting the SME market** today: e-learning will be distributed by learning organisations or professional associations or e-learning SMEs, as our case studies, but not by the major providers.

When asked why SMEs would not implement e-learning solutions, the answers are very convergent:

► There is a problem of **budget**. E-learning requires an important investment to start with: you need the infrastructure, the broadband connectivity, the softwares. If you do not have the critical mass, e-learning could be more expensive than traditional learning; (11)

► SME owners are **not aware of the advantages** that e-learning will bring to their enterprise; (8)

► Currently, SMEs do not have the right **infrastructure**; (7)

► There are too many other pressures on the business; SME workers have **no time** for learning; (7)

► SMEs do not have the resources for the operations and **support** of e-learning; (6)

► Learning is the issue, not e-learning; (5)

► Most SMEs do not have any technological skills; (3)

► Today, there is a lack of scientific data on e-learning effectiveness; (3)

► The current e-learning offer is not appropriate; (2)

► Most SMEs do not have a Human Resource or training department who would introduce the e-learning;

► SMEs do lack the critical mass;

► SMEs are afraid that the introduction of e-learning would be a failure. It is a risk they will not take.

4.3.3.3 ADVANTAGES OF LEARNING

When asked which SME needs would be covered by e-learning, there is less uniformity:

► E-learning will bring the ability to better **manage the time** for learning: just-in-time, when they need it, bite-sized; (5)

► They will get **access to resources** and **expert instruction**; (3)

► E-learning reduces the cost of training, (though all did not agree with that point); (2)

► E-learning does not require any travel time: you can attend from anywhere; (2)

► The contents can be hosted outside the SMEs, they will not need to take care of the operations and maintenance and could also benefit from external support;

► E-learning offers flexible solutions that meet business requirements;

► E-learning is a cost efficient fix to filling skills shortages or gaps;

► E-learning is easy to access;

► The strength of e-learning is that you can learn at your own speed.

4.3.3.4 SMES' EXPECTATIONS

What is the view of providers on the expectations that SMEs have from e-learning:

► SMEs want to **reduce** their **training budgets**; (7)

► SMEs need **just in time** learning; (4)

► SMEs need to maintain the continuity of the business, e-learning will allow to have learning with a **minimal disruption** to day to day operations; (3)

► E-learning will not require the absence from the working place; (3)

► E-learning will bring a quick fix to skills gaps or shortages; (3)

► SMEs expect impact on staff performance/bottom line; (2)

► E-learning will allow them to react quickly to changing situations; (2)

► E-learning is good for knowledge acquisition; (2)

► E-learning is more efficient than traditional learning: it allows to save time;

► Courses can be tailored to the specific needs of the company;

► E-learning allows to meet others online;

► E-learning is the way for a better and increased knowledge.

4.3.3.5 LANGUAGE ISSUE

According to Bernard Blandin *"it is now becoming evident that almost every behavioural or communication skill or thinking capacity is shaped by our culture and through our language"*[21].

The literature recognises that language is an issue in the current e-learning offer: above 70% of the contents provided are available in English. The e-learning solution providers are aware of that need, and their solution will usually support several languages, yet, there is a lack of courses available in some languages, as Dutch or Swedish. Most computer documentation and trainings are available in English, where it does not seem to be an issue.

But, as one of our case studies stated with later approval of the experts in the workshop, the problem is not translation, the problem is **localisation**: it is not enough to translate the contents of the course, the examples and exercises need to be adapted to the culture and environment of the worker. Therefore, some solution providers provide the authoring tools that allow an easy customisation of the course contents to specific needs.

4.3.3.6 E-LEARNING TOPICS

When asked which course topics are well adapted for e-learning, the providers make an extensive list. The subjects that are regularly mentioned are:

- ► Technical skills; (9)
- ► Management skills; (5)
- ► Accounting; (5)
- ► Languages. (4)
- ► Logistics (4)

Yet, providers stress that it is not the topic but the objectives that determine whether the subject is fit for e-learning or not: if you want interaction between the students, if you want hands-on sessions, if you want to share the "silent knowledge", e-learning will not be the best delivery channel. The length of the course can also be a handicap: the attention of the learner will not remain focused on a screen for hours.

Another remark is about the coverage of the subject: e-learning will be the best solution to introduce some parts of the subject, but not all. Today, the

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[21] Blandin B. (2003). *Localization of software and learning material for SMEs: how is it possible?*
http://www.theknownet.com/ict_smes_seminars/papers/Blandin.html

trend is "**blended learning**" tracks, where the delivery channels are mixed: e-learning, practical hands–on sessions, books, links to documents and sites, traditional instructor-led trainings, etc.

The audience will also settle some of the constraints: its initial knowledge, its learning objectives, its computer literacy will determine what can be done in e-learning.

4.3.3.7   SOURCES OF CONTENT

Providers estimate that SMEs use mainly **off-the shelf contents**, since the development of e-learning content is expensive and SMEs do not have the critical mass to have the return on investment.

4.3.3.8   PROBLEMS EXPERIENCED WITH LEARNING

Here again, the answers from the providers are very consistent. Problems met are **mainly of a technical nature**:

► SMEs do not have the right infrastructure; (8)

► SMEs experience some technical problems, e.g. virtual classrooms are not always steady; (5)

► SMEs have a problem with the budget needed for e-learning; (3)

► SME workers do lack the computer literacy; (2)

► The speed of the on-line connection can be an issue; (2)

► SMEs do not have access to support/tutoring.

4.3.3.9   A NEW WORKING ENVIRONMENT

Some questions got very few answers from the providers. They do not know how the SMEs promote the introduction of e-learning, whether it is integrated into the working environment and working processes, whether it is introduced together with more global strategies as knowledge or competence management or teleworking, nor how SMEs calculate the return on investment.

But they do have their own opinion on what **is necessary for a successful introduction of e-learning**:

▶ The **involvement of the top management**, who must support learning; (7)

▶ **Induction sessions** to present the new way of working; (2)

▶ **Promotion** and marketing of the initiative; (2)

▶ **Change management** programs;

▶ Tutor **support**.

4.3.3.10 PROVIDERS' RECOMMENDATIONS

When asked what could help SMEs adopt e-learning solutions, the providers made the following recommendations:

▶ **Increase the awareness** of the availability, the cost and learning effectiveness of the e-learning tools; (3)

▶ Advertise on **good practices** and benchmarking information; (3)

▶ Provide **funds** targeted at specific sectors that have been identified for development; (2)

▶ Give access to good **quality, relevant, practical** courses; (2)

▶ Induce a shift in **culture** in the SMEs to recognise the importance of an "educated workforce" on business performance;

▶ Give access to **resources** to plan, implement, and launch a solution successfully;

▶ Increase the integration of **formal and informal** learning, implying new methods and systems for competence recognition;

▶ Teach trainers and students how to e-learn;

▶ Encourage big companies to resell their e-learning courses to the SMEs;

▶ Bring a quick return on investment;

▶ Provide high speed connectivity;

▶ Cut the costs of e-learning.

4.3.4 FEEDBACK FROM SMES

The survey on the Internet provided some input from the SMEs: a more detailed presentation of their answers can be found in Appendix D.

The number of answers was limited (575) and the distribution in the European countries and sectors of activities was not even: the input came mainly from the services, IT, R&D and manufacturing sectors. As the survey was on the Internet, all the respondents had access to the Internet. The answers came mainly from the management of the SMEs. For all these reasons, the **information presented below can be used as an indicator**, but not as statistical evidence.

A list of quantitative questions was proposed, where the SME worker had to give a ranking for both the traditional and the e-learning courses:

- ► 1 excellent;
- ► 2 good;
- ► 3 average;
- ► 4 below average;
- ► 5 poor.

The closer the average score is to 1, the better the result.

4.3.4.1 TOP SCORES OF TRADITIONAL LEARNING

	Traditional Score	E-learning Score
Trainings are an opportunity to develop a network of new acquaintances	2.4	3.8
Networking enables us to request together trainings that meet our needs	2.7	3.1
Topics available do cover the training needs of my company	2.7	3.5
Guidance is available to help me find my way in the training offer	2.8	3.4
Topics developed are well covered, from basic to expert level (Completeness)	2.9	3.6

We have taken here all the elements that were rated up to 3 (average). The elements that SMEs do appreciate in a **classroom-based course** are the **social aspects**: you can create a network, and this network has a positive impact on the cost of your trainings.
They are also satisfied with the training offer and can find their way easily in that offer. They have the feeling that **the offer covers the required levels of expertise**.

4.3.4.2 TOP SCORES OF E-LEARNING

	Traditional Score	E-learning Score
Training is available when needed (Timeliness)	3.9	2.6
Training is tailored to the needs of the learner (own rhythm, no judgment)	3.7	2.8

Only 2 statements get a rating "above average" for e-learning: the timeliness of the training and the ability to follow the course at one's own speed.

4.3.4.3 WORST SCORES OF E-LEARNING

	Traditional Score	E-learning Score
Training is available in a language understandable to all staff	3.3	4
Trainings are an opportunity to develop a network of new acquaintances	2.4	3.8
Topics developed are well covered, from basic to expert level (Completeness)	2.9	3.6
The training infrastructure is available	3.5	3.6
Topics available do cover the training needs of my company	2.7	3.5
Training certificates are available at the end of the course	3.1	3.5
Guidance is available to help me find my way in the training offer	2.8	3.4
Training courses react to the input of the learner (interactivity)	3.1	3.4
Effective user/learner support is available when needed	3.1	3.4
The quality of the learning process is continuously improving	3.4	3.4

Language is an issue, not all people have the skills to follow a training in a non-native language. The image of the lonely learner behind his screen is also one of the frequent comments in the free-text fields.

E-learning is often used as an introductory course, but it does not provide the **practical** sessions that bring the experience. The infrastructure can be an important investment.

SMEs do not seem to find the **topics** they want in the e-learning offer and the recognition of courses taken on the Internet still is low. Users need help to find their way in the offer, as well as during the training. The **quality** of the courses is not yet demonstrated.

The overall impression we get from these scores is that the e-learning offer does not meet the need of SMEs, but such a statement could be too quick. Do the SME owners know the e-learning offer? Do they know how to use it? The real need of SMEs might be support to discover the existing offer.

4.3.4.4 WHERE E-LEARNING BEATS TRADITIONAL LEARNING

	Traditional Score	E-learning Score
Training is available when needed (Timeliness)	3.9	2.6
Training is tailored to the needs of the learner (own rhythm, no judgment)	3.7	2.8
Training courses are efficient (shorter time needed to learn)	3.4	3.1
Training/training materials is/are available on the job (Support function)	3.4	3.1
Training costs are reasonable (affordable)	3.4	3.1

E-learning has a better image than traditional training from **a time management** aspect: timeliness, own rhythm, shorter time needed. The fact that the training materials are **available "on the job"** is also appreciated. e-learning is viewed as a cheaper solution than traditional learning, which might not always prove true.

4.3.4.5 INCENTIVES FOR THE COMPANY

SMEs could select several incentives from a list in the survey: almost all selected the first ones:

► Improved work process in the company;

► Cost reduction in training;

► Just-In time training;

► Easy sharing of information with the company network.

67 % state that:

► E-learning improves collaboration amongst employees;

► The training offer is attractive.

4.3.4.6 INCENTIVES FOR THE EMPLOYEES

Most of the respondents were directors or managers, hence the information below represents the benefits for the employees from the point-of-view of the management. Again, respondents could select as many answers as they wished.

All of them selected:

- ► Information available on the job;
- ► Tool kit to better do my job.

Employability, certifications and virtual communities are other important incentives for the employees.

4.3.5 CONCLUSIONS

As a conclusion of all the inputs we could gather from the desk research, from the internet survey, from the solution providers, from the case studies and from the final workshop, here is the list of the major needs we identified for SMEs.

4.3.5.1 TIMELINESS

SMEs devote little time to the learning activity: they are often guided by the daily pressure of the business, and a need for training will only be identified when a problem arises: therefore, SMEs will look for a quick fix, allowing to proceed with the business: they need just in time, bite-sized, to the point learning.

4.3.5.2 INFORMAL/COLLABORATIVE LEARNING

SMEs have specific constraints: a same person has several responsibilities, most workers have little time and will look for only what they need, they will need it as soon as possible and very specific to their needs. No standard training will match 100% of the needs of individuals from SMEs.

Most of the learning in an SME is informal, i.e. it often takes place on the job, through a "sharing of knowledge" rather than in a "training".

When confronted with a need, the SME worker will usually contact his network of reference people whom he trusts. He will look for an expert in the subject matter who will answer his specific questions.

4.3.5.3 NEEDS IDENTIFICATION

"*Research by the DELOS project (Developing Learning Organisation models in SME clusters) into organisational learning in SMEs shows that most SMEs can be described as 'crisis-driven' with little evidence of organisational learning. Information gathering practices, knowledge acquisition strategies and competence development appear to be either absent or rudimentary, and the enterprise typically responds to challenges and opportunities rather than pursues an active policy of human resource development and strategic management. The evidence suggests that this type of firm constitutes the largest category of SMEs*"[22].

Most SMEs do not have a training responsible, nor a Human Resource Department aligning the skills of the employees to the strategic objectives of the enterprise. SMEs are often not aware of the development needs of their employees. Before SME owners can talk of development needs, they might need help to identify where they want to be, and where they are today.

E-learning providers that meet some success will usually provide services to identify the needs at the level of the company and of the individual and explore with them the different learning options that are available on the market. This first step in the learning process usually takes place in a 2-hours face-to-face meeting: the proximity of the service provider and his good understanding of the local language are a must to support the definition of the needs.

4.3.5.4 GUIDANCE IN THE LEARNING OFFER

Once the skills development needs have been identified, the potential learning solutions must be analysed and a training scenario has to be set up.

The existing e-learning offer is perceived as abundant, with little information on its adequacy and effectiveness. SMEs want support to help them find what learning opportunity will best match their business and development needs.

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[22] Reich, K. & Scheuermann, F. (2003) *E-Learning Challenges in Austrian SME's*. http://futurestudies.org/down/cooperation_collaboration_sme.pdf

4.3.5.5 QUICK ASSESSMENT TOOLS

One of the perceived advantages of e-learning is the steadiness of its quality: it will be the same wherever it is delivered, independently of the mood of the instructor or the time he had to prepare his course. Yet, determining the quality of an e-learning course is one of the difficulties. Books are perceived as easier to assess: you can open a book, have a quick look through it and decide on the value of its contents. How can an SME owner make a quick assessment of an e-learning course? How can he evaluate the depth in which subjects are handled, the adequacy for his own environment?

Easy access to figures and benchmarking information, quick assessment tools, as well as clear standards would provide SMEs with objective decision criteria.

4.3.5.6 AWARENESS RAISING

SMEs are not well aware of what e-learning is. They will not be interested in e-learning as such, as it is only one of the means to deliver knowledge. They need to understand what the development of the skills of their workers could bring to them and where e-learning fits in the picture.

Information should be very practical, give the indications where SME owners will find guidance for the assessment of the skills of their employees, for the definition of the development needs, for the learning options that will best meet these needs.

"*The individual motivation of managers emerges as one of the major factors driving the adoption or otherwise of e-learning. Even with suitable learning materials, unless the business organisation supports the integration of e-learning, take-up will be limited. […] The attitude of individual managers emerged as the single most decisive factor in influencing the development of ICT for learning in SMEs, yet there seemed little support for individual SME managers or for SMEs in introducing e-learning.*"[23].

Today, SME owners are not convinced of the effectiveness of e-learning, whereas they still trust that employees will get some benefits from classroom-based trainings. An awareness raising campaign will only be effective when there is a practical, user-friendly, easy to use offer behind it.

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[23] Attwell, G. (2003) *The Challenges of e-learning in small enterprises. Issues for policy and practice in Europe*. Cedefop Panorama Series, 82. Luxemburg, Office for the Official Publications of the European Communities. http://www.theknownet.com/sme-learning/vet_ict_papers/ictsmes_report.html

4.3.5.7 CONTENTS

When analysing the subjects that should be covered by e-learning, all the sources agree that the most important subject is the core business of the enterprise, "everyday business". The current training offer is often evaluated as "too horizontal", bringing the overall management and administration guidelines but not conveying the expertise workers need to do their job. SMEs do not have the critical mass to develop e-learning courses or have them developed for their sole use. They clearly need to be part of a larger learning community they can trust. Yet, SMEs are afraid to share knowledge and give away their business secrets: in some cultures, they will not share industry specific information.

Besides the core business, the skills that need to be developed in SMEs are the ones that will bring them the ability to survive in the market. Therefore, the learning offer should also cover general skills, as management skills, accounting, office tools, language skills, etc.

4.3.5.8 CUSTOMISATION OF COURSE

SMEs need courses that respond to their specific needs. Several options could be explored for the customisation of course content. User-friendly authoring tools would enable the SMEs to tailor existing courses for their own environment.

4.3.5.9 INFORMATION NETWORK

First of all, the information needs to be shared within the enterprise: SMEs often do not have documented procedures. They need to be aware of the importance of managing and sharing the knowledge and culture inside the company e.g. via an intranet.

4.3.5.10 SUSTAINABLE SOLUTIONS

As we can see from Gartner's study on the purchasing behaviour of SMEs, they require solutions that will work in time and will preferably work with long established relationships.

4.3.5.11 INFRASTRUCTURE

Though a lot of effort has been done in the provision of infrastructure, all SMEs do not have the necessary infrastructure for e-learning and broadband connectivity is still mentioned in most sources as one of the major hurdles.

4.3.5.12 USER-FRIENDLY INSTRUMENTS

The learning tools should be easy to install and nice to use. SMEs do not have the time nor the resources to solve technical problems or learn sophisticated users' notices. Installation and operations of the e-learning solutions should be simple and quick.

4.3.5.13 ACCESS TO MATTER EXPERTS AND SUPPORT

A web course with no human interaction is a course where you have no opportunity to ask questions. Traditional learning has a considerable social aspect, which needs to be reproduced in a web-based environment. Students must have access to an expert who can answer their questions. The credibility of the expert needs to be established. Some e-learning projects start with a "kick off" meeting, where students and tutors meet and get to know each other.

Students should also have access to help when they experience technical problems: "*Technology problems and glitches are frustrating to the learner when they happen*"[24].

As an important characteristic of e-learning is the flexibility of the learning schedule, support must cover extensive time frames[25].

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[24] Schooley C. (2001). *Justifying IT Investments: Training and Learning.*

[25] Abdelli Z. (2003). *Formation En Ligne Et PME Québécoises - Occasions Et Perspectives.* Québec: La Direction du Développement des Entreprises et des Affaires.
http://www.mic.gouv.qc.ca/formation/occasions_perspectives.html

4.3.5.14 COST OF LEARNING

Learning is a cost, and the SME owner does not always consider it as an investment for the future. Depending on the size and turnover of the organisation, learning could easily become an activity that is out of reach: the enterprise needs to pay both the salary of an "improductive worker" and the price of the training.

Education is a cost that is usually taken up by society. Not all SMEs do consider that the development of the skills of their employees is part of their mission.

4.3.5.15 INDIVIDUAL FOLLOW UP

E-learning requires more self-discipline than traditional classroom-based trainings. There is a risk to increase the skills gap between individuals: some could give up learning whereas others could become learning geeks.

An early education of the lifelong learner and an individual follow up should prevent the risk of having too high a "drop out" rate.

4.3.5.16 KNOWLEDGE OF RETURN ON INVESTMENT (ROI)

An enterprise should constantly evaluate how learning programs can help it achieve its business goals. The main objective of an SME when purchasing IT software or services is to improve the performance of its staff, hence have a better bottom line.

Today, there is no "rule of thumb" to calculate the effective ROI of e-learning, and experts have different opinions on the cost of e-learning.

4.3.5.17 COMPUTER LITERACY

All SMEs are not using computers, some of their employees have never worked with a computer before. As the study on "e-learning Readiness" by the Economist Intelligent Unit[26] shows, all countries are not equal in front of

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[26] The Economist Intelligence Unit (2003). *The 2003 e-learning readiness rankings - A white paper.*

e-learning: English speakers and Scandinavian countries are well prepared, and closely followed by Western European countries. The new joiners of the European Union will still need to invest in the infrastructure, the capabilities, the content and the culture, which are defined as the 4 main criteria for the measurement of e-learning readiness.

4.3.5.18 BROKERAGE

"*SMEs are often unable to articulate and scope their learning needs. There are difficulties in assessing the merit and value of available programmes and learning materials, which are often perceived as failing to meet firm-specific needs. Finding appropriate training is also made more difficult by a culture clash with external training providers, especially in the public sector, who are seen as unable to understand business processes.*"[27]

Between the e-learning providers and the SMEs, there is no dialogue: on one side, the providers say SMEs do not understand the advantages of e-learning, on the other side, SMEs believe e-learning does not meet their needs. A brokerage could support a better dialogue between providers and users.

[27] Reich, K. & Scheuermann, F. (2003) *E-Learning Challenges in Austrian SME's*.
http://futurestudies.org/down/cooperation_collaboration_sme.pdf

5   POLICIES ON E-LEARNING AND SMEs

5.1   INTRODUCTION

After having considered the characteristics of SMEs that (may) affect (e-)learning for CVT and analysed their related needs, it is essential to see whether existing policies support sufficiently these needs and characteristics. A distinction is made between the European level and the national/regional levels. European policies, i.e. policies of the EC in relation to the member states initiatives, are analysed on their priorities as well as on the "translation" of these priorities into policy schemes, guidelines and actions (mainly through programmes and projects). The national/regional level is considered via the individual member states, whereby a distinction is made between pioneering countries – often the most advanced ones on policy development and implementation – and the others.

5.2   EUROPEAN PRIORITIES IN CVT

The importance of vocational education and training in the EU has been stressed in documents produced by the EC. According to Anne West in her study on Indicators for vocational education and training[28] **two overarching priorities** run through the various policy documents:

> ► Contribution to the construction of a Europe of knowledge – the development of knowledge, citizenship and competences;

> ► Support for employment policies – encouraging entrepreneurship, promoting the capacity for a successful transition into the labour market (employability), promoting the capacity for adaptation (adaptability) and reinforcing equal opportunities;

Within these two overarching areas, it is possible to operationalise **nine more specific priorities** (and associated domains) at EU level;

> ► Improving lifelong access to education and training for all citizens ('lifelong learning');

> ► Encouraging the acquisition of qualifications and competences that promote adaptability ('adaptability');

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[28] West A. & Hind A. (2000). *Indicators for vocational education and training: exploitation of the ECHP*. CEDEFOP. http://www2.trainingvillage.gr/download/statistique/echp/index.html

► Encouraging the acquisition of qualifications and competences that promote innovation ('innovation');

► Promoting the development of linguistic competences ('linguistic competences');

► Promoting mobility ('mobility');

► Promoting investment in training ('investment in training');

► Supporting the transition of young people into work ('transition to work');

► Reducing social exclusion ('reduce social exclusion');

► Improving the quality of training ('quality of training').

It should be expected that these priorities are reflected in policy schemes for CVT in general and CVT that addresses SMEs in particular.

5.3   CVT POLICY SCHEMES

In the European Observatory report[29], an overview is given of different policy schemes directed at fostering CVT activities -not specifically e-learning- amongst SMEs. The data used for this overview seem to come mainly from a study made by the EC on CVT in Europe of 1997[30]. One could expect that the policies have in the meantime been adapted and that elements of e-learning have been included.

In the overview of the different policy schemes, it is clear that SMEs are in all member states on the top of the political agenda and that there is a trend towards regionalisation and decentralisation. E-**learning is hardly ever mentioned specifically**.

The report also stresses that the EU, according to Article 127 of the Union Treaty, should limit its activities to supporting the national policies of the Member States. The text explicitly states that the intervention of the

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[29] European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp. 314 and pp. 420-428). Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

[30] A comprehensive review of the existing national systems of CVT within the different EU Member States can be found in: European Commission (1997). *Continuing Vocational Training: Europe, Japan and the United States of America*. Luxembourg. Mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp. 315). Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

Community in no way foresees the harmonisation of the legislative and regulatory provisions of Member States, whose responsibility in respect of the content of programmes and organisation of training is confirmed.

On the **European** level the following **actions** have been taken:

► In 1994, the **Leonardo Da Vinci programme** was launched for a period of five years, but it has evolved into the umbrella programme relating to EU training policy, with the explicit objective to support the development of policies and innovative actions in the Member States. One of its 5 strategic priorities is the "use of information technology to build the learning society"

Following this initial phase, the Leonardo Da Vinci vocational training programme is now in its second phase, covering the seven-year period from 2000 to 2006[31]. The programme actively supports the lifelong training policies conducted by the Member States. It promotes transnational projects based on co-operation between the various players in vocational training - training bodies, vocational schools, universities, businesses, chambers of commerce, etc. - in an effort to increase mobility, to foster innovation and to improve the quality of training;

► The **CEDEFOP agency** is aimed at the development of CVT, primarily through research activities;

► In 1999, the **Business Education Network** in Europe (BENE) was set up as an Europe-wide network of educational organisations and networks involved in training of entrepreneurship or entrepreneurs (cf. infra, projects EC).

From a national perspective, the different European countries are developing different policy strategies to foster CVT activities. The report does not mention any specific measures for e-learning activities.

In some countries, such as France and Norway, SMEs have the legal obligation to take part in CVT activities. In Ireland and Belgium[32], a grant aid is given, in the Netherlands support is provided through tax relief. Other countries, such as Portugal, have set up a network of institutions to set up CVT activities.

The general conclusion of the report is that "there is still much room for improvement in the public action domain. SMEs attach little value to the existing public support for CVT, a result that might explain their scarce use of public schemes."

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[31] http://europa.eu.int/comm/education/programmes/leonardo/leonardo_en.html

[32] At present, employers get a bonus for every training they offer to their employees. The system differentiates between employees over 45 years old and younger employees. Cf. http://www.cefora.be/code/nl/template_03.asp?id=168

A pan-European study made in 1997[33] carried out in 11 countries suggests that only three out of ten European SMEs active in CVT have benefited from public aid in this area. The valuation of the existing public programmes was rather low (37,4/100), and even lower as the enterprises became smaller.

The **European Observatory** report[34] also lists up some important elements that have to be taken into account in a SME-oriented training policy, irrespective of the existing differences in the legal and cultural frameworks of the EU countries. One of these elements is that public authorities should support the full exploitation of the possibilities opened up by the Information and Communication Technology for training purposes. The focus is however still general: on the improvement of the existing ICT infrastructures, the upgrading of the computer skills of the population and the lowering of equipment costs for schools.

5.4   EUROPEAN GUIDELINES AND POLICY REPORTS

SMEs are in all member states a priority. However, when consulting the European guidelines and policies, the general feeling is that training and e-learning in SMEs are largely left out of policies.

In EU policies with respect to training, e-learning only gets limited attention. Whenever training is mentioned, the focus is on upgrading the ICT skills of employees in companies and on training in ICT for the unemployed in order to widen their options on the market. The major preoccupation is to improve the digital skills of the workforce and to get companies on the digital track, so that they can compete with companies in the US or Japan.

There is no consistency in policies of various member states with respect to CVT, because of the different legal and cultural frameworks.

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[33] IKEI and ENSR (1997). *Training Processes in SMEs: Practices, Problems and Requirements, project funded by the Leonardo Programme*. Donostia-San Sebastian. Mentioned in European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp.317). Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

[34] European Commission (2000). *The European Observatory for SMEs - Sixth report, 2000* (pp. 317-319). Luxembourg: Office for Official Publications of the European Communities.
http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/ensr_6th_report_en.pdf

The following **documents** were a. o. consulted:

► The impact of the e-economy on European enterprises: economic analysis and policy implications[35], 2001;

► Strategies for Jobs in the Information Society[36], 2000;

► "Benchmarking Report following-up the "Strategies for jobs in the Information Society" (the follow-up report, 2001)[37].

At the Feira European Council in June 2002, The EU Member States endorsed the eEurope 2002 Action Plan, in which the third objective is to "stimulate the use of the internet". This included an action "to encourage SMEs to 'Go Digital' through co-ordinated networking activities for the exchange of knowledge on best practices, e-commerce readiness and benchmarking; 'reference centres' could help SMEs to introduce e-commerce into their business strategies"[38]. In response to this Action Plan, the Commission has undertaken specific **GoDigital initiatives**. The overall GoDigital objective was "to encourage SMEs to 'Go Digital' through co-ordinated networking activities for the exchange of knowledge on best practice, e-commerce readiness and benchmarking 'reference centers' to help SMEs to introduce e-commerce into their business strategies". As part of the Go Digital initiative a specific "Go Digital Awareness Campaign" was launched with the following objectives:

► To identify still existing practical barriers faced by SMEs in e-business;

► To get feedback on the best strategies that will help SMEs overcome these obstacles;

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[35] Commission Of The European Communities (2001, November 29). *Communication from the Commission to the Council and the European Parliament: the impact of the e-economy on European enterprises: economic analysis and policy implications* (COM(2001) 711 final).
http://europa.eu.int/comm/enterprise/ict/policy/doc/com_2001_711_en.pdf

This European Employment Strategy includes guidelines to Member States on training for the-unemployed, lifelong learning, e-learning, skill bottlenecks, education and training for entrepreneurship, and digital literacy as part of workers' wider adaptability.

[36] Strategies for Jobs in the Information Society (COM(2000) 48 final). (2000, February 4).
http://europa.eu.int/scadplus/leg/en/cha/c11705d.htm

[37] Benchmarking Report following-up the "Strategies for jobs in the Information Society" (SEC(2001) 222). (2001, February 7). Mentioned in Commission Of The European Communities (2002, February 5). *eEurope Benchmarking Report* (COM(2002) 62 final). http://europa.eu.int/eur-lex/en/com/cnc/2002/com2002_0062en01.pdf

[38] Commission Of The European Communities (2001, March 13). *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. Helping SMEs to "Go Digital"* (COM (2001) 136 final). http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0136en01.pdf.

Other documents are provided on http://europa.eu.int/comm/enterprise/ict/policy/godigital.htm

> ► To liaise with regional and national e-business policy initiatives;
>
> ► To disseminate best practices and showcases to the SMEs on using e-business.

GoDigital was primarily **focused on eBusiness**, in other words, the objective was to encourage European SMEs to use the Internet for business. This initiative did not mention using the Internet for learning; its interest being not specifically on training or learning aspects. Training was mentioned however in action line 7, where a provision of a loan guarantee facility was foreseen for SMEs by the European Investment Fund in collaboration with the Member states and Directorate-General Enterprise, with the objective "to provide SMEs with loans for investment in ICT and intangible assets (hardware, software, training, and introduction of Internet and e-business practices). GoDigital also referred to the e-learning programme, targeting the education and training environments and the BEST programme for 2001, where a group of experts was established to define the industry requirements and to monitor the actions aimed at improving the availability of ICT skills.

The initiative finished at the end of 2003 and in the final report[39] the lessons learnt are summed up as follows:

> ► E-business is not a top priority for most SMEs;
>
> ► Networking is the most successful marketing strategy to reach SMEs;
>
> ► Awareness raising needs to be based on realistic targets and expectations;
>
> ► SMEs often lack appropriate information about e-business and ICT;
>
> ► Most SMEs remain sceptical about ICT and e-business;
>
> ► Training and managerial changes are key issues;
>
> ► Resources and costs matter for SMEs more than for large enterprises;
>
> ► E-business might not always be beneficial to SMEs;
>
> ► Many IT solutions are still too expensive or not trusted;
>
> ► Helping SMEs to "Go Digital" is still a policy change.

Following the Go Digital initiative is eSkills[40] that highlights the importance of e-learning as a tool for industry to acquire key ICT skills.

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[39] European Commission, Directorate-General for Entreprise Unit E-business and ICT industries and services. (2004, February). *The Go Digital Awareness Campaign 2001-2003: The main lessons to be learnt.* http://europa.eu.int/comm/enterprise/ict/studies/aw_camp_fin_rep.pdf

[40] Commission Of The European Communities. (2003, March 27). *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. Adapting e-business policies in a changing environment: the lessons of the Go Digital initiative and the*

As part of the challenge to improve understanding and workforce skills for e-business, one of the objectives is to enhance the e-business skills in SMEs.

Improving the e-skills of the general workforce is critical to the successful implementation of e-strategies in businesses. There are different paths to this goal, but in most cases a combination of different ways of learning (or "blended learning"), both formal and informal, will be the most effective, typically consisting of traditional trainings, self-learning and learning-on-the-job. Large firms often have established special IT training schemes for continuous training, either by organising their own programmes or by sending their employees to IT training provided by training organisations. Smaller firms often cannot provide such opportunities and have to rely on learning-on-the-job and self-learning activities of their employees. So e-learning techniques and applications, as a complement to traditional ways of learning, may be especially important to SMEs in managing the e-business skills requirements of their personnel.

Activities in this context are amongst others to increase awareness of the benefits that e-learning technologies can offer for SMEs employees; to provide incentives to SMEs to start using e-learning methods to train their employees.

In a recent document for the European Parliament[41], statistical data are given that show that progress on the use of ICT and e-business in SMEs has been made. The take up and use of the Internet has even exceeded expectations: over 90% of enterprises with more than 10 employees are using computers and almost 80% of them are connected to the Internet[42], which means that on this point there is no longer a major gap between SMEs and larger enterprises. As far as integration of ICT into business processes is concerned, SMEs are still lagging behind larger enterprises.

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challenges ahead (COM(2003)148 final).
http://europa.eu.int/comm/enterprise/ict/policy/doc/com_2003_148_en.pdf

[41] This is a follow-up document, published 27/03/2003 and can be found at:
http://wwwdb.europarl.eu.int/oeil/oeil_VieuwDNL.ProcedureView?lang=2&procid=4843

[42] This situation is different for the very small enterprises within the SME group, with less than 10 employees. In a recent study by Jo Pierson on the use of ICT in Flemish micro enterprises, figures are given for 2002:

Table 1:Internet connectivity of micro-enterprises (DTI, 2002)

Internet	SWE	DEU	AUS	ITA	USA	GBR	IRL	JPN	CAN	FRA
2002	75%	74%	59%	59%	56%	50%	45%	42%	38%	38%

This type of SME represents 93% of all enterprises in Europe and can therefore not be overlooked. His analysis, based on qualitative research amongst Flemish micro-enterprises in very different sectors also showed surprisingly that not all business (34%) even own a computer, despite the fact that it is generally perceived as being an indispensable business device. Cf. Pierson, J. (n.d.). *There is no business like small business: the use and meaning of ICT for micro-enterprises.* http://www.eLearningeuropa.info/extras/pdf/P108.pdf .

Through the Directorate-General Information Society and the **IST FP5** Programmes, the EC has launched several projects which involve directly hundreds of SMEs throughout Europe together with many 'catalysts': local or regional organisations that work with SMEs to facilitate the change process. In all these actions, the key objective is to enhance ICT skills in general, not to enhance training with the help of ICT. The main focus seems to be e-business or eventually e-business and eWork[43].

Also in the European Observatory's report "Competence development in SMEs" of 2003[44], the focus is not on e-learning, although in its conclusion the report does state:

"It seems to be important to expand the existing knowledge on the organisational learning issue in order to identify the organisational, productive, technological and social factors that facilitate/make this learning difficult amongst SMEs, as well as the practices and tools that are more convenient for SMEs. Special attention has to be paid to the possibilities introduced by the ICTs in this field. When these issues have clearly been identified, policy makers should design public policies, intended to promote investments in organisational learning, in SMEs. For this purpose, information exchange of existing 'good practices' could be fostered. Perhaps, public authorities should encourage co-operation both between the social agents (trade unions and employers) and amongst enterprises themselves (i.e. SMEs in well-established clusters) for partially overcoming the difficulties of promoting organisational learning on the firm level."

As in most consulted documents, the reference to e-learning is rather vague[45].

5.5 PROJECTS SUPPORTED BY THE EUROPEAN COMMISSION

The EC supports a number of projects that pay attention to learning and training and even to policy creation for SMEs in Europe. The most relevant ones are briefly presented here.

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[43] Cf. the report made in collaboration with the EC: *eWORK 2002 Status Report on New Ways to Work in the Knowledge Economy.* ftp://ftp.cordis.lu/pub/ist/docs/ka2/ework2002en.pdf

[44] European Commission Enterprise publications (2003). *Observatory of European SMEs Competence Development in SMEs, 2003/1*. Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/obs_eur_smes_2003-1.pdf

[45] This impression is confirmed by a report published by The KnowNet: "At policy level European programmes and national programmes such as Go Digital have emphasised the importance of the Internet and of digital technologies for SMEs for e-commerce and for Business-to-Business (B2B) applications but have paid only limited attention to the use of ICT for learning. What little research there is, points to very limited uptake of e-learning by SMEs". http://www.theknownet.com/smeLearning/vet_ict_papers/ictsmes_report.html, p. 3

The **PRELUDE** project[46], "Promoting European Local And Regional Sustainability In The Digital Economy", was an IST accompanying measure funded by the EC to boost regional and local innovation supported by information and communication technologies. The aim was to create a framework to favour policy making on a regional level, to help regional administrations develop policies regarding the implementation of the Information Society based on a clear strategy and measurable targets.

The project was engaged in the preparation of a Societal Learning Model[47] for cluster-based approach to regional RTD and innovation and drafting of Policy Guidelines. Furthermore a set of Thematic Guides in the key application areas of European Clusters of innovation (eGovernment, Open Source in Public Administration, eCommunities/eInclusion, eTransport and eLearning) was prepared. In this regard, a series of workshops and other events (policy forum meetings) has been organised to bring together regional experts in the field (programme managers, IT industry and researchers) in order to define the state of the art of the subject (dos and don'ts, broad goals and policy issues, possible solutions, etc).
The consolidated Societal Learning model along with the strategic guidelines and the thematic guides have been released in June 2004 and can be downloaded from the project website.

The PRELUDE project is now over, but activities are continued in a two-year exercise, called the PRELUDE CHALLENGE (start in January 2005).

Other projects touching the subject of SMEs and e-learning are the **SLIDE** project[48] (Elearning et Développement: Initiatives Locales Solides), run by the NYMPHEA organisation (New Youth Monitoring Program to Highlight European Abilities, a Non Profit International Association, supported by the EC) and the **ARIEL** project[49] (Analysing and Reporting on the implementation of Electronic Learning in Europe - E-learning for small and

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[46] http://www.prelude-portal.org/

[47] The points of departure in the elaboration of the Societal Learning model are the Digital Business EcoSystems and Regional Innovation Systems. The former refers to a business concept of an organisation as a living organism within a larger system of business ecology. The latter refers to systems that combine learning with upstream and downstream innovation capability and thereby warrant the designation of a Regional System for Innovation.

Cf. Nachira, F. (2002, September). *Towards a network of digital business ecosystems fostering the local development (discussion paper).*
http://www.europa.eu.int/information_society/topics/ebusiness/godigital/sme_research/doc/dbe_discussionpaper.pdf

In this discussion an analysis is made of the actual situation regarding SMEs and the use of ICT, and a model is presented: the business digital ecosystem. The focus is clearly on e-business.

[48] SLIDE eLearning et Développement: Initiatives Locales Solides. (n.d.).
http://europa.eu.int/comm/education/programmes/elearning/projects_2003/slide.pdf

[49] Ariel. (n.d.). http://europa.eu.int/comm/education/programmes/elearning/projects_2003/ariel.pdf

medium-sized enterprises), coordinated by the Institute for Work and Technology Science Centre North Rhine-Westphalia. This last project started up in January 2004.

On the e-learning portal site of the EC, some other interesting projects regarding the subject of SME and e-learning[50] are:

- ► **ICIS**[51] Integrated E-training and Recruiting Community for IT Professionals and IT, an IST project. The main aims of the project are to increase rapidity of development of HR in the ICT sector by 50% using this prototype online support system; to measure the added value as a result of these personal assessments, professional skills profiles, career development paths, and online training to support the whole cycle of HR development online through trial and validation in a real-life on-the-job situation. The project is implemented in three target countries: Italy, The Netherlands and Portugal, after evaluation of a trial pilot with a small group of users;

- ► **LECÒ**[52]: Testing ground for an open and on-line system for planners of interregional and international training activities for SMEs, a Leonardo Da Vinci project .The partners intend to identify the skills required by planner-providers of inter-regional/international training activities, and then pinpoint open and distance training opportunities for the acquisition of the key skills identified;

- ► **InTraServ**[53], Intelligent Training Service for Management Training in SMEs, an IST project with the objective to evaluate an innovative Web-based intelligent training solution for manager upgrading in real SME environments operating in different fields. In the beginning, all project partners focused on SME training needs and on the knowledge domain that is covered by the management training service. Then the learning material preparation and system customisation started, so that the product can be tailored to SME requirements;

- ► **COR MOBILE**[54]: Corporate e-learning via mobile communication, an IST project with the objective to develop an

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[50] http://www.eLearningeuropa.info/ . In the framework of the ARIEL project, a database of all e-learning projects in this field will be made.

[51] http://www.eidosis.com/icis/progetto/ and http://www.iciscommunity.com/

[52] http://leonardo.cec.eu.int/pdb/Detail_En_2000.cfm?Numero=120145&Annee=2000

[53] Introduction. (n.d.). http://www.crmpa.it/intraserv/introduction.htm and Intelligent Training Service for Management Training in SME (IST-2000-29377). (2003, March 20). http://www.elearningeuropa.info/index.php?page=doc&doc_id=4151&doclng=14&menuzone=1

[54] Corporate e-Learning via mobile communication. (2003, June 13). http://www.elearningeuropa.info/index.php?page=doc&doc_id=4099&doclng=14&menuzone=1

e-learning tool utilising the technology of mobile devices. The philosophy is that companies, with a very dispersed population of staff, need ways to deliver training quickly and in small batches, online with specific requirements. The logical step forward using the mobile communication to deliver training via mobile phone will exceed the current limits of e-learning solutions. The results of the project will place the SME proposers in the forefront of their industry;

► **CBLPET**[55] Proposal for the Development of On-the-Job Training in Petroleum Engineering for SMEs, an IST project. Its goal is the evaluation of the effectiveness, and the pedagogical, organisational, technical, training, business, and financial issues, associated with delivery of distance training to SMEs over the Internet, particularly within the petroleum engineering market;

► **VIP**[56] (Visually Interacting e-learning Platform) The VIP project, presented in the field of the Leonardo Da Vinci Programme, aims at offering managerial training to SME managers in order to increase their efficiency and competitiveness. The VIP project intends to develop a didactic technological platform for distance training sustainable for the economic viewpoint and able to offer a didactic methodology providing an efficient "visual" interaction among students/users and professors/tutors and students/users among themselves;

► **Elsa**[57]: e-learning Solution for Automotive SMEs, an IST project demonstrating the added value, for supply companies operating in the automotive sector, of the innovative e-learning and training portal ELSA. The project is based on the multilingual intranet-based platform named Virtual Learning Environment (VLE) developed by the ESPRIT TQM-online project. It offers training courses, course management functions, and a full suite of value-added services, supporting collaborative training sessions, online tutor guidance, and knowledge sharing;

► **Gambit**[58]: Guided Analysis of Small Business Managers' Needs with Benchmarking and Internet-based Training, an IST project to evaluate the effectiveness of the online training system, KnowledgeBuilder, in delivering appropriate on-the-job training for SME managers. To realise this, there will be an initial consultation phase, which includes input from 20 target end-users and an analysis of already existing market research. This allows a

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[55] http://www1.pet.hw.ac.uk/research/cblpet/

[56] http://www.forcom.it/vipproject/index.htm and Managerial Training to SME Managers. (2003, December 19). http://www.elearningeuropa.info/index.php?page=doc&doc_id=4582&doclng=14&menuzone=1

[57] E-Learning Solution for Automotive SMEs. (n.d.). http://www.know-2.org/index.cfm?PID=62&ProjID=29340&action1=display&action2=public and One-stop training shop for automotive SMEs(2003, December 16). http://istresults.cordis.lu/index.cfm/section/news/Tpl/article/BrowsingType/Long%20Feature/ID/59305

[58] http://www.mygambit.info/

rigorous examination of the needs of the SME market for management training and determines whether online training should be combined with other support. This also allows a comparison between online training and conventional training methods;

► **BENE**[59], Business Education Network in Europe, a network of educational organisations (171) involved in teaching for entrepreneurs, BENE is involved in an EU-project whose aim is to support small and medium sized enterprises in the field of education and training as well as to facilitate the exchange of information and good practices between training institutions. This network is supported by the EC, through the Enterprise Directorate-General (formerly Directorate-General XXIII "Enterprise Policy, Distributive Trades, Tourism and Social Economy").

5.6   THE EUROPEAN AGENCY CEDEFOP

CEDEFOP[60] (Centre Européen pour le Développement de la Formation Professionnelle) is the European agency that aims at helping policy-makers and practitioners of the EC, the Member States and social partner organisations across Europe with respect to vocational training policy. One of the main services of CEDEFOP is the **European Training Village** (ETV)[61] . It is an interactive website that is very rich in information, but also offers communication tools, web conferences, etc.

CEDEFOP also set up a **survey of the use of e-learning** in training and professional development in the European Union[62] in which the following is stated:

"Despite its central importance in government policy and significant interest in the scale of the actual and potential market, there is an acute shortage of quantitative information on the extent of e-learning in providing initial and continuing vocational education and training and on the rate at which it is growing.

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[59]http://www.bene-europe.org/

[60] http://www.cedefop.gr/

[61] http://www.trainingvillage.gr/

[62] CEDEFOP (2001). *E-learning and training in Europe, A survey into the use of e-learning in training and professional development in the European Union.* CEDEFOP Reference series; 26. Luxembourg: Office for Official Publications of the European Communities.
http://www2.trainingvillage.gr/download/publication/reference/3021/3021_en_short.pdf

Although some surveys have been carried out on the size of the market and its rate of growth, many of these are of questionable reliability since the size and representative nature of the sample on which they are based are invariably difficult to discern. Those not confined to a single country often focus on large multinational companies, especially US ones and particularly those in the information and communication technology (ICT) sector. While unquestionably of importance these are by no means the sole or possibly even the main source of demand or supply. They also tend to treat the European market as a single entity without drawing any distinction between different countries or different subject areas.

*This **lack of hard evidence** makes it difficult for governments, companies and other organisations to develop coherent and effective policies in this area. It makes it equally difficult for governments to assess the effectiveness of the measures introduced and the expenditure incurred and determine the action needed if the strategic objectives to encourage the spread of e-learning are to be achieved."*

The report also mentions the fact that information on the use of e-learning in CVT is hard to retrieve, the conclusions given in this report are based on a survey of companies and organisations throughout the EU (according to CEDEFOP, the survey is representative, although the study does not claim to be scientific). The starting point of the study was the recognition that, if meaningful results were to be obtained, it was important to differentiate between:

- ► Different countries and languages: E-learning suppliers have targeted first countries with English as a native language or with high levels of second language English speakers;

- ► Different vocational education and training systems in each country of the EU: these distinctive national features are likely to affect the development of e-learning in different countries, the way in which e-learning is incorporated into training, and the pace at which this happens;

- ► Different types of organisation: training providers of different kinds;

- ► Users and providers of training: the demand and supply sides of the market for e-learning. One of the most important findings of the study is that consumers or users are often both suppliers and providers simultaneously;

- ► Different subject areas: from training in ICT to other subject areas, such as language learning, etc;

- ► Current and capital spending: tension between investment in equipment and investment in content; the content of e-learning programmes tending to lag behind the capacity of hardware systems and the Internet to deliver.

In our search for policy documents of the EU member states, these elements also proved to be determinant.

Another CEDEFOP report[63] outlines the results of a **small research project**, jointly undertaken by CEDEFOP and the EC Directorate-General Education and Culture to identify key issues related to the development and use of e-learning to support learning in small and medium sized enterprises (SMEs).

The objectives of the project were to undertake a series of case studies (in the UK, Poland, Spain, Italy and Austria) on the development and use of e-learning to support learning in small enterprises in different countries and to identify good practices and issues in the development and implementation of models for the use of e-learning to support learning in small enterprises.

The issues explored in the case studies included:

- ► Models of learning and knowledge development in small enterprises;
- ► Problems and barriers in the use of e-learning in small enterprises;
- ► Support for learning and partnerships for e-learning applications in small enterprises.

It was hard to find clear patterns from the case studies and observations. What perhaps emerged most clearly is a somewhat chaotic picture. This could be ascribed to the limited sample size. However, the hypothesis was that this is a true picture of the state of the use of ICT for learning in SMEs in Europe and would be replicated by larger scale studies. The reason for such a chaotic picture lies in the failure of any organised, planned or coherent take up of e-learning by SMEs.

Several issues and questions for policy as arising out the report were identified. In resolving the issues, the need for far stronger links between research and policy development and implementation is clear. However, it is not possible to prescribe policy options for all situations. Policies will have to be worked out which take account of the different economies, sectors, cultures and histories of countries and regions in Europe.

Policy issues concerning e-learning infrastructures, networks and structures, and lifelong learning are listed here:

- ► E-learning infrastructures

There is an obvious need to ensure that all SMEs have access to broadband networks and modern technologies. A second policy issue is about the way to support the development of e-learning materials and the relationship between the private and public sector developers and providers. A similar policy issue is whether e-learning providers should be regulated and, if so,

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[63] Attwell, G. (2003). *The Challenges of e-learning in small enterprises. Issues for policy and practice in Europe*. Cedefop Panorama Series, 82. Luxemburg, Office for the Official Publications of the European Communities. http://www.theknownet.com/sme-learning/vet_ict_papers/ictsmes_report.html

by whom and whether the state and region should subsidise the costs of e-learning for SMEs? An important related question is the level of state and institutional support and prescription around the development and adherence to open source software and open standards.

►   Networks and structures

The development of an e-learning infrastructure requires frameworks and support structures to promote e-learning in SMEs. This raises the policy issue of who should provide support for SMEs and how they should be trained and funded? What organisations and agencies should be involved in supporting SMEs and what degree of regulation is necessary? Should these structures be sector based, based on national agencies or should they be focused on regional infrastructures? What degree of state and regional support is needed to bring together the different networks, institutions and interest groups involved in supporting e-learning in SMEs? What statutory rights do different actors have in the development, promotion and regulation of e-learning? What policy measures are required to support the development of learning regions?

►   Lifelong learning

Despite the recognition of the need for policies to support and develop lifelong learning in every European Member State, there remains a considerable number of outstanding policy issues.

The issue of how a culture of lifelong learning is developed and supported in SMEs remains open. Secondly, it is unclear whether present policy promotes access to continuing and lifelong learning a public right or a private good and what should be the balance and relationship between the public and private sectors for e-learning. This raises critical issues of funding for continuing learning and for e-learning.

The study also highlighted the considerable differences in access to learning and e-learning for different occupational and social groups. This raises the issue of how to prevent social exclusion from unequal access to e-learning infrastructures and learning opportunities.

There are clearly critical links between labour market and educational policies. At present, in many countries, policy formation in these two areas is separated. One question is how labour market policies can recognise, support and reward lifelong learning?

A final policy issue is posed by globalisation and the role of technology. How in Europe can we support cultural and linguistic diversity?

5.7   THE KNOWNET[64]

The KnowNet is a research organisation based in Wales that received funding from the EC, Directorate-General Education and Culture for managing two seminars on the use of ICT for learning in SMEs (it was in fact a joint initiative from the EC and CEDEFOP). The seminars were held in late 2002 and early 2003, bringing together researchers from nine European countries. All the outcomes of these seminars are made available on the website of the KnowNet. A summary of these **outcomes** can be found on the e-learning portal of the EC, some of the main elements are:

> ► The most decisive factor for SMEs to engage in ICT for learning is the attitude of individual managers. Managers tend to be very pragmatic in their wishes with regard to training (no scientifically based needs analysis) and are looking for very flexible training ('absolutely-last-minute' "to the point" training, not institutionally based);
>
> ► Managers have little support for introducing e-learning, there appears to be no natural point that they can turn to for help[65];
>
> ► SMEs want to save money and see e-learning unjustly as a cheap solution;
>
> ► There is a lack of multimedia contents. The learning materials that are available at the moment are restricted to technologies, training for managers or for language learning, targeted mainly at white-collar workers. Localisation of software and learning materials should also be looked upon further;
>
> ► There is no need for the increasingly technically sophisticated platforms developed by private sector e-learning enterprises that do not meet the needs of SMEs;
>
> ► Interoperability between learning systems should be enhanced, standards should be adopted in order to have a more efficient knowledge transfer and to enable the learner to create his own learning materials;
>
> ► More work is needed to define and analyse the training and learning needs of SMEs.

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[64] The website of the KnowNet is http://www.theknownet.com. The information in this paragraph is based on the executive summary given on the e-learning portal site:
http://ww.eLearningeuropa.info/doc.php?lng=8&id=4329&doclng=1

[65] "Learning infrastructures are not just about computers and networks. Learning infrastructures include the ability to assess training needs and to respond to those needs, to develop training plans and strategies for Human Resource Development. There is little evidence, apart from isolated knowledge rich companies, to suggest that SMEs are able to provide this kind of infrastructure (...) It seems unrealistic to expect that SMEs will themselves develop the necessary indigenous learning cultures and accompanying infrastructures. These responsibilities will have to be assumed by networks or regional or sectorial bodies (..)".
http://www.theknownet.com/smeLearning/vet_ict_papers/ictsmes_report.html, p. 4

According to the KnowNet seminars, the real **challenge** is to stop thinking within existing paradigms of learning and e-learning. The new paradigms were identified as such:

- ► Informal knowledge vs. formal knowledge: within SMEs tacit knowledge is the most powerful; e-learning has so far concentrated on formal learning;

- ► Individual learning vs. social learning: the social dimension is an important driver for learners;

- ► The sharing of existing knowledge and the creation of new knowledge are important for the development of SMEs, if e-resources are to be the medium for doing this, we need to develop new processes and solutions;

- ► Is e-learning, at this moment, of benefit to SMEs?

- ► How to persuade the employees themselves to use ICT for learning.

Possible solutions to these issues were also proposed:

- ► To promote a culture of learning;

- ► To mobilise SME managers;

- ► To focus on organisational development, including more support for SMEs;

- ► To support networks as a new developmental paradigm;

- ► To develop a differentiated approach (for different sectors, regions, etc);

- ► To recognise triggers for change (and when they are recognised to take immediate short term actions);

- ► Policies: a change in present funding policies to promote focused projects (work-based learning, informal learning, SMEs as providers of knowledge).

The KnowNet insists on the fact that further research is needed into how SME managers and employees use ICT within their everyday work. These findings should then be used as a basis for developing environments and opportunities for e-learning.

In Section 10 of the KnowNet reports, some issues and questions for policy are formulated. The report pleads for policies that will take into account the different economies, sectors, cultures and histories of countries and regions in Europe. The **following issues should be taken up**:

- ► All SMEs should have **access to broadband networks** and modem technologies. Furthermore they need access to quality advice on the implementation of new technologies.

- ► A second issue is the definition of how the **development of e-learning materials** should be financially supported and by whom.

> ► What should be the level of state and **institutional support** and prescription with regard to **open source software** and open standards?

5.8 THE EU MEMBER STATES

Looking for policy documents on e-learning for SMEs in the EU member states, proved to be a very cumbersome task. In a first phase, we searched the Internet for policy documents of governmental bodies in the European member states and candidate member states. A specific search on the Internet for policies, strategies or programmes on e-learning in SMEs in the European countries did not produce the desired result in the sense that such specific documents could practically not be found[66]. It was decided to broaden the perspective and to look for policies on lifelong learning, vocational training, policies for companies (SMEs in particular) and e learning policies in general in order to find guidelines about e-learning and SMEs. These documents could be found more easily, but we could find practically no references to e-learning specifically.

In a second phase, we contacted EuroPACE members and other organisations in the different countries to get more information on the local situation in each country. To the question whether they were aware of any policies regarding e-learning in SMEs, we got either no or a negative answer.

The fact that very little information could be found, is in itself an important outcome of our research. It could indicate that the disclosure of existing documents might be a problem, but our hypotheses is that these policy documents simply do not exist and that, in most countries, governmental bodies do not yet reflect upon policies specifically for e-learning in SMEs. Although we strongly believe this hypothesis to be trustworthy, we should however take into account the following factors:

> ► First of all, it is most likely that documents concerning e-learning policies and SMEs in the Member States are written in the local language and that any research in English is likely to meet with limited success. While in some countries a systematic effort is made to translate policy documents into English, as is the case for e.g. Finland, in most countries however, this is not the case;

> ► Furthermore, it would be wrong to assume that such documents are necessarily available on the Internet. For governments, it might be more efficient to send the documents to the SMEs via email or even to use printed documents;

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[66] This could indicate that for SMEs themselves it will be equally difficult to get access to this kind of information if they need to, which could be identified as a need.

> ► The level on which policies towards SMEs should be made, need not be exclusively governmental. Regional bodies and even organisations that represent SMEs within a society, might also be issuing policy guidelines;

> ► In all European countries, the structure of vocational training for SMEs is different.

Some of the member state countries, such as Finland, Estonia, Ireland or Denmark can be considered as pioneers in the field of e-learning and e-learning policies. In the following paragraphs we focus a bit more on these countries, since information on their policies or programmes is systematically made available in English, which is of course logical for Ireland but a lot less for Estonia, Finland and Denmark.

5.8.1 PIONEERS

5.8.1.1 ESTONIA[67]

Estonia has in a very short time caught up with advanced countries in terms of ICT infrastructure and in the use of ICT in society, with a very high level of internet users (47% of the population, according to a study that was made in 2003), all Estonian schools are connected to the internet, income tax declarations can be made electronically via Internet, even the government meetings have been changed to paperless sessions using a web-based document[68].

This innovative approach can also be observed in the field of education. In 2000, the non-profit organisation the Estonian Educational Forum (EEF) was founded and set out principles for the future development of Estonian education, that is, for the building-up of a learning society. This was later adopted officially as the basis of a development plan for Estonia's education system. The concept of a learning society in Estonia underlies the development of the Estonian education system over a ten-year period, with the aim of creating an egalitarian but innovative, "future-orientated" system

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[67] Estonica, Encyclopedia on Estonia: http://www.estonica.org

Other websites that were consulted: http://www.einst.ee

The Institute of Baltic Studies (IBS) (http://www.ibs.ee) is a private non-profit organisation of Estonian origin. Innovations in public information infrastructure, information and communications technologies mediated distance education are the main areas of its activities. On this website, there is a link to a full text database of Estonian law (http://seadus.ibs.ee), in the Estonian language.

[68] A more complete overview of the use of ICT is given on the website of the Estonian Embassy in the UK: http://www.estonia.gov.uk

of education, taking into account non-formal ways of learning, etc.[69] All Estonian schools are connected to the Internet, as a result of the state-rum "Tiger Leap" programme[70], implemented for the first time from 1997-1999. It has now evolved into a Tiger Leap Foundation with the overall objective to promote the educational system in Estonia with introduction of modern information and communication technology. The programme was first and foremost aimed at general education but it involves also basic and vocational education. In the description of the goals of this programme, it is clear that e-learning will be promoted:

►   To provide Estonian teachers with elementary computer skills and to guide them to use the opportunities offered by modern information technologies in teaching their subjects;

►   To support curriculum development with the assistance of an interactive learning environment promoting learning skills;

►   To encourages creation of original software on the Estonian language, culture, history and nature in accordance with the national curriculum.

An IT college was also created between the two largest universities and the ICT industry. E-government and e-democracy are very high on the priority list of the Estonian government and a lot has been achieved in a relatively short period of time.

5.8.1.2   IRELAND[71]

Ireland is clearly one of the pioneers in Europe concerning e-learning and SMEs. A report of the Chambers of Commerce in Ireland (CCI) from December 2002 states that one in eight Irish SMEs already use e-learning, despite cost and IT barriers, and calls for government action to increase access. In association with Skillnets, the Irish training networks programme, the CCI conducted a survey of over 800 companies. The results of this survey were published in a report "e-learning: Awareness and Usage in the Irish SME sector"[72] and indicate an increasing take up of e-learning

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[69] A full description can be found in the text "The formation of an autonomous system of education" that can be found on Estonica. This website was an initiative of the Estonian Institute, with the support of the Estonian government.

http://www.estonica.org/eng/lugu.html?kateg=42&menyy_id=798&alam=58&leht=1

[70] Tiger Leap Foundation: http://www.tiigrihype.ee/eng/sihtasutus/eesmargid.html

[71] One in eight Irish SMEs use eLearning, despite cost and IT barriers. (2001, November 7). http://www.chambersireland.ie/index.asp?docID=345

[72] The full survey results are accessible at http://www.chambersireland.ie/campus/Ireland/survey.html, at the time of writing this report this website was however inaccessible.

opportunities and high levels of satisfaction with e-learning products among SME users. However, lack of awareness (21%) about e-learning products and services is a barrier to increased use of this new technology.

Some of the key results:

- ► One in eight SMEs surveyed stated that they had used e-learning and a further 12% of companies stated that they would use e-learning in 2002;

- ► e-learning is used primarily for IT skills (55%). However, other skills areas met by e-learning in the SME sector include Business Planning (27%), Sales and Marketing (25%), Health and Safety (14%) and Team Building (14%);

- ► Over half the companies surveyed use CD-Rom based products. One in five companies use the internet to deliver training and 27% of companies use their office network to deliver courses;

- ► Current e-learning users buy primarily from professional institutes (24%) and retailers (18%);

- ► Over 80% of e-learning users are satisfied with the experience. Respondents cited e-learning's flexibility and effective delivery of information as key benefits;

- ► An interesting outcome of the survey was that 76% of e-learning products were purchased following word of mouth recommendations from staff or contacts in other companies.

In response to these results a "Chamber Campus", an e-learning information website targeted at Irish SMEs and their staff was launched. "The website explains the concept of e-learning, outlines how e-learning can be delivered to staff and offers advice on how to develop and implement a company e-learning strategy. A key element of the site is a comprehensive Product Review section, which assesses many well-known e-learning companies and their products. Chamber Campus is also of interest to policy-makers and organisations concerned with training. The site offers an overview of EU and Irish government policy in this field and makes recommendations to government on how to support SMEs that wish to avail of e-learning opportunities".

The recommendations include:

- ► Irish workers should be issued with Individual IT Learning Accounts to improve their ICT skills. Both classroom-based training and e-learning courses should be covered by the programme. In this way, the Government could ensure that all Irish workers have an adequate level of ICT skills;

- ► CCI proposes that state agencies utilise their buying power to reduce the cost of e-learning for Irish SMEs through brokerage. In addition, Enterprise Ireland and FAS should actively encourage Ireland's cohort of e-learning companies to join the registers of approved trainers held by both organisations and

inform clients that grants are available to pay for e-learning products and services;

► CCI recommends that Government initiates a follow up information campaign on the benefits of e-learning by establishing an e-learning road show to visit regional centres and promote the benefits of e-learning to SMEs;

► The newly-established National Training Advisory Committee, which will oversee the National Training Fund, must take a lead role in the development of an e-learning Action Plan for Irish SMEs. Funding for development partnerships between the SME sector, e-learning companies and third level institutions should be made available and successful pilot projects should be rolled out nationally;

► Ireland is the ideal location for the establishment of an independent e-learning Standards Association, charged with determining and measuring academic standards for e-learning companies. Locating such a body in Dublin, in the Digital Media District would improve Ireland's visibility overseas in this sector, add value to smaller Irish e-learning companies and further encourage Irish SMEs to invest in e-learning.

5.8.1.3   FINLAND[73]

It is well known that, internationally speaking, the Finnish information society development is of a high standard. In a survey conducted in 55 countries in 1997, Finland ranked second after the United States, measured by social, communicative and information technology parameters. According to the ministry of Education, the networks in educational establishments and the access of students to information networks are good in terms of international comparison, and the level of information technology equipment in homes is relatively well advanced. Finland is one of the top countries within public library networking and the Finnish university network is very advanced.

The Finnish ministry of Education issued a document called "Education, training and research in the Information Society, A national strategy for 2004". This strategy builds upon an earlier strategy of 1995, which drew up outlines for the information and communication policy for education, training and research into the 21st century.

"The strategy contained the opinions and proposals of the Expert Committee set up by the Ministry of Education on how the level of education and research can be raised by applying information technology, thus promoting

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[73] Ministry of Education – Finland (1999). *Education, training and research in the Information Society, A national strategy for 2000- 2004*. http://www.minedu.fi/julkaisut/information/englishU/

national competitiveness and employment, and how to promote the availability and use of information and to assess the needs and identify the means for giving citizens basic skills in using information and communication technologies. Moreover, the strategy presented measures to safeguard high-performance computing capacity in research, to improve the prerequisites for the production and utilisation of network-based multimedia in Finland, and to safeguard the development of information networks for education and research as a whole."

The aims of the strategy were implemented through the Information Society Programme (1995–1999) of the Ministry of Education and was targeted mainly at equipment acquisition and network building in educational establishments, universities, libraries and archives. Appropriations were also granted to strengthen education, training and research related to the information society. It is mentioned that this strategy was also supported by trade and industry.

In 1998 a new strategy was written[74] which outlined the following

"Finland is progressing towards a knowledge-based society. In the information society, knowledge forms the foundation for education and culture and constitutes the single most important production factor. Information and communications technology (ICT) significantly promotes interaction and exchange between individuals, business enterprises, and other organisations, the utilisation of information, and the provision of services and access to them."

The report seems to indicate that policies promoting e-learning in companies have not been taken up by the Finnish government, but that they have been left to the industry itself:

"It can be assumed that both urban life development and developments in trade and industry will continue of their own accord, whereas there will be a need for public goals to be set in social services and closer collaboration between the public and private sector."

The current strategy, outlining the goals for the new millennium, is very much in line with the former strategies:

"By the year 2004 Finland will be one of the leading knowledge and interaction societies. Success will be based on citizens' equal opportunities to study and develop their own knowledge and extensively utilise information resources and educational services. A high-quality, ethically and economically sustainable mode of operation in network-based teaching and research will have been established."

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[74] Quality of Life, Knowledge and Competitiveness. (1998). Finnish National Fund for Research and Development (Sitra) 211.

The new strategy can be resumed into the following points:

- ► The information society skills for all;
- ► The information society skills of educational staff;
- ► The knowledge of professionals in the information and content industries;
- ► The consolidation of virtual learning environments;
- ► The electronic publication, classification, and distribution of research information and teaching material;
- ► The strengthening of the structures of the information society.

An explicit reference to e-learning in SMEs could not be found, but is taken up in a holistic view on education in general, based on the concept of lifelong learning. This is a particularly interesting feature of the Finnish approach: e-learning is not seen not as a separate form of learning, but is integrated in the whole concept of lifelong learning.

"The development of information and communication technologies is rapidly changing occupational structures and job descriptions. At the same time, previously separate learning environments, the home, the school, and the workplace, are merging into lifelong learning that covers the entire life-span of people and various fields of life."

In order to realise this goal, opportunities will have to be created for continuous updating and development of knowledge and skills. What is needed is "a system safeguarding the continuous renewal of the professional competence of educational staff". The fact that the use of multimedia is promoted does not come as a surprise in the Finnish context:

"During the new strategy period research must focus on learning in both formal and informal environments which utilise the new media. Learning environments must be analysed as a whole, using factors such as lifelong learning. From point of view of a learner, the various learning environments are beginning to overlap. The home and various educational environments support one another through open and distance learning, while on-the-job learning requires increasing interaction between the workplace, current information resources and tutoring, and teaching material. Libraries and other public service units transmit information and serve as open learning environments.

Technology facilitates the establishment of new conditions for communal learning in local groups. Information and communication technologies also offer better tools for learning a variety of skills and knowledge and for integrating discipline-based learning and work practices. The joint impact of the home, school, the work environment and public environments on learning is the key to securing high-quality learning

Appropriate funding for this strategy will be foreseen. The funding of the overall budget of the information society projects will rise by approximately Euro 6,7 million[75]. The projects will by duly evaluated and monitored.

5.8.1.4 DENMARK

Today Denmark ranks among the world's leading IT nations. This position should not only be maintained, but also strengthened. The Danish Government's IT and Telecommunications Policy Action Plan for 2003, *"Using IT Wisely"*[76], makes a contribution to this development. It is the Government's goal that IT and Telecommunications policy contribute to creating growth in Danish business and industry, reforming the public sector and qualifying the Danes for the knowledge society.

As part of the Policy Action Plan the Danish government has launched in November 2003 an initiative to further the use and development of e-learning in lifelong learning in Denmark[77]. The Government has presented an initiative designed to spread e-learning among small and medium-sized enterprises and in the public sector. Today, e-learning is primarily for the benefit of major enterprises, whereas small and medium-sized enterprises and public authorities are still lagging behind in exploiting this potential. Focus of the initiatives is on SMEs as well as public institutions and how they may gain in competitiveness and competence development through the use of e-learning. The initiative has three parts.

Firstly, the Ministry of Science and Technology has made a report on the use of e-learning for vocational training. The overall message is that organisations will gain from using e-learning as a tool to increase competitiveness, primarily by taking advantage of the flexibility offered by e-learning. The individual will increase his value on the labour market. What is new about e-learning compared to traditional ways of training is that one may engage the course independently of time and space. The employee is not dependent on being at a certain place at a certain time. The interactive way of improving competencies enables the user to get direct and immediate response to different problems. Furthermore the learner can have a focused and individually composed course that is directed towards specific needs. Thus companies and institutions gain from using e-learning because it deals

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[75] The total budget can be found at http://www.minedu.fi/julkaisut/information/englishU/3/5.html

[76] The Danish Government (2003, October). *Using IT Wisely. IT and Telecommunications Policy Action Plan.* http://www.videnskabsministeriet.dk/cgi-bin/intranet/doc-show.cgi?doc_id=194470&leftmenu=PUBLIKATIONER

[77] This information was found on the e-learning portal site of the EC: http://www.eLearningeuropa.info/doc.php?lng=8&id=4764&doclng=1. The website of this Danish initiative, http://www.e-kompetencer.dk/, is only available in Danish.

with a central dilemma of on the one hand upgrading employees' knowledge and competencies and on the other hand having to do without the employee during the day.

Secondly, DKK 10 million has been allocated for a tendering pool in 2003-2004 to support projects that introduce and demonstrate the potential of e-learning when implemented successfully in SMEs and public institutions.

E-learning should be adopted in precisely those contexts where it offers the greatest advantages and where the quality and availability of skills development and supplementary training are improved. At the same time, the Government's focus on this area is in line with the EU's current activities in the area. The initiative will support and initiate concrete e-learning projects launched via public tendering for a variety of themes, all lending wide support to the current focus areas of the Government's policy, including:

►   Management and entrepreneurial support

This theme focuses on how e-learning can be used in management and entrepreneurial courses, thus leading to more efficient organisations and more entrepreneurs.

►   Professional and administrative development in the public sector

This theme focuses on ensuring that the public sector, via improved skills development using e-learning in professional and administrative areas, becomes a more desirable and competitive place to work.

►   IT strategic management in the public sector

The introduction of e-government presumes that all public managers understand the strategic possibilities offered by the use of IT. It is essential, therefore, that managers should have a strategic tool with flexibility to match the various institutions and tasks.

►   E-learning at the workplace

The theme extends across the public and private sectors and caters to the need for skills development and supplementary training via e-learning for those groups who are not able to leave their workplace for the purpose of supplementary training.

►   New forms of e-learning

Support is granted for projects that develop innovative solutions within e-learning with a view to later system export etc.

In selecting the different projects certain criteria were taken into consideration such as 'the project would not have been started as an e-learning project without money from the pool', 'the project must demonstrate the potential of e-learning', 'the project must relate to the five

e-learning themes', and 'the project must be innovative and integrate the working place in the competence development'

Following projects have been granted money from the e-learning pool[78]:

1. "Development of SMEs in the building sector"

2. "Project Knowledge sharing, a in-service training model"

3. "Administrative training in registering people and church book keeping"

4. "E-learning course concerning in-service training and further cooperation between teachers and social worker"

5. "E-learning and E-coaching in handling dangerous drugs"

6. "The roomie conversation in public case work"

7. "Development of e-learning for digitalising the buying processes in the state"

8. "The working place as a learning centre"

9. "New types of e-learning -Video based practical learning"

10. "Simulations in SMEs' competence development"

11. "E-learning for reading and spelling disabled employees"

Thirdly the site www.e-kompetencer.dk has been published to illustrate the wide range of possibilities open to organisations and individuals choosing to work with e-learning. On this website, visitors can try out different e-learning courses, they can also find information about organisations that already use e-learning and about the current availability of programmes and courses. Finally some examples of e-learning are given for inspiration and a report on competence development through e-learning can be downloaded. (The report is only available in Danish).

The point of the whole initiative is to open a discussion on the potential of e-learning. Many organisations already use e-learning, thus the idea of the initiative is to create a general awareness of the e-learning possibilities, on the current availability of programmes and courses and finally to give examples of the use of e-learning for inspiration. E-learning has the potential of meeting some of the core demands of the knowledge society by creating new ways for employees to upgrade their skills and competencies. Furthermore e-learning meets employees demand on job satisfaction and career development. The idea is through a coordinated contribution from

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[78] Information received from Mrs. Anna Damholt & Mrs. Lene Kristiansen, Ministeriet for Videnskab, Teknologi og Udvikling.

organisations, companies, educational institutions to open up a discussion on how the potential of e-learning is best released.

5.8.2   INITIATIVES IN OTHER COUNTRIES

Taking into account the obstacles that we experience when looking for policies in the European countries, the following information could be gathered about the situation in some other EU countries.

In **Belgium**[79], there is an e-learning initiative of Cevora/Cefora, an information centre of the ANPCB/CPNAE[80]. This organisation is aimed at approving the qualifications of the employees and is working closely together with professional organisations, unions and companies in order to provide trainings that answer the real needs of the companies in question. The Cevora/Cefora organisation is aware of the recent evolutions with respect to e-learning and the fact that there are still a lot of uncertainties that still prevent companies to take up e-learning in their training package. To help overcome these barriers, a starter's guide[81] has been created with a very hands-on approach, listing all the factors that need to be taken into account when you want to start with e-learning (cost, what do you need, accommodation, SWOT analysis, etc….) With the same objective a website has been set up (http://www.eLearning4u.be) in a collaboration between the most important actors on the Belgian labour market[82] Cevora/Cefora itself is organising an e-learning course in management (http://www.cevora.be/eLearning).

Scotland[83] has successful programmes for lifelong learning where incentives are given on both individual and company level: ILA (Individual

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[79] http://www.cefora.be/code/nl/template_03.asp?id=194

[80] These abbreviations stand for (in Dutch) ANPCB Aanvullend Nationaal Paritair Comité voor Bedienden, of Paritair Comité nr 218, (in French) CPNAE Commission Paritaire Nationale Auxiliaire pour Employés, ou Commission Paritaire n° 218.

[81] The starter guide was developed with European Funding through the Leonardo Da Vinci programme: http://www.cefora.be/module/module_news/images/pdf/startersgids.pdf. This starter's guide is available in Dutch and French.

[82] The following organisations were involved: Cevora (http://www.cevora.be), Fopas (http://www.fopas.be/fopas_nl/default.htm), Givi (http://www.givi.be), IPV (http://www.ipv.be/index_nl0.html), KMOnet (http://www.kmonet.be), Logos (http://www.logosinform.be/content/logos/1/index.html), The Reference (http://www.thereference.be), Unizo (http://www.unizo.be), VDAB (http://www.vdab.be) and Vibam (http://www.vibam.be) . The coordination of this project, called Trivisi, is taken up by the Belgisch Netwerk voor Open en Afstandsleren (http://www.be-odl.org).

[83] Scottish Executive (2003, February). *Life through learning – Learning Through Life. The lifelong learning strategy for Scotland*. http://www.scotland.gov.uk/library5/lifelong/llsm.pdf

learning account) and BLA (Business Learning Accounts). This is supported by the Scottish Executive funds.

It fits in the lifelong learning strategy for Scotland were the aim is to increase the number of people in learning and to improve the skills base, employability and enterprise of the people of Scotland. These goals will be achieved, amongst others, by

► Launching a new scheme of Individual Learning Accounts to widen participation in adult learning by increasing interest and wider uptake and encourage individuals to take ownership of their learning by investing in it. The new scheme called ILA Scotland[84] (Individual Learning Account) is available since summer 2004. The previous scheme was withdrawn in December 2001 following concerns about possible fraud and poor quality learning. However, lessons from the first scheme have been learnt and a number of measures and safeguards to ensure that this scheme is a success and that previous difficulties will not rise again in the future, were put in place.
Initially the new scheme will be offered to people on incomes of less than £15,000 per year. A universal scheme, focused initially on basic ICT skills and qualifications, will be rolled out from April 2005

► Seeking to ensure that public sector investment in e-learning is co-ordinated and takes account of complementary actions by convening on a regular basis an E-learning Public Sector Group.

► Piloting Business Learning Accounts as a key driver to stimulate learning and business growth in small businesses, providing them with the tools to link training needs with business growth and funding to match the businesses' own investment. The pilot BLA scheme is being developed in consultation with key stakeholders.

Finally, the KnowNet report[85] mentions several initiatives in other countries: "in **Italy** regional organisations were trying to stimulate the use of e-learning. In Birmingham, in the **UK**, the local government was promoting e-learning through an EU financed ADAPT project[86], in Tyrol, **Austria**, the Chamber of Trade has some involvement in promoting the use of ICT for learning[87]."

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[84] http://www.ltscotland.org.uk/connected/connected10/communities/newilas.asp

[85] http://www.theknownet.com/smeLearning/vet_ict_papers/ictsmes_report.html, p. 4

[86] The Birmingham case study showed that e-learning is most effective when it is integrated with e-commerce and with the use of digital media. If e-learning is integrated into the normal activities of a company, it becomes part of the culture of an organisation or enterprise

[87] One of the main conclusions of the case study about Tyrol was that in order to make e-learning for SMEs more efficient, the approach should be more cooperative. Because it is too expensive to develop solutions for individual SMEs, groups of SMEs have to be identified. SMEs have to develop new organisational structures for the

5.9 CONCLUSIONS

The present chapter had no ambition to present a fully exhaustive overview of all policies about e-learning for SMEs at European Level and in the different European countries, but it provides a good general idea of what is available.

The overview is mainly based on what is currently available online, as the other sources did not provide any information, and reflects the today practice.

The **organisation of CVT for SMEs is very different in every country**; support organisations for SMEs are differently structured and have different functions in different countries, regions or even sectors, etc. Finally there is also a very diverse spectrum in the approach towards e-learning in the different countries. E-learning can be embedded in the whole package of education as in countries such as Finland or Estonia. Or it can be supported by the Chambers of Commerce (e.g. Ireland), or in collaboration with Employment Agency (e.g. Flanders). A last example is Denmark where there is a specific action and structure to support e-learning.

Concerning a more prospective overview on what is needed or planned, and not yet on line, the experts workshop held in Brussels on 18 October 2004 has revealed the need for a more concrete **"one stop shop" approach** that is being analysed in the "future oriented scenario" (chapter 7).

This will of course require a further confirmation by visiting the involved stakeholders in the different member states, taking more in consideration the **diversity and specificity of local needs, including language barriers**.

Difficult, but needed at the same time is to **address two opposite business models:**

- ▶ A free and immediate one (internet based and informal); and

- ▶ A more structured, formal and certification based.

It is needed that several levels of intervention and incentives, at European level as well as at national and regional level, should pay considerably more attention to the issue of e-learning for SMEs.

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implementation of cooperative and collaborative forms of learning. New approaches are needed in terms of understanding the broad context of learning. Pedagogical approaches in Austrian SMEs are often inadequate and do not meet the needs of e-learning. There is also a lack of flexible learning solutions in SMEs. Furthermore, there is still much to be discovered about how people learn using different technologies, particularly in relation to interactivity, and how materials can be developed and structured to enable all learners to make effective use of them. Learning should not take place besides work but with and through work.

6   PEDAGOGICAL ISSUES

6.1   INTRODUCTION

In this chapter, pedagogical issues are only considered form the perspective of this study's subject: "e-learning in continuing vocational training, particularly at the workplace, with emphasis on SMEs".

The pedagogical issues at stake are overviewed and described through observations and findings that were found in literature and through own research.

A specific framework or model(s) for e-learning at large and for e-learning within the study's subject is missing in the actual pedagogical and instructional psychological research. Building bricks for such framework and model(s) can however be found and are being discussed.

The conclusion leads to the context in which recommendations can be situated.

6.2   PEDAGOGICAL ISSUES: ASPECTS OF CONSIDERATION

When going through the literature, a number of pedagogical issues can be found that affect directly or indirectly e-learning for SMEs. They can be grouped around the following topics:

> ► Motivation of learner;
> ► Learning needs identification;
> ► Own development or outsourcing;
> ► Selection of learning objectives;
> ► Congruence of learning objectives and contents with SME goals;
> ► Learning environment (e- or blended learning ?);
> ► Design and implementation of learning strategies and learning environment;
> ► "Situated" and social aspects of learning, workplace and work organisation;
> ► Evaluation of learning.

Observations that can be found in literature[88] and through own research[89] are gathered below per topic.

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[88] Documents that were used, apart from the references that were made to documents in other sections of this study are:

Attwell, G. (2004). *How can ICT support learning leading to knowledge development?* http://www.know-2.org/E_gatekeeper.cfm?FileID=801

Attwell, G. (2004). *E-Learning and Sustainability*. http://www.ossite.org/Members/GrahamAttwell/sustainibility/attach/sustainibility4.doc

Bonacin, R., Baranauskas, M.C.C. & Martinez Cecilia, R. (2003). Designing and Learning: Joining the Concepts in Work Practices. *Educational Technology & Society 6(1)*.

Brink, B., Munro, J. & Osborne, M. (2002). Online Learning Technology in an SME Work-Based Setting. *Educational Technology & Society 5(2)*. http://www.ifets.info/journals/5_2/brink.pdf

Collis, B. & Strijker, A. (2004). Technology and Human Issues in Reusing Learning Objects. *JIME, (4)*. http://www-jime.open.ac.uk/2004/4/collis-2004-4.pdf

Blandin, B., Beyou, C., Dembach, Y., Engelibert, J., Fage, C. & Voyeux, N. (2004). *e-Learning et Knowledge Management. Quelle convergence?* http://www.preau.ccip.fr/images/actu/ElearningKM_fffod.pdf

Fulantelli, G. & Allegra, M. (2003). Small Company Attitude Towards ICT Based Solutions: Some Key-elements to Improve It. *Educational Technology & Society 6(1)*. http://www.ifets.info/journals/6_1/fulantelli.pdf

Figueira, E. *Evaluating the Effectiveness of E-Learning Strategies for Small and Medium Enterprises*. http://www.theknownet.com/ict_smes_seminars/papers/Figueira.html

Husson, A.M., Scheffer, P., & Freyssinet, G. (2002). *Quel Modèle Qualité pour la e-Formation? Les Normes Qualité Existantes Répondent-elles au Besoin des Acteurs de la e-Formation?* http://www.preau.ccip.fr/images/etudes/etude_modele_qualite.pdf

Kelleher, M., Haldane, A. & Kruizinga, E. (Eds) (2004). *Researching Technology for Tomorrow's Learning: Insights from the European Community*. http://www.know-2.org/

Owen, M. (2000). Structure and Discourse in a telematic learning environment. *Educational Technology & Society 3(3)*. http://ifets.ieee.org/periodical/vol_3_2000/b04.pdf

Reich, K. & Scheuermann, F. (2003). *E-Learning Challenges in Austrian SME's*. http://futurestudies.org/down/cooperation_collaboration_sme.pdf

[89] EuroPACE (2004). *Onderzoek naar voor de Syntra bruikbare nieuwe leervormen*. Not published feasibility analysis on the use of e-learning for VIZO (Flemish Institute for Independent Entrepreneurship) about e-learning within the "Syntra", VIZO's training organisations.

6.2.1   MOTIVATION OF THE LEARNER

In most SMEs, and especially in micro-enterprises, there is **no learning culture**. Time devoted to training is considered by the employer as lost time, and neither the employer nor the employee think they need training to do their jobs. When training is provided or employees take the initiative to learn, no (systematic) motivational support is available, i.e. no concrete incentives are offered to raise and maintain the learners' motivation. When support measures are taken, they are usually restricted to the provision of time and support during working hours.

On the opposite, corporate learners are especially motivated by the relevance of the training, meaningful materials, responsive feedback, personal growth, flexibility of activities, a supportive learning community.

To get effective motivation, the **learner** should be **put in the centre of learning**: the starting point must be a question from the learner, he must be allowed to take up the role of co-actor with respect to decisions about essential elements of the training and training structure, as well as for the learning process itself (communication, collaboration, even co-instruction). To keep the learner motivated, modularisation of the learning is an essential element, as well as customisation of the materials.

6.2.2   LEARNING NEEDS IDENTIFICATION

SMEs **lack systematic learning needs analysis**[90]. Learning needs are mostly identified through practical experience. As a consequence, e-learning is often focused on, or even restricted to (basic) training in ICT skills[91], and/or only offered to those employees that have already the skills to work with learning technologies or are interested in ICT based or supported learning. Reasons for this phenomenon are probably linked to the already mentioned lack of long-term business strategies, but also to the unfamiliarity of SMEs with existing training offers. In combination with lack of concrete information on the situation of their competitors, this may create the misleading feeling (both of management and employees) that there is no need for training at all.

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[90] See e.g. European Commission Enterprise publications (2003). *Observatory of European SMEs Competence Development in SMEs, 2003/1*. Luxembourg: Office for Official Publications of the European Communities. http://europa.eu.int/comm/enterprise/enterprise_policy/analysis/doc/obs_eur_smes_2003-1.pdf

[91] E.g. EuroPACE (2004) and OFEM (2002). *La e-formation dans les PMI.* http://www.ofem.ccip.fr/pdf/Synthese_fami_eformation.pdf

6.2.3 OWN DEVELOPMENT OR OUTSOURCING OF TRAINING?

SMEs seldom develop the training themselves. Where this is an observation
for training at large, it is particularly valid for e-learning. Several reasons
explain this position: SMEs do not have the necessary expertise and staff,
nor the financial means for such development. The chosen solution is mostly
to **buy in available products** from commercial providers, larger companies
or training organisations. In combination with the lack of learning needs
analysis, such a choice is often made without a serious analysis of the offer:
the training is bought in function of its cost (with arguments such as "is the
cost reasonable" or, at the opposite, "if the product is expensive, it must
provide quality"), on the basis of unverified recommendations from others,
or just because it is available. With the exception of generic courses on
business management, basic skills training or foreign language acquisition,
the variety and specificities of SME training needs frequently lead to results
that are below real relevance.

If "own" developments are found, it usually takes place through commission
to professional training developers (often in the framework of funded
projects in which the SME got involved).

Specificity of the learning needs, which is a characteristic that is even more
distinctive for SMEs than for large companies, forces SMEs to look not only
for "just-in-time" learning, but additionally for "just-enough" training. Two
factors that are an additional reason for real small companies to turn to the
providers' market to fulfil their training needs.

6.2.4 SELECTION OF LEARNING OBJECTIVES

As a consequence of buying in existing e-training packages, the learning
objectives of the training are **determined by the (external) training
provider**. Commercial developers try and sell their products to as many
clients as possible, which implies that prior knowledge and skills of the users
are rarely taken into account. The learning objectives tend to focus on
content issues not on knowledge acquisition, i.e. learning (efficiently) to
learn is not considered as an objective of the package.

In many of the learning platforms that are used with these products, focus is
restricted to individual learning: groupware tools are not available,
communication tools are primarily oriented to teacher/tutor-trainee
communication, group work is not actively supported. Many e-learning
offers of this kind restrict the training **to formal knowledge, not
stimulating the acquisition of knowledge and skills through informal
learning** (e.g. provision of links to additional resources; building on the
informal acquisition of "soft" skills), even not paying attention to the
existence of additional sources.

Management and employees have not always (or is it "have always not") the same learning objectives. Mutual trust is needed and must be built before engaging in training. There is, in other words, a need for top-down as well as bottom-up approaches when defining learning objectives and formats of the training.

6.2.5   CONGRUENCE OF LEARNING OBJECTIVES AND CONTENTS WITH SME GOALS

Omitting a systematic learning needs analysis and outsourcing the provision of training may lead to **maladjusted training**, either to individual needs, to company needs or to both. Inadequate learning objectives also create contents that insufficiently match the enterprises' goals. Learning objectives that are taken into account will serve primarily job related learning needs that were detected rather accidentally. e-Learning platforms that are used automatically impose a pedagogical approach that restricts the learning objectives. Broader company needs and goals (e.g. promoting collaboration and knowledge sharing between workers), as well as more general upskilling of the workforce, get bypassed. In the end, this may affect the competitive situation of the SME and, on a longer term, its existence.

Commercial training providers serve by preference the interests of the majority of their customers. These are larger companies, which can or are willing to spend more money on training and bring in a greater number of trainees. The provider will, in other words, have a major difference in the profit it makes, with a same effort, while addressing SMEs or larger companies. However, needs of SMEs and large companies differ (they have other activities, organisation, culture, etc.).

Learning contents should not only aim at the acquisition of new/further knowledge, skills and attitudes, but should also take into account the information that is to be found in the e-resources of the enterprise and beyond.

6.2.6   THE LEARNING ENVIRONMENT: E- OR BLENDED LEARNING?

In SMEs, and especially in micro-enterprises, e-learning is hardly to be found. Most training is a mix of location and context (traditional, on the job and eventually e-learning). When e-learning is present, it is mostly used at the workplace. But, even then, there is an insufficient use of available e-resources, which are restricted for retrieving information and for support of communication. One of the explanations for this situation may be the reluctance of SME managers to give their employees access to the Internet.

Intranet resources can be used, when available, but miss of course the potential the Internet can offer.

In other words, most training that encompass e-learning must be labelled "**blended learning**". The nature of this blend is often quite accidental. European studies that provide a scientific basis for its composition in a corporate setting are still missing. An example of a study that pays attention to this problem is to be found in the US[92].

Findings are that online environments are preferred for exploratory and discovery learning, case-based activities and student-generated content. Traditional instructional settings are on the contrary preferred for problem-based learning, modelling of the solution process, collaborative tasks, role-play and simulations, coaching/mentoring activities and lecturing. Web-based learning is found motivating for its flexibility in activities, interactive and collaborative activities, sense of novelty, engaging in communication, support of the learner community, work-related incentives and the safe climate of its learning environment. It is not clear whether these findings can be applied in a European context as well. The acceptance of e-learning and the communication culture are for instance quite different between American and European people, as are the broader corporate cultural contexts between the continents. At first glance however, the findings are congruent with what can reasonably expected in a European setting as well.

To construct this blended learning, "cannibalising" existing materials and putting them in an e-learning context may be an effective procedure. It would respond to cost-effectiveness considerations that are also found in the principles of reusability of materials and provide the creation of short learning moments, which often integrate better than longer formal training with the working situation of SME staff who, being small in number, must make the most of their time in sharing work moments with learning moments. The cost of commercial products is often more related to additions to make the products fancy and provide them an attractiveness that stimulates buying, but that does not imply at all that they are also more effective.

One principle should however be applied, certainly for learning products that are offered to lower educated workers: avoid settings that remind the school situation. An example that could illustrate this principle was the use of an electronic kiosk with touch-screen instead of a regular desktop computer to deliver the training.

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[92] Bonk, C.J. (2002). *Online Training in an Online World*.
http://www.publicationshare.com/docs/corp_survey.pdf

6.2.7 DESIGN AND IMPLEMENTATION OF LEARNING STRATEGIES AND LEARNING ENVIRONMENT

"**Learning by doing**" remains the most important training approach in SMEs[93]. Their managers doubt whether e-learning is fit for this purpose. The learning environment that is favoured tries to mirror classroom teaching in e-learning setting. If e-learning is offered, its learning strategies and environment consequently rarely pay attention to aspects that can make learning more beneficial and effective: learners are expected to become automatically "autodidactic learners" through e-learning; the use of learning communities to support the learning process of individuals is hardly encountered; trainers are not trained for their role of coach or tutor; learners are not stimulated to act as tutors or trainers for their peers. Opportunities to use the (individual) learning for knowledge management and knowledge sharing, essential to create and maintain a learning organisation, are insufficiently taken.

Networking for the design and implementation of learning environments, which could help overcome the common complaints of SMEs about the cost of training and the learner being forced to struggle alone with difficulties, is not present.

6.2.8 "SITUATED" AND SOCIAL ASPECTS OF LEARNING, WORKPLACE AND WORK ORGANISATION

Since the work of Lave[94], it is accepted that learning is "situated", i.e. function of the activity, context and culture in which it occurs. Brown, Collins & Duguid[95] introduced the notion of cognitive apprenticeship: "Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge."

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[93] Reich, K. & Scheuermann, F. (2003). *E-Learning Challenges in Austrian SME's*. http://futurestudies.org/down/cooperation_collaboration_sme.pdf

Dalley, J. and Hamilton, B. (2000). Knowledge, Context and Learning in the Small Business. *International Small Business Journal, Vol. 18, No. 3*, pp. 51-59. Referenced in the Best Practice Database, http://www.sfedi.co.uk/ourWork/bestpractice/q18.htm and in Nolan, T. (2004). *The SME 'Problem': Discourses on Structure, Power and Communication. Proceedings of the AIM 2004 conference, Evry (France), 26 – 28 May 2004*. http://www.aim2004.int-evry.fr/pdf/Aim04_Nolan.pdf

[94] Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge: University Press.

[95] Brown, J.S., Collins, A. & Duguid, S. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18(1),* 32-42.

Such authentic domain activity also supports the transfer of what is learned during the training to daily practice in real life, thus avoiding training effects that limit the application of the newly acquired knowledge and skills to the training context itself.

Using **training "off the shelf" disfavours such situated learning**, as the developers cannot sufficiently anticipate what learners will experience "authentic". On the other hand, the use of e-learning (and its flexibility) at the workplace may precisely promote this kind of situated learning, on the condition that it is "localised", i.e. tailored to the context of this particular SME and its needs. But well understood situated learning advocates also for the embedding of (e-)learning in normal work processes, the use of e-resources, production tools and equipment (see further under the heading "KnowNet"). It shall be clear that such an approach is closely linked to management of change in the enterprise.

An often heard complaint about e-learning is that it disfavours social contacts within learning. This is certainly the case with some e-learning platforms, which restrict communication to mail exchanges with coaches (and eventually peers), and do not allow for real collaboration between learners. Blended learning and well designed e-learning settings that pay sufficient attention to the development of learning communities and enabling knowledge sharing can overcome this problem; offer even additional values that are missed in conventional classroom training. Hence the importance for SMEs of smaller size to have their learners network beyond company borders.

6.2.9   EVALUATION OF LEARNING

(e-)Learning is rarely evaluated in a systematic way[96] in SMEs. Evaluation remains often restricted to formal or informal collection of whether the learners felt "happy" with the training or learning and to the impression of practical application in job settings of what was learned. Information that can be fed back to the learning needs of the enterprise and its employees is consequently missing, and the SME becomes either unaware of its real learning needs or the playing ball of slippery salespersons and vendors.

Awareness of quality standards for (e-)learning, benchmarking, empowerment of the learner, advantages and disadvantages of training solutions, (e-)learning and training products, evaluation of competences, etc. are probably beyond the possibilities of a single (especially very) small

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[96] Kerr, A. and McDougall, M. (1999). The small business of developing people. *International Small Business Journal*, *Vol. 17, No. 2*, pp. 65-74. Mentioned in: Macpherson, A., Jones, O., Zhang, M. & Wilson, A. (2003). Re-conceptualising learning spaces: developing capabilities in a high-tech small firm. *Journal of Workplace Learning*, *Vol. 15, No. 6,* pp. 259-270. http://images.emeraldinsight.com/emerald/pdfs/awards2004/48.pdf

company. Networking at regional or sectorial level, or liaising with larger companies may offer solutions.

A final remark should be made about invisible learning effects: formal evaluation tends to measure success, but learning results are not always showing up in such formal evaluation: during the training, people start for instance to communicate with each other through the direct email addresses they exchanged, in other words outside the discussion environments of instruction (the used learning platform). A formal evaluation setting will overlook the learning that takes place in this informal environment, although the results might be as important as what can be noticed in the system.

6.3   MISSING E-LEARNING MODELS AND A THEORETICAL FRAMEWORK

In many publications[97] it is stated that research is not offering sufficient consistency to create adapted e-learning models and a theoretical framework. In the actual situation of instructional design, more research and development is still needed for that purpose.

6.3.1   BUILDING BLOCKS FOR INSTRUCTIONAL DESIGN

Of course there are useful building blocks for instructional design. The work of Jonassen[98] brings together such elements from a more theoretical perspective. Also Merrill, one of the gurus in instructional design, provides an overview of useful instructional design theories and some practical information[99].

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[97] See e.g. Mayes T. (2001). Learning Technology and Learning Relationships. In Stephenson, J. (Eds) *Teaching & Learning online. Pedagogies for New Technologies*. London, Kogan Page.

[98] Jonassen, D.H. & Land, S. M. (2000). *Theoretical Foundations of Learning Environments*. Mahwah, New Jersey & London, Laurence Erlbaum Associates.

[99] Merrill, M.D. *Does Your Instruction Rate 5 Stars?* http://www.id2.usu.edu/5Star/Index.htm

Merrill, M.D. *First Principles of Instruction*. http://www.id2.usu.edu/Papers/5FirstPrinciples.pdf

Perhaps the most comprehensive recent model of instructional design is provided by van Merriënboer[100] In his "4C/ID model", which is problem centred, he structures the interrelationships between 4 components (compilation, restricted encoding, elaboration, induction) of complex learning, integrating what is known about cognitive processing.

In the framework of the ADAPT IT (Advanced Design Approach for Personalised Training –Interactive Tools) European IST-project, this model was applied to personalised training and supportive tools for designers were developed[101].

Moreover, Elen[102] assumes that there is even consensus about basic issues and underlying principles of instructional design. He summarises this consensus as follows (referring for a more extensive discussion to Bransford et al[103].

> ► "With respect to learning: In 1986 Shuell[104] identified a limited set of features of learning processes. He stated that 'learning is active, constructive, cumulative, goal-oriented and self-regulated'. This list has been hardly changed the last two decennia. Thanks to a renewed recognition of Vygotsky and, more recently, Lave and Wenger (1991)[105] but also due to the exponential growth of the Internet, the contextualised nature of the learning process and, hence, the social nature of learning outcomes has become more apparent. Not surprisingly 'situated' and 'social' now appear prominently on such lists (e.g., De Corte, 1992, 1996)[106].

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[100] van Merriënboer, J. J. G. (1997). *Training Complex Cognitive Skills*. Englewood Cliffs, Educational Technology Publications.

[101] de Croock, M., van der Pal, J., Abma, H., van Merrienboer, J., Paas, F. & Eseryel, D. (2002). *ADAPT IT. Advanced Design Approach for Personalised Training – Interactive Tools*. Deliverable 3.2 of the ADAPT IT project. http://www.adaptit.org/files/ADAPT%20methodology.pdf

See also other reports of the Adapt IT project, e.g. final reports, Designer needs document on the project's website http://www.adaptit.org/

[102] Elen, J. (2002). The reality of excellence in higher education: The case of guided independent learning at K.U.Leuven. In E. De Corte (Eds), *Excellence in higher education: the case of guided independent learning*. London: Portland Press.

[103] Bransford, J.D., Brown, A.L., & Cooking, R.R. (1999). *How people learn. Brain, mind, experience, and school*. Washington, DC: National Academy Press.

[104] Shuell, T. J. (1986). Cognitive conceptions of learning. *Review of Educational Research*, *56(4),* 411-436.

[105] Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge: University Press.

[106] De Corte, E. (1992). Design and evaluation of powerful learning environments. In Creemers, B.P.M. & Reezigt, G.J. (Eds), *Evaluation of educational effectiveness* (pp. 5-27). Groningen: ICO.

► With respect to the goals of education: two recent concepts address the nature of the goals: disposition and competencies. Both reveal the need for recognising and aiming at integrated units of knowledge, skills and attitudes (e.g., van Merriënboer, 1997)[107]. They also acknowledge that, in addition to cognitive goals or 'cold' cognition, the affective and volitional components of learning processes deserve sufficient and deliberate attention (Pintrich, Marx & Boyle, 1993)[108].

► Accepting their mediating role (e.g., Laurillard, 1993)[109], the consensus on the nature of instructional interventions such as sequencing tasks or providing specific support, can be outlined by specifying four key-words:

- Activity: learners have to be active, instructional interventions aim at activating learners often by presenting them a task for which they have to collaborate with peers or have to confront reality or actual ideas about reality (e.g., De Corte, 1992, 1996);

- Integration: one of the basic tenets of more behaviourist approaches is no longer supported. It is the highly analytical approaches that are most effective. The task as a whole is to be learned be it in more simple versions by novices than by experts (Lowyck & Elen, 1991[110]; van Merriënboer, 1997);

- Consistency: research has amply demonstrated that 'the tale wags the dog' (Dochy, 2000)[111]. Mutual consistency of educational goals, evaluation approaches and instructional interventions determines educational success;

- Functionality: the time of method-freaks seems to be over. Pragmatism characterises the consensus (e.g., Laurillard, 1993). Even at the University of Maastricht, the PBL-method, while still widely used, gets adapted

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De Corte, E. (1996). Actief leren binnen krachtige onderwijsleeromgevingen. *Impuls*, *26(4)*, 145-156.

[107] van Merriënboer, J. J. G. (1997). *Training complex cognitive skills. A four-component instructional design model for technical training*. Englewood Cliffs, NJ: Educational Technology Publications.

[108] Pintrich, P. R., Marx, R. W., & Boyle, R. A. (1993). Beyond cold conceptual change: The role of motivational beliefs and classroom contextual factors in the process of conceptual change. *Review of Educational Research*, *63(2)*, 167-199.

[109] Laurillard, D. (1993). *Rethinking university teaching. A framework for the effective use of educational technology*. London/New York: Routledge.

[110] Lowyck, J., & Elen, J. (1991). *Transitions in the theoretical foundation of instructional design*. Leuven: University of Leuven.

[111] Dochy, F. (2000). A new assessment era: Different needs, new challenges. *Learning and Instruction*, *10*, 11-20.

in order to become more functional. Functionality gets determined by characteristics of learners, instructional goals and the specific context (Elen, 1995)[112]."

The mentioned consensus is oriented in the first place towards learning in the framework of school and higher education, and only exists about the overall principles. Elen states that "it must be clear that these principles do not dictate how in a particular context teaching and learning may look like, neither do they provide any concrete clue on how to promote the implementation of these principles. The context as well as individual options or preferences will, to a large extent, determine how the principles are instantiated."

6.3.2 TOWARDS A THEORETICAL FRAMEWORK?

A method for designing a theoretical framework that should lead to practical implementation for e-learning was developed during the cEVU (collaborative European Virtual University) European *e-learning* project[113]. It is extensively described in the "Background Paper of the cEVU workgroup Online Pedagogy[114].

It starts with a list of *pedagogical beliefs* or pedagogical principles that bear consensus of educationalists that support constructivism as a valid theory for learning:

- ► Shift from teaching to learning;
- ► Student - centred approach;
- ► Construction of learning environments and learning advice;
- ► Focus on active learning and learning strategies;
- ► Self-organised and self-directed learning;
- ► Competences;
- ► Interactive and collaborative learning;
- ► International communication;
- ► Authentic situated learning;

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[112] Elen, J. (1995). Blocks on the road to instructional design prescriptions: A methodology for I.D.-research exemplified. *Studie Paedagogica, 18.* Leuven: Leuven University Press.

[113] http://www.cevu.org

[114] Heiner, M., Schneckenberg, D. & Wildt, J. (2003). *Online Pedagogy – Innovative Teaching And Learning. Strategies In ICT-Environments.* Background Paper of the cEVU Workgroup Online Pedagogy. http://www.cevu.org/reports/docs/WP1-WG7_8_BP.pdf

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  ► Problem-oriented, case-oriented and guided enquiry-oriented
  learning.

In the background paper, it is argued that when applying these leading
principles, it is not necessary or useful to construct pedagogical models as
pre-requisites for the design of powerful learning environments (including
learning platforms, learning systems, teaching and learning arrangements). A
pragmatic approach, aligning pedagogical praxis to educational functions
that are organised within the perspective of the named educational beliefs
around key elements of learning and instructional settings should be more
helpful.

The identified *functions* are

  ► Authoring and representation;

  ► Moderation and facilitation;

  ► Working with tools and cognitive tools;

  ► Supporting learning strategies;

  ► Evaluation, self-direction, control and self-control.

Whether these functions support effectively the pedagogical beliefs is
dependent on a number of variables that can be clustered around four topics:

  ► Technology and digital platforms;

  ► Hypermedia content and presentation;

  ► Media and ICT;

  ► Teachers, learners and ICT.

The variables constitute the various small options that, added to the whole,
determine the virtual classroom, the design of the digital content and
consequently the course for action of the teachers and learners working in a
virtual environment. Metaphorically spoken one could compare the
pedagogical variables with the total of bolts, nuts and screws that fix the
larger parts of a motor block into their position and determine in this way the
output of the machine.

Although this framework was developed with tertiary education in mind, it
could serve as well to build consistency in e-learning for training purposes.

6.3.3 PRACTICAL APPROACHES

Besides theoretical approaches, (sometimes very) practical approaches are given to pedagogical issues that are connected to e-learning for (continuing vocational) training. Typical examples are to be found in the databases of the EC programmes[115], especially the Leonardo Da Vinci and Equal and Adapt & Employment databases or survey projects. A description of such approaches may be found in e.g. the synthesis report "Internet: nouveaux horizons pour la formation"[116], which combines descriptions of opinions, systems, standards, impacts, etc. with a number of cases. At a similar level, but more prescriptive, are the many "job aid" sheets and guidelines that are provided, often by (American) commercial providers or training organisations on the Internet[117] and the "handbooks" that are the main results of some European projects[118]. Finally, in between these practical approaches and more analysis-oriented studies or/and tools description/provision are the e-learning portal site of the EC[119], the European Training Village portal of CEDEFOP[120], and the eTTnet portal[121].

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[115] http://europa.eu.int/geninfo/info/guide/dbatoz/index_en.htm

[116] Hellouin, V. (2001). *Internet: nouveaux horizons pour la formation Expériences en Allemagne, Finlande, Italie, Royaume-Uni et Suède. Rapport de synthèse - Septembre 2001.* http://www.centre-inffo.fr/maq100901/pdf/adapt/adapt2001_integral.pdf

[117] E.g. Troha, F.J. (2002). Bulletproof Instructional Design: A Model for Blended Learning. *USDLA Journal, 16 (5).* http://www.usdla.org/html/journal/MAY02_Issue/article03.html; *The resources pages of SME-Learning.* http://www.smelearning.org/resources; Learning Circuits. *The American Society for Training and Development e-learning resources pages.* http://www.learningcircuits.org/; *What Works^TM Research and Consulting of Bersin & Associates.* http://www.bersin.com/ and many others.

European examples are the National Learning Network Materials Team document NMN (2004). *Paving the Way.* http://www.nln.ac.uk/materials/downloads/pdf/paving_the_way.pdf; AFNOR (French Normalisation Association) AFNOR (2004²). Information technologies. E-Learning. Guidelines. *Code of Practice.* http://www.europace.org/s2net/docs/guide/RBPZ76001-EN.pdf , and guide of the BE-ODL (2003). *e-Learning Getting started.* http://www.europace.org/s2net/docs/guide/gettingstarted.pdf

[118] E.g. Training effectivity evaluation. An electronic handbook. http://www.tremea.gr/contents.htm

[119] http://www.elearningeuropa.info/

[120] http://www.trainingvillage.gr/etv/default.asp

[121] http://www.ettnet.net/

6.3.4   KNOWNET

A specific approach has been created by the already mentioned research company KnowNet (see also chapter 5), with the help of a EC grant. Two seminars were organised in 2002 and 2003 around the theme of ICT and learning in SMEs, with the development of new pedagogies for (e-)learning in SMEs as one of the main topics. Issues that were addressed in this "pedagogy section" included the following:

- ► How can we measure the effectiveness of e-learning in SMEs?

- ► How can we measure the effectiveness of different models for e-learning in SMEs?

- ► What constitutes a rich learning environment for e-learning?

- ► How do different social factors impact on learning in SMEs?

- ► What pedagogic models are being used for e-learning in SMEs?

- ► What pedagogies can support the use of ICT for e-learning in SMEs?

- ► What is the relationship between different pedagogies and different technological platforms?

- ► What is the role of the teacher or trainer in supporting learning using ICTs in SMEs?

- ► What is the relationship between changing business practice and e-learning in SMEs?

European experts were gathered to discuss these issues through presentation and discussion of their own research papers and exploratory workshop activities[122]. This approach led to a position in which e-learning (in SMEs) cannot be disconnected from company business processes, implying its integration in business processes ICT use (and infrastructure), networks and systems. A logical but challenging conclusion is that "The tools or software systems used in learning will often not be dedicated e-learning platforms but everyday business systems and software. In fact, email may be the most common learning tool for sharing information and new practices within the workplace, leading to knowledge creation. Critically, the learning materials may well not be bought in or prepared by e-learning specialists, software houses or multi media publishers but the products of employees' documented and shared enquiry into their own practice. This requires a far wider definition of e-learning than is used currently. It means taking into account all the electronic and digital resources – both formal and informal – used by the enterprise as potential learning and knowledge development tools. It also means looking at the totality of business processes in designing the e-learning environment. In this respect, e-commerce may be a

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[122] For more details, see http://www.theknownet.com/ict_smes_seminars/

considerable driver for change."[123]. Attwell rightly remarks that such a perspective brings **e-learning and knowledge management** (but essentially also knowledge sharing) together. It also integrates e-learning in a contemporary vision on the "learning organisation".

This integration of acquisition and practice of skills and knowledge with work processes implies that, according to Nyhan[124], people in organisations should have "developmental work tasks" that enable them to develop themselves and thus be engaged in "developmental learning". It implies as well that employees be largely empowered in taking responsibility themselves for (e-)learning aspects that are defined in conventional training and e-learning by training managers, trainers and the used CLMS/LMS (Content Learning Management Systems or authoring and learning platforms): choosing the learning objectives; the learning content; the learning environment; the learning tools; time, pace and place of learning; the learning support and even the evaluation of their own learning.

6.4 CONCLUSIONS

The organisation of continuous vocational training for SMEs is very different throughout Europe, as it is embedded in the educational structures of countries, national, regional and sectoral policies, and the training culture of people with various education levels as well as company cultures of the SME itself.

Attention for **e-learning** within continuous vocational training remains in SME environments **relatively marginal**, although there are clearly differences throughout Europe, as the case studies in Appendix E to this document demonstrate.

There is a **need for convincing demonstrators** that include also the use of partnerships, and for the provision of resources.

More research should be put in detecting the **needs for e-learning** within SMEs, as this remains still insufficiently known.

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[123] Attwell, G. (2003). *Report on Stirling Seminar: Exploring models and partnerships for eLearning in SMEs.* http://www.theknownet.com/ict_smes_seminars/papers/Attwell_report1.html

[124] Nyhan, B., Cressey, P., Tomassini, M., Kelleher, M., & Poell, R. (2003). *Facing up to the learning organization challenge, Volume I – key issues from a European perspective.* Luxembourg: Office for Official Publications of the European Communities. Mentioned in Attwell, G. (2003). *Report on Stirling Seminar: Exploring models and partnerships for eLearning in SMEs.* http://www.theknownet.com/ict_smes_seminars/papers/Attwell_report1.html

A shift is needed from formal training (e-learning) **towards integrated knowledge management, knowledge sharing** (including informal learning) and change management. In other words a "fusion" of technology, learning and work should be realised. This will automatically lead to new pedagogical models and frameworks; however this shift must be supported with pedagogical research that is based in sound insights of instructional psychology and organisational learning.

Many authors suggest that the implementation of e-learning in SMEs should follow an **incremental approach**, which shifts gradually from traditional classroom training over blended learning towards e-learning. The question remains whether such an approach is capable of realising the full potential of e-learning. A more radical change as the one suggested in the mentioned "fusion" could be more beneficial, but should not be postponed too long if European SMEs want to remain competitive in the world.

7   FUTURE ORIENTED SCENARIO

7.1   BUILDING ON THE EXPERTS WORKSHOP OUTPUT

The workshop held in Brussels on 18 and 19 October 2004 involved a panel of e-Learning providers, experienced SME practitioners, IT consultants, Government representatives and EC authorities.

It has considered the last evolution of the Internet and the tendencies to progress towards a real knowledge society, as required by the Lisbon objectives.

It has also considered the duality **between two existing and possible business models**:

► Free knowledge sharing (a growing need and success demonstrated by initiatives as the free encyclopaedia "Wikipedia").

► Business knowledge model: need to build a sustainable market allowing e-Learning providers to build a viable economic activity (even is partly supported by government incentives or funding).

To operate the workshop four "expert focus groups" where organised, and turned in four rooms where they confronted their experience and needs with the questions of organisers. These four groups were:

1. SME needs (What are the needs from the point of view of SMEs)

2. Pedagogy aspects (Specialist opinions on methods to address needs)

3. Organisational aspects (What organisation, bodies, communities)

4. Government policies (How can government support)

Despite the different focus of the groups, many remarks or opinions were common to several groups. All opinions expressed may be classified in eight categories, after removing factual information or opinions on which no specific classification is applicable:

1. Community building (how to share knowledge between SMEs)

2. Informal / Immediate (SMEs want to access knowledge and learning as soon they need it, without contracting or administrative process)

3. Awareness (getting informed and convinced of the potential and opportunity/ies of e-learning)

4. Tutorial (guidelines, help desk, handbooks, instructions; where to find them and how to proceed)

5. Wide – Specialised (the debate between general purpose learning or very specific, technical, SME focus)

6. Economics – issue related to the cost of the system (communication, learning) and to finding a return on investment

7. Competition (idea that know-how is a corporate asset: Why to share it with competitors – Fear that specific knowledge would leave the company)

8. Incentives (request for individual or corporate incentives, generally distributed by public authorities

The following figure represents the various categories of opinions expressed during the workshop, by logical order (1 to 8) and in percentage.
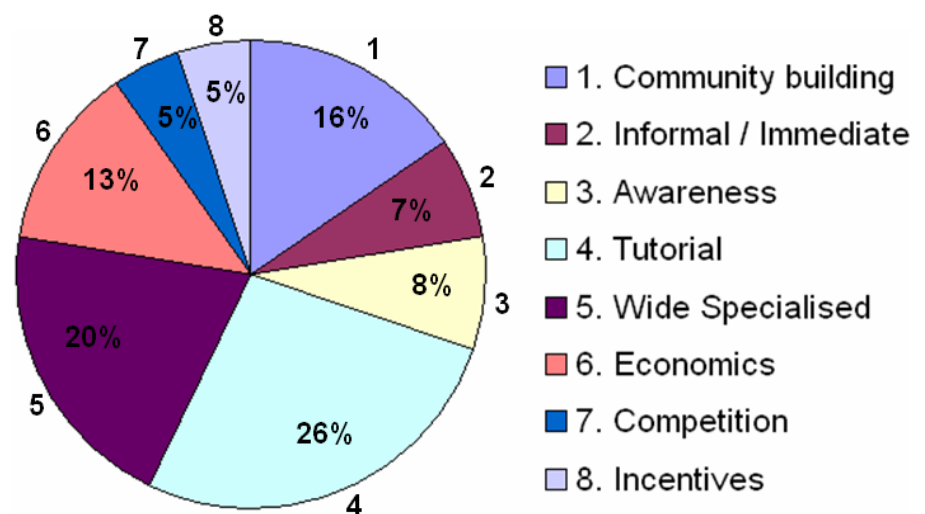
Community building is important in a double direction. At the level of the individual learner it is highly desirable to be part of a learning (social aspect of learning) and e-learning may also offer the occasion to find this in a virtual community if the own enterprise is too small to build such learning community in house. At the level of the company it is important to create partnerships with other SMEs, with public-private organisations, or with larger companies (especially within the own sector of operation) to create a cost-effective solution.

Most (e-)learning is provided as formal training. Informal learning corresponds better with the nature and culture of SMEs. However, it must be

embedded in larger and systemic approaches that include knowledge management and change management to be effective on the longer term. Te advantage of paying explicit attention to informal learning is also that moments of formal learning can be shortened, taken up in a "fusion" of learning and work, and better focused (see also the need for specialised training).

The numerical largest categories (3, 4 and 5) concern the necessity to develop awareness, to help and guide SMEs in finding their way in e-learning and the nature or subject of the delivered training. One element connected to awareness raising consists in empowering the learner, making hem/her responsible for the own development. It was suggested to use for this purpose learning contracts. Effective tutoring of learning is only possible if the necessary "e-competences" are in place. The experts recommended to have attentions for "training the trainers", also in (larger) SMEs. Although for the last category a wide coverage is sometimes a necessity, most remarks insist on the specialised character of e-learning for SMEs; they want a concrete answer to technical issues.

The category 6 "Economics" reflect the perception of e-learning cost and value, with items such as: is a return on investment demonstrable, how to solve cost issues (e.g. via associations). For SMEs and individuals, a part of this value (in addition to the knowledge acquisition itself) is the degree of acknowledgement through a formal certification, diploma or label.

Another large category of remarks focuses on the immediate character of "e-learning requests": SMEs would like to find a solution to a problem without loosing time of contracting formal e-learning. To make these immediate solutions available, preferably without cost, the idea of building a community is the most attractive. Some reserves may exist regarding competition: the desire to keep company know-how as a "proprietary asset" may be contradictory to the idea of sharing knowledge.

The request for incentives is not prominent: for SMEs e-learning should demonstrate its value without needing much external incentives and the bureaucracy (requests, forms, conditions) that are usually linked to any kind of subsidy. Incentives will however be needed to stimulate the mentioned community building, and to support (e-)learning providers with the development of solutions that are customised to the SME needs (whereas today this market is too small and too volatile to build a business case).

The Workshop was also confronted with some case studies that demonstrated the necessity of having SMEs approached in a comprehensive way, not isolating their learning needs. Building a trustful relation by supporting them in their concrete and immediate organisational, administrative, financial,… and learning needs as these occur is the most effective. Once this relation is established, it becomes easier to enlarge the time perspective and to introduce concepts of networking.

According to a survey from the Henley Management school[125], SMEs need e-learning solutions that are cheap, accessible, trustworthy, developed locally and easily assessed for quality.

An extensive overview of the experts' remarks, made during the workshop and classified per working group (including allocation to the various categories) can be found in Appendix G.

7.2 TRACKS FOR FUTURE ORIENTED SCENARIOS

7.2.1 LESSONS FROM WORKSHOP AND EXISTING INITIATIVES

7.2.1.1 EXISTING PORTALS

The Internet is obviously the basis for any future-oriented scenario. The connection rate (including broadband) has risen dramatically in Europe during the last 5 years. Internet access is a pre-requisite for e-learning and any global non-exclusion policy should – as for general eGovernment policies – take that priority into account for SMEs.

The current situation of the e-learning proposals and policies has revealed many European and local initiatives with some common characteristics: all present well constructed home pages, explaining e-learning, their own philosophy and organisation, their membership and activities, their ambitions, the events they organise or participate in, etc. However, few of them propose any concrete and consistent learning programme behind the cover. In particular, these web sites and portals do not provide an immediate and general taxonomy of SMEs business matters and corresponding trainings. Few of them propose concrete trainings, and when they do, it is in a very limited number of matters. Examples of such sites and organisations are CEDEFOP[126], ISIS[127], VIP-Forcom[128], ELSA[129], Gambit[130] (with some examples, in English).

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[125] Henley Management College (2004, October). *The Development of the SME Leadership Model - Results of Research Study.* UK. This report was referred during the workshop held on the 2004, October 18-19 at Unisys. Further information can be requested to Henley Management College on http://www.henleymc.ac.uk/.

[126] http://www.cedefop.gr/

[127] http://www.iciscommunity.com

[128] http://www.forcom.it/vipproject/index.htm

[129] http://elsa.clepa.com/

Other sites provide a country-oriented approach about information providers, although few programmes were specifically conceived to address SME needs, even if their introduction pages demonstrate awareness of SME needs e.g. BENE (Business Education Network in Europe)[131] or the KnowNet in Wales[132]. The same remark may be applied to European initiatives as "e-Learning Europa"[133].
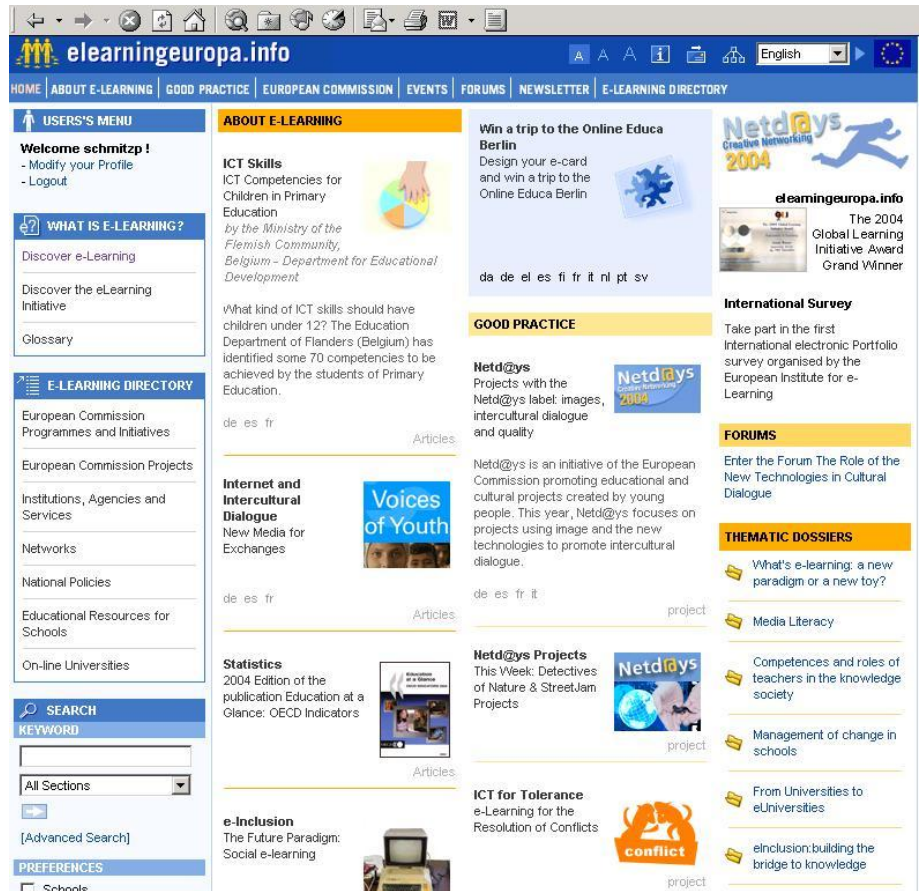
The common characteristics of such portals are:

> ► Their scope is very large (school oriented, for very young people etc.) as these portals are aimed at a widespread audience and are meant to offer information of a general nature;

> ► As the aim of such portals is not specifically dedicated to SMEs, the specific material that could be used by SMEs is not highlighted in front, and business content – if any – is diluted in more general content related to art or to societal issues.

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130 http://www.mygambit.info

131http://www.bene-europe.org/

132 http://www.theknownet.com/sme-learning/

133 http://www.eLearningeuropa.info/

7.2.1.2   THE NEED FOR A DUAL MODEL

The present study and the Workshop have produced convergent points of view regarding two business models that may seem at first sight antagonist but are in fact rather complementary:

► The free knowledge sharing approach;

► The formal certification approach.

The first approach is comparable to internet "Google" searching. It is informal (no contract, no certification), it intends to answer an immediate need (no waiting time) and it is fundamentally free (no fees). The question has been raised whether free content equals "no-value", but all participants of the Workshop agreed that content value remains great in the free environment of the Internet, as value is a primarily function of the time that people dedicate to learn something corresponding to their immediate needs. The free knowledge sharing approach is the area where Europe and Government could and should support the collaborative work by promoting adequate standards and tools.

The second model approach is produced and used by specialised education centres and content providers. It mostly leads individual trainees to obtain a higher certification. The business model is generally "pay to learn", charged directly to the learner or via associations.

Need for awareness and tutorial support (cf. 7.1) affect both approaches. In this perspective the first, informal approach could lead SMEs to the second, more formal one.

7.2.1.3   FEASIBILITY OF KNOWLEDGE SHARING

The knowledge sharing approach is inherited from software development. Applied to computer program development, its productivity and efficiency was demonstrated by Richard Stallman in 1984, when he initiated the "Free software model" (or "Open source software model" to refer to a popular dissident wording). He had provided new ideas and philosophy of sharing knowledge through a worldwide community of contributors.

Based on an innovative vision of copyright, the GPL (general public licence) proposed the "Copyleft" notion, by which the author's work (originally a computer program) is provided to a worldwide community where anyone has the freedom to change it, republish it, while transmitting the same freedom to further *changes and copies*.

Developed for software, the concept produced great results (the GNU project, the Linux kernel) and was in a second stage applied to other knowledge domains[134]. Regarding software, it produced the only software environment capable of withstanding competition from established proprietary software developers. A virtual organisation composed of hundred programmers, spread across tens of countries, with no financial support, no chain of command or established central organisation and no sales or marketing team, became in a few years the main competitor to proprietary software industry. In an extraordinary paradox of economic history, their products not only stand alongside those of software development giants (e.g. Microsoft), they have also become an integral part of the business strategy of other large companies in the world (IBM, HP, Sun) with historically huge development budgets.

Rather than the products themselves, it was the unorthodox organisational model that was interesting: these groups have demonstrated unprecedented capital and organisational efficiency. According to classical organisational theories currently operative in the business world, such results should not be possible. The efficiency of the model can be summarised as follows[135]:

The open knowledge development model

We do not plan here to advocate open source (or "free software"), but to estimate the interest of the model when applied to the needs of SMEs regarding e-learning. The model provided the first experimental evidence that the knowledge society has real potentialities to help Europe achieve at least a part of its Lisbon targets[136]. Furthermore, it leads us to ask what else could be achieved if these mechanisms can be harnessed for the purpose of e-learning.

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[134] See in particular the "Club of Amsterdam" white paper: "Embracing the Knowledge Society, a public sector challenge" http://www.clubofamsterdam.com/contentarticles/10%20Knowledge%20Society/unisys.pdf

[135] Unisys White Paper: *Embracing the knowledge society, a public sector challenge*, pp. 13-14

[136] All information on the Lisbon European Council conclusions of 19th April 2000 and their follow-up can be found on the following websites: http://ue.eu.int/cms3_fo/showPage.asp?id=339&lang=en and – focussing on small businesses: http://www.smallbusinesseurope.org/Issues/The%20Lisbon%20Strategy/issue_detail

7.2.1.4   THE WIKIPEDIA EXAMPLE

The Wikipedia encyclopaedia[137] is a significant illustration of the above knowledge model. Operated since 2001, this collaborative work reinvents the Diderot team of 18th century encyclopaedists thanks to the Internet resources, allowing many people to develop a "Free Universal Encyclopaedia and Learning Resource". All materials are "given" by volunteers, as free content under the GNU Free Documentation License, meaning that it may be freely used, freely edited, freely copied and freely redistributed subject to the "non appropriative" restrictions of that license. As evidence of its success, Wikipedia recently announced one million articles in one hundred languages (September 2004).

The Wikipedia example was mentioned by several participants to the workshop, because it has proven to be powerful while being low-cost. It demonstrated also that civil society has the capacity to adopt knowledge economy technologies and techniques outside a strict commercial context. Therefore a future track is to evaluate if, applied to e-learning for SMEs, the model would achieve efficiency for a cost much lower than it would be according to normal procedures, and which are the conditions to achieve this.

7.2.1.5   NEED FOR FORMAL CERTIFICATION MODEL

Informal learning is an important phenomenon, but it does not provide the warranties a certification brings: completeness and quality of the information the learner has visited, testing of the level of the knowledge acquired, label of a school well-known for its expertise in a specific domain: therefore, the certification tracks will remain successful.

This second model approach corresponds to the 'economic' and 'competition' categories: the aim is not to solve an immediate problem, but to improve in time the long-term SME efficiency and visibility (or for employees the individual competence and "CV value"). For SMEs, the issue is to demonstrate return on investment both regarding their daily activity and the visibility of gaining a formal certification, diploma or label.

This approach is less co-operative and more in line with competitiveness improvement: how to improve exclusive company knowledge and differentiate from competitors.
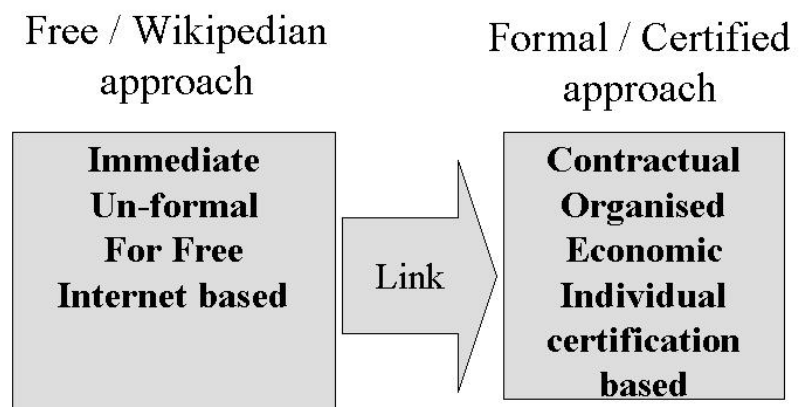
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[137] http://www.wikipedia.org/

7.2.1.6 COMPLEMENTARITY OF OPEN AND FORMAL APPROACHES

Far from being antagonist, as is the case with free and proprietary softwares, when applied to e-learning, the free and formal approaches appear to be complementary, because they respond to two different needs and two business models:

The two business models

Free / Wikipedian approach		Formal / Certified approach
Immediate Un-formal For Free Internet based	Link	**Contractual Organised Economic Individual certification based**

The Wikipedian approach corresponds to the need for immediate information: when you meet a concrete difficulty during your work, you look for best practices to solve your problem and expect also immediate result: no complex searching, no initial contract to sign, go to the fact, and … no fees to pay.

To address this need, the solution should be

  ▶ "one stop shop": a single well known portal providing access to every required knowledge base;

  ▶ "localised ": based on taxonomies reflecting the diversity of the matters, the languages, the variety of local approaches;

  ▶ "factual": producing direct access to practical knowledge (no philosophy, no whys, whos or hows, but direct links between taxonomies and practical knowledge).

For people wanting to increase their competencies in a more in-depth, structured manner, the same entry point (a web portal, a taxonomy of practical domains of knowledge that interest SMEs) could lead them to a *formal certified approach,* based on a contract between the SME or the trainee and an organisation (private of government) specialised in the learning he is searching for.

To reach this formal, certification oriented content, the portal should orient the user to content providers and their offers. All related incentives (e.g. government individual grants or funding depending on the countries) should be also activated through the same one-stop shop portal.

7.2.2   SCENARIO FOR GOVERNMENTS

7.2.2.1   ROLE

Directing towards a knowledge economy in line with the Lisbon programme, the role of the public sector is not to provide content, but

► To create events and develop e-learning awareness;

► To provide the basic infrastructure that gives everyone the possibility to develop and to use this content: rules, roads, communications, and – regarding ICT – broadband and secure Internet;

► To provide incentives for information providers, enterprises and individuals.

Firstly, to provide the physical and tutorial access for e-learning in SMEs, governments – especially local branches or municipalities – could stimulate awareness and organise or finance the implementation through the provision of "e-learning points". The principle would be similar to the functioning of business centres, where individuals could find a common infrastructure including ready to use trainings and online tests and certifications.

For the content, the approach must be wider since a municipality, a region or even a country often aren't the right level for information management. Some processes (mainly administrative and fiscal) are still defined by local/national rules, but the European market includes the application of similar, if not identical, quality and knowledge requirements that impact a.o. products responding to more general standards (e.g. isolation or industrial packaging standards, bio-certificates for food).

As a consequence of the single market, the European Commission is the appropriate level for a "one stop shop" e-learning portal that could become the "preferred point of entry" when looking for e-learning, but that would also link to national, regional or even private initiatives. For a minimal investment, such a portal could include an "Open Space" where enterprises share knowledge in accordance with the Wikipedian spirit.

Creating such a portal will not be sufficient to initiate a "virtuous circle" of creating content and producing an e-learning reflex at enterprise and individual level. A strong leadership will be necessary, especially in the start up and initial phase: therefore the creation of the portal tool must be

followed by a strong coaching, where a dedicated team (for a specific period of time, e.g. initially 2 years, possibly renewable) would collect contributions, promote specialised clusters, motivate local communities. In particular, it is an illusion to believe that the "Open Knowledge" model (if government implements an empty portal with Wiki-like software and invites volunteers to contribute), will automatically produce quality knowledge without strong coaching and various incentives or awards for the most significant contributors.

In reality, the model requires a mix of non-profit oriented contributions, respect, acknowledgement, awarding and strong leadership!

7.2.2.2 SUPPORTING THE DEFINITION OF TAXONOMIES

Taxonomies should lead "to the facts" in a problem solving approach that takes language, location and culture into account.

Problems may be central to the core SME activity (e.g. for administration be related to bookkeeping, fiscal issues, finding funds, ICT risks awareness, risk prevention, setting up business) or marginal (e.g. when assembling usually iron parts, a SME worker may encounter problems when assembling by exception some aluminium parts). Some of these problems will have a general nature, others will be embedded in local or national regulations and measures.

To define the list of categories corresponding to the concrete business orientation (a taxonomy of professions) and SMEs needs, a first step is to identify and involve a panel of SME oriented "community leaders" that may act as "evangelists". They should identify the needs concerning both the taxonomy and the related content and define the future portal structure and functionality requirements.
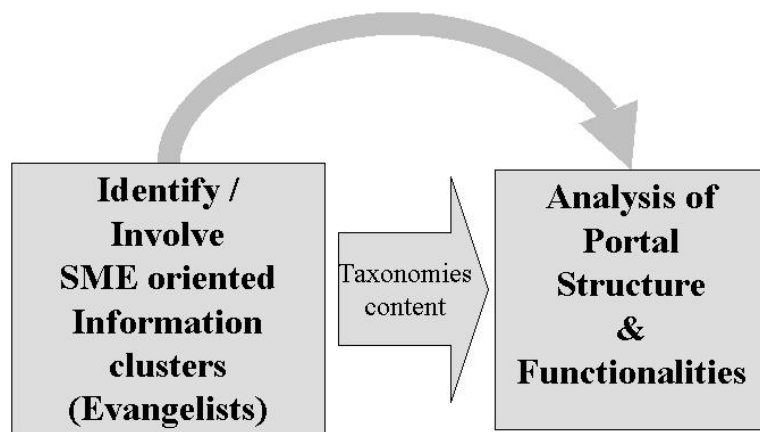
7.2.2.3 ADOPTING AND PROMOTING STANDARDS

Another prerequisite for sharing knowledge is the adoption of common information standards that allow knowledge exchanges and interoperability.

The future portal feasibility study should put in first place the adoption of these information standards, as a precondition for "WIKI-learning" (a structure allowing e-learning contributors to "upload" any e-learning content (in any language), using a specific open format / open standard).

For the same reason, the portal should also propose an appropriate tool (also in various languages) to exploit the content (in the standard open format): users can work on line or download both the tool and the content on their local PC.

Finally, the standards should include a common definition and understanding of copyrights: the tools and the shared content should be licensed according to a license allowing free use, free reuse, no appropriation in case of re-distribution or in case of improvement.

Depending on market forces and on the attraction power of certification, content may also be submitted by a professional e-learning provider in a formal certification approach, and not only in the framework of a free knowledge sharing approach. In this case, the copyright condition may be different (licence conditions are fixed by the authors) and provision of various tools (open source and proprietary) and various contents as well as various standards (open or proprietary) should be considered.

7.2.2.4 BUILDING A ONE STOP SHOP PORTAL

The portal specifications should impose development in compliance to International standards for websites and browsers (e.g. W3C), and standards for common data collection templates (e.g. Open XML).

These standards, applied to the portal needs and after approval by the governing authority (e.g. EC), will be used for the portal design process, the content organisation and print options, the page layout, use of font types/colour and graphics, reading and scanning, links, searching, navigating, and accessibility as follows:

The portal usage must be possible with various browsers (e.g. Mozilla, Opera, Microsoft IE, Firefox…) operating with various operating systems (Linux, Windows) and various screen definitions / resolutions.

Following existing portal sites, the portal should have a **dual structure**, corresponding to two distinct sites:

   ► The administration system – a content and a structure management system allowing authorised users (contributors) to modify both the structure and the content of the published system;

   ► The portal itself, which must be a published system open to public access through the Internet.
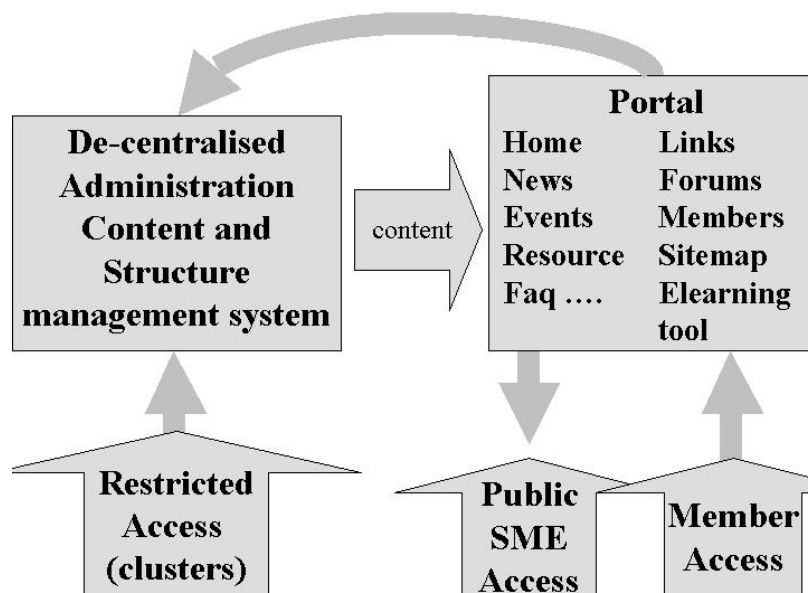
Information (the content of the portal) should come from two sources:

- ► The administrators (main portal administrator, cluster coordinators, their delegates, forum moderators – for their own forum);

- ► The members. In principle, anyone willing to contribute, provided he or she fills in his/her coordinates and user profile (administration, industry, civil society etc.) in the members database and communicates a valid e-mail address to which the login / password can be sent.

Information communicated by members (news, events, forum communications) through the portal will never be put directly on line. It will be presented for validation in the administration system queue.

The information screening will eventually adapt the content according to a policy to be decided with the authorities (e.g. EC), and will check the security and non-damageable / offensive character of possible attachments.

The possible sections would be evaluated in depth in a feasibility study.

7.2.2.5 OPERATING THE PORTAL

A second mission after developing the portal concerns its operations. In confederating the two approaches of free and formal e-learning, the portal should be coordinated by an administration (and animation) team with the aim:

- ► To develop and provide content to the different sections and taxonomies

- ► To initiate and support free contribution (and loading these contributions into the portal after a control);

- ► To link taxonomies with all existing concrete learning proposals (from public sector and from industry)

- ► To clarify the conditions of use (free/informal or formal/delivering certificates).

Portal sections may be delegated to "clusters" or centres of excellence focused on a specific area (e.g. geographic), a language / culture and/or on a specific business branch.

An operation committee (including representatives from SMEs and from e-learning providers) could use funds to award incentives, expressing the public recognition of a specific contributor (e.g. a free content provider, a formal certification or a model SME "X") and disseminating best practices or best knowledge…
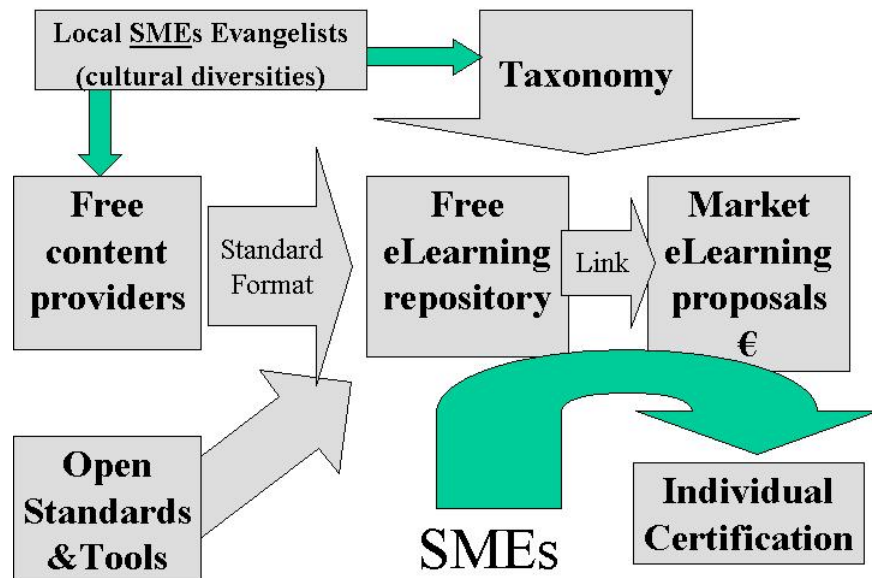
Illustration of a pan-e-learning portal animation:

► Local cluster animators of evangelists are in charge of motivating free content providers and of defining and improving the taxonomies corresponding to the diversity of the target audience needs;

► Free content providers have a stable standard format to provide their content and are "granted" with a rapid recognition as "best practice leaders": the one stop shop portal may provide them immediate award in terms of public recognition;

► The existing open source tools (able to use the content) should be available, on line or for download;

► The SME would have public access to factual and business oriented taxonomies;

► "Empty" cases in taxonomies should indicate missing content (Public sector may provide incentives to encourage contributors to provide this content);

► The same taxonomies should lead trainees to formal certification (including personal contact with examiner or on-line tests, depending on the method).

With this approach, the new pan-e-learning portal would benefit to both the need of a "one stop shop with immediate result" and to the need of the e-learning emerging industry.

8   RECOMMENDATIONS

The different steps of this study have focused on the barriers that could prevent and the opportunities that could encourage the take up of e-learning in SMEs. This chapter presents, as a general conclusion of the study, different actions that could encourage the SMEs in their adoption of e-learning. Different owners have been identified for these actions:

- ► The European Commission;
- ► The Regional and National organisations;
- ► The Solution Providers;
- ► The SMEs.

8.1   THE EUROPEAN COMMISSION AND MEMBER STATES

8.1.1   DEVELOP A COMMON TAXONOMY

The words we use can be very important: training, learning or sharing knowledge could cover the same activities, but not be perceived in the same way. Training is perceived as a cost, and often generates a passive behaviour, whereas learning is active and knowledge should be considered as an important asset in an organisation.

"e" is only one of the ways to deliver learning, the real objective must remain the learning.

The EC should (further) stimulate the development of a common learning language and culture, actively promoted through its policies, informational and educational systems.

8.1.2   SUPPORT LEARNING COMMUNITIES

Policies should encourage and support the Open Knowledge Communities, e.g. by supporting the usage of a common infrastructure, the development of common content but also of common interests and strategies. Yanosky et al., (2003) believe that during the next five years, e-learning will be the major

area in which open-source alternatives will cross the line from infrastructure to applications, and compete directly with commercial solutions[138]. In addition to a common taxonomy (see above) common standards regarding the content format and the open source tools could be identified and promoted.

The Commission should be the 'gardener', providing an environment in which networks could grow and flourish, developing adequate copyright and intellectual property policies, in accordance with an open knowledge model.

8.1.3   CREATE ACCREDITATIONS

E-learning courses should get a 'label' that guarantees their quality and that would allow for equal acceptance of skills acquired via distance and e-learning on the job market.

Today, there is a profusion of courses but little support to find its way in the course offer. As for the ECDL (European Computer Driving Licence), the accreditation of VCT offers should have an international dimension.

8.1.4   REDEFINE THE ROLE OF UNIVERSITIES

Universities are important stakeholders in lifelong learning. Their role could evolve, and the link between the learner and the university could become a lifelong link, both to constantly disseminate the knowledge and to develop the networks and communities.

Tertiary education should be made responsible for transferring its knowledge to the SMEs, and Member States should measure their universities, polytechnics and colleges on it.

Universities are acting as training brokers in several European countries. To do so effectively, they must develop the right skills to understand both the needs of the SMEs and the interests of the providers.

As content and (e-)learning specialists, universities could also play a role in the accreditation of the e-learning courses.

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138 Yanosky R., Harris M. & Zastrocky M. (2003, December). *Higher-Education E-Learning Meets Open Source.* Gartner Group.

8.1.5   SUPPORT THE RESEARCH

Research on e-learning or online pedagogy is still largely missing, and when available it focuses rather on e-learning for educational settings than for continuous vocational training. The specificity of e-learning by mature learners, its connection to lifelong learning and the workplace motivates the necessity of having a well supported separate strand in the ongoing research. Such research should maintain close connections to the ongoing broader research in the fields of instructional psychology and organisational learning. In comparison with today's European and national/regional for research and development that by its nature is aimed at larger companies and industry, the needed educational research for support of e-learning in SME settings is almost negligible, notwithstanding the fact that SMEs represent more than 99% of all enterprises in the European Union.

E-learning in SMEs cannot be disconnected from knowledge sharing between employees, knowledge management of the enterprise and management of its change. Since many, if not most SMEs miss such management and knowledge sharing attitudes, these as well have to be stimulated by larger policies and support measures of both the European and national/regional levels.

8.1.6   PROMOTE BEST PRACTICES

Some European success stories in CVT, like the ones that were identified in this study (e.g. Scotland and Germany), are worth repeating in other regions or countries. Effective dissemination of such best practices is crucial. A possible stimulus for this dissemination, apart from the provision of dissemination portals such as elearningeuropa.info (EC) and European Training Village (CEDEFOP), is the demand to funded projects that dissemination of the practice is continued beyond the funding period of the project. Like in some EC programmes, also other funding entity should create special (small) grants for such dissemination activities.

8.1.7   DEVELOP A ONE-STOP WEB PORTAL

SMEs are looking to a single window to find their way in e-learning. To inform and promote best practices and facilitate the information and knowledge sharing, the EC should support the portal development, its operation and award the most significant contributions. A part of this portal should provide informally "SME shared knowledge". This free content and the "proprietary formal e-learning" are not in contradiction, because (at the contrary of their equivalent free or proprietary software) they do not address the same needs: immediate one side, formal certification at the other side.

Therefore a single portal could both attract SMEs finding their shared knowledge and lead them to formal certifications if needed.

8.2 THE REGIONAL AND NATIONAL GOVERNMENTS AND ORGANISATIONS

8.2.1 OPTIMISE THE ROLE OF POLICIES

As a general rule, it is recommended to take a supportive approach instead of a prescriptive one: policies need to help achieve objectives.

As a consequence of the specificity of SME needs, policies should address in the first place the closest level, i.e. the local one, rising as appropriate to regional, national or European levels.

The role of policy makers is to act as a watchdog: they need a strong vision, to concentrate investments on effective, sustainable projects and must build a common agenda for all the stakeholders.

8.2.2 SUPPORT A LIFELONG LEARNING CULTURE

CVT must be part of a lifelong learning culture. To encourage such learning culture, incentives must be created in collaboration with all stakeholders (SME managers responsible of the skills development of the employees, schools and universities, learners). Suggestions for such incentives (and accompanying policies) can be found in effective measures of other countries and regions, when they are accessible (published, not only in the native language). It is recommended that also regional and national bodies should enter into a community of "mutual learning".

Whoever has responsibility for e-learning should be encouraged and trained to acquire and further develop their e-competences. This is not only a responsibility of the EC, it is recommended that such training projects are also initiated at local, regional or/and national level.

8.2.3   ENCOURAGE PARTNERSHIPS AND BROKERAGE

SMEs need e-learning solutions that are cheap, accessible, trustworthy, developed locally and easily assessed for quality.

To respond to these needs, it is necessary to

- ►   Group the content of common developments;
- ►   Reuse existing materials;
- ►   Create learning communities;
- ►   Manage the SMEs expectations.

Supply and demand sides should to be able to understand each others: they need intermediaries, e.g. the Chambers of Commerce. The intermediaries must have a natural link with SMEs, providing them with a good understanding of their day-to-day activities. Their role will be to adapt the offer to the needs of the SMEs and to create the critical mass for the development of course content.

Intermediaries and catalysts of e-learning should be trained to both e-learning and the SME environment. In order to build a long-term relationship, the partners must be open and independent: they need a coordinated approach and a common agenda.

8.2.4   BUILD ON EXISTING RELATIONSHIPS

E-learning could take place as a documentation of existing processes: the e-Government could provide e-learning on how to fill the requested forms, the supplier could provide e-user notices, the SME could present the activities of its enterprise to its clients, the chambers of commerce could e-document their services to the affiliates, the universities could publish their e-contents.

Especially in the public sector, the development of such procedures and relationships should be encouraged.

8.2.5   EVANGELISE THE SMEs

SMEs should be aware of the potential of blended learning for fulfilling company and individual needs. This can best be done by dissemination of convincing demonstrators that open the view and minds of their managers and staff, and by disseminating good practices (e.g. the Scottish case in this study as a comprehensive approach to training and learning).

This dissemination must be a part of policies and their supportive measures at European, national and regional level, but also of actions that are being undertaken by SME training bodies and sectoral training organisations: the successful cases of this study all offered a local customised service to support the SMEs in their discovery of the learning offer.

8.3 E-LEARNING SOLUTION/SERVICE PROVIDERS

Providers should provide innovative, creative learning solutions that meet the specific needs of SMEs, and participate in settings that can better fulfil it. This includes the customisation of existing products to the (sometimes very) specific needs of SMEs (with respect to content, format, available infrastructure, learner support and evaluation) at a reasonable cost, while at the same time accepting that their learning offer is part of a larger mix, including blended learning.

Due to the size of SMEs and their limited training budgets, versus the need for providers to make business, many providers are hesitant or even reluctant to make a quality offer. Possibilities can nevertheless be found in an active participation of providers in parenthoods between SMEs and large companies or/and regional bodies that approach SMEs in a more comprehensive way, in which learning needs are linked to business needs, familiarity with the training market and subvention possibilities, etc. E-learning providers can also be part of a larger franchised network.

SME owners only invest time and money when they see the immediate return they get from their investments. Today, there is little information available on effective ROI of real business cases. E-learning providers or associations could offer tools and methods that help assess the ROI of e-learning.

It is recommended to providers to contribute to the development of parenthoods and networks.

8.3.1 PLATO APPROACH

In various regions and countries parenthoods between SMEs and large companies exist with changing results. A new initiative is that large companies share their learning library with SMEs (e.g. the example of Belgacom in Belgium). These initiatives are interesting to be followed up.

8.4   THE SMEs

The SMEs themselves should not act only reactively, but must proactively anticipate the developments. They can do so by

- ► Introducing e-learning adapted to the readiness of the learner. Awareness raising is therefore needed within the enterprise;

- ► Creating a learning culture within the enterprise, that is based on a systematic learning needs analysis;

- ► Change the enterprise into a learning organisation (parenthood with larger companies that may guide them can be helpful for the purpose);

- ► Train their trainers in e-competences and coaching skills and attitudes;

- ► Start networking with other companies, providers and catalysts of training (e.g. sectoral organisations, Chambers of Commerce). This way, the e-learning offered to their employees would take into account the specificities of their enterprise (its e-resources, its time constraints, its specific needs), they would enable the building of learning communities, create a learner group that surpasses the critical mass, make e-learning cost-effectiveness more attractive for providers as well as users;

- ► Empower their employees to become mature learners and take responsibility for their own learning, in co-decision with management, trainers and coaches. Such empowerment can be a very powerful motivation for the learner and helps the employee to act as a co-instructor towards his/her peers;

- ► Stimulate to use the work environment and its e-tools/resources as a source for informal learning, by recognising its importance during job evaluation and eventual resulting promotion;

- ► Customise the e-resources and associated services to make them more fit for formal and informal training as well as knowledge sharing and management;

- ► Systematically evaluate the learning that takes place in the enterprise.

8.5   CONCLUSIONS

In our "knowledge society", continuing education is a major need that has been stressed by the European Commission and most European countries. E-learning is a major delivery channel for knowledge, thanks to its availability, independent of time and geographical constraints. Most corporate companies have integrated e-learning in their training portfolio and promote their career management and development programmes as a major incentive for employees, but SMEs are lagging behind.

SMEs are rarely early adopters of technology, with the exception of some markets as IT and R&D. To them, e-learning represents a risk they cannot take today: the cost is high, and little benchmarking data is available on the subject. The e-learning offer is abundant, but not in all European languages, the way to e-learning needs to be made easy and clear.

Some recommendations for the take-up of e-learning in SMEs have been proposed in this chapter and throughout the report: though they are varied and can sometimes look contradictory, they focus on the same challenges:

► Help SME owners and the organisations that work with them understand how learning can help their organisations and where e-learning is the most appropriate solution;

► Provide access to practical management information on e-learning, the required investments and the expected return;

► Provide an easy access to e-learning content by installing a one-stop shop for learning and setting up networks and communities to reduce its cost;

► Work closely with SMEs, in their own culture and language, offer them coaching services for the definition of their needs and the solutions that are available to them.