

IMPROVING E-LEARNING 2.0-BASED TRAINING STRATEGIES OF SMEs THROUGH COMMUNITIES OF PRACTICE

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ABSTRACT

Research carried out in different European and national projects shows that e-learning is used still mainly in big companies while most SMEs have not sufficient knowledge and resources to develop and implement sustainable training strategies, based on new media and knowledge management for their own organisation despite their dire need to innovate. This paper presents the activities of the EU project SIMPEL (SIMPEL stands for SME: Improving Practice in e-learning) to involve SMEs and e-learning experts in a community of practice to share knowledge and to develop participative training strategies based on e-learning 2.0.

KEY WORDS

e-learning, e-training, SME, Web 2.0, communities of practice

1. Introduction

The change processes characterised by globalisation, technical revolution, the expansion of the EU force small and medium-sized companies (SMEs) which represent 99% of the European companies, to find new innovative ways of doing business, in order to face the growing pressure for improved performance.

A crucial success factor for them is the ability to expand the capabilities of their human resources. In today's business reality, global teams working in virtual spaces develop and update their competences through the use of new media and methods like e-learning. The SMEs in Europe, their number recently increased dramatically through the expansion of EU, are in their majority not ready to meet these challenges. For far too long, it was assumed that managers of SMEs would immediately recognise the problem of meeting adequately the continuous training needs of their staff and the potential role of e-learning in meeting these needs.

But results of studies show that less than 25% of SMEs staff participates in vocational training courses and less than 60% of employers provide any type of training for their staff.

Research carried out in different European and national projects, such as ARIEL, coordinated by the first mentioned author (see www.ariel-eu.net), shows that e-learning has been adopted mainly in big companies and

that, except the IT- and some few other sectors, there is not much e-learning applied in SMEs; as far as e-learning does take place in SMEs, it is mostly of rather poor quality [1], [2], [3].

Many SMEs have no knowledge and resources to develop and implement sustainable training strategies based on new media and knowledge processes for their own organisation and need powerful ways to innovate. Particularly the combination of e-learning with Web 2.0 (e-learning 2.0) offers many promising avenues to meet current expectations on corporate learning by delivering enterprise services over the web and for improving collaboration, communication and effectiveness of work. Therefore, this might also be very useful for SMEs. "The challenge will not be in how to learn, but in how to use learning to create something more, to communicate." [4].

A community of practice (CoP) may provide a useful perspective on learning and knowledge creation and management for SMEs. In a CoP a group of people come together, who share a concern, a set of problems, expertise and/or a passion for a topic. "Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavour."

CoPs trace their roots to constructivism [5] involving open-ended questions, learning in social and physical contexts of real-world problems, using collaboration and cognitive tools.

Information and communication technologies (ICT) like the Internet support virtual communities of practice (VCoPs). These can be improved by the facilities of Web 2.0 and the principle of connectivism [6] – see Table 1.

Researchers and practitioners in many fields find CoPs useful and a growing number of people and organisations in various sectors (see part 3) are now focussing on them as a key to improve their performance.

After a presentation of the training situation in European SMEs, their needs and the use of e-learning and Web 2.0 in the next part of this paper, the following section looks at the characteristics of CoPs, particularly of VCoPs. The final section shows ongoing developments in the European project SIMPEL [7] to involve SMEs and e-learning experts in a CoP, sharing knowledge and developing participative training strategies based on e-learning 2.0.

2. Training Strategies in European SMEs: The Use of e-Learning 2.0

To reach the ambitious goal of the Lisbon strategy that by 2010 the EU should "... become the most competitive and dynamic knowledge-based economy in the world..." requires inter alia active support for the development and adoption of e-learning throughout Europe [8], at all levels of education and training, including SMEs. On account of its flexibility and facility of access e-learning is rightly seen as an enabler of lifelong learning. E-learning has a tremendous and far-reaching potential to transform how and when employees learn. Ultimately, e-learning is a catalyst of change and integration, unleashing processes affecting life and work as a whole. It is to be seen as a chance for SMEs to improve their business and to integrate into the European market, too.

Some advantages of e-learning for SMEs (Fig.1) were identified in analyses carried out in European projects like ARIEL (www.ariel-eu.net, [2], [3]) and also by various surveys such as those commissioned by CEDEFOP in Austria and in Italy [9].

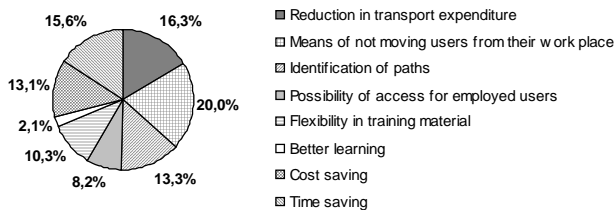


Figure 1. The main advantages that organisations have from e-learning [10]

e-learning 2.0 is based on tools that combine creation of content easily with web delivery and collaboration. Thus it has a clear focus on community [4] and supports naturally informal learning in SMEs for individuals and groups by simplifying tasks like research, working and learning in groups. For example writing in public blogs forces the writer to think about the issues in question. In the communities, input from peers and help from a network of individuals will be received.

E-learning 2.0 also impacts on formal learning settings and these are particularly useful for collaborative learning.

Karrer's concept of e-learning 2.0 (<http://www.learningcircuits.org/2007/0707karrer.html>) is based on delivery of content in small pieces over time as part of a large process, which corresponds to the needs of SME staff for faster learning in the context of their work.

Many European SMEs use digital media including CD-ROMs, the Internet and Intranets for accessing technical manuals or for web searches. But learning takes place only, if information is applied in such a way as to develop new mental models and schemas, explicit or tacit, which have to be made explicit and shared. CD-ROMs, the web, etc. are useful and convenient ways of storing and retrieving information but if this information is not

transformed and applied to specific contexts it cannot be seen either as learning or knowledge development.

How SMEs use the Internet is shown in Figure 2.

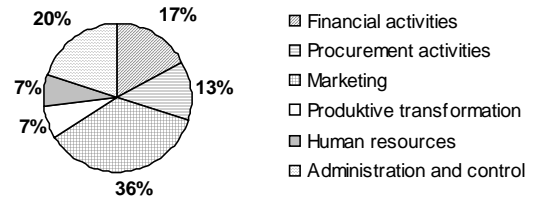


Figure 2. Percentage distribution of the use of the Internet among the activities of a company [10]

From this it is obvious, that the Internet is used in SMEs predominantly for advertising of their products (particularly through web sites) and only 7% for human resources.

The most significant key factors negatively impacting e-learning and knowledge development in SMEs as identified in various studies are:

- Training culture within the SMEs – often this is dependent on a specific trainer and conventional training methods; skills needed for a more independent approach and the use of new media for learning are missing. Face-to-face activities such as conferences, workshops, lectures and seminars are preferred.
- Lack of appropriate software and contents – the major part of commercial e-learning software is modelled on the requirements of big enterprise or higher education. Software development is mostly centred on big inclusive e-learning platforms, usually consisting of a basic product and additional modules, which is costly and technologically demanding to install and maintain. Tailor-made contents are expensive, standardised contents largely inappropriate for SMEs.
- The attitude of managers – they often have not enough knowledge or are not convinced of the effectiveness of e-learning. Instead they put their trust in classroom-based training. Many of them prefer "learning from peers".
- Lack of time and lack of access to sufficient bandwidth to ensure high quality training, especially user-friendly tools and quality content.
- The availability and access to ICT. This is a key barrier in sectors with a low level of computer penetration. Many computers in the workplace are not linked to the Internet.
- Lack of knowledge flows in the company corresponding to its business and staff work tasks.
- Lack of immediate context of applying the learning for example by incorporating new learning in a personal knowledge schema or portfolio..
- Lack of knowledge management in the company.
- Lack of knowledge of agreements and associations that could be useful both in resisting the power of

intermediaries and large competitors as well as adopting policies of communication.

In the following we present communities of practice as a suitable environment for SMEs for sharing knowledge among professionals and “to learn as you go”, that means interest in practical examples and best practices.

3. Communities of Practice and Knowledge Management

Communities of practice (CoPs) [11] can become a powerful way for SMEs to innovate and develop new capabilities.

Some main characteristics of CoPs are the following:

- a shared domain of interest of its members, their commitment to this domain and a shared competence that distinguishes members from other people,
- common ideas, joint activities. Members engage in pursuing their interest for the domain and build relationships that enable them to learn from each other,
- common practice because members of a community are practitioners with different levels of expertise. They develop a shared repertoire of resources e.g. experiences, tools, ways to solve problems, a knowledge base of best practices.

So CoPs consist of voluntary members who share knowledge, ideas and interests, mentoring each other; they offer new opportunities for knowledge management and learning processes by using new forms of interaction between teamwork and loose contact between the actors. CoPs show differences to theme-specific cooperation and/or temporary networks. They are lasting for a longer period. Its members are ready to share knowledge and to build up knowledge together and to deal with strategic fields of knowledge in business. In comparison with technical solutions for knowledge management, CoPs mark a change from “managing knowledge” to “enabling knowledge”.

Four major types of CoPs can be identified:

- Innovation communities which work out new solutions,
- Helping communities that solve problems,
- Best-practice communities that disseminate and elaborate best practice in a given field or on a given topic,
- Knowledge-stewarding communities that connect people and organise information transfer.

Possible topics for CoPs are

- Technologies, processes (quality assurance, internationalisation),
- Methods (job design, “learning to learn”),
- Products,
- Social relevant topics (ethics).

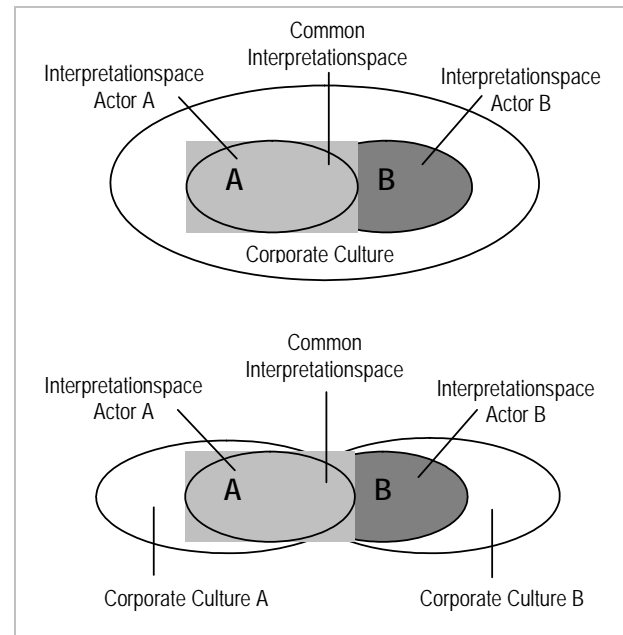


Figure 3. Interpretation models for creating an enabling context within a CoP: A=within a company, B=cross-companies

Figure 3 shows the creation of an “enabling context” in CoPs.

A growing number of associations are seeking such ways to focus on learning through reflection on practice because they need to offer high-value learning activities.

Practical applications of CoPs are in business, organisational design, government, education, social sector, and international projects.

In business, for example, people look for innovative ways to manage knowledge strategically. The “traditional” tools and methods of information and communication in managing knowledge in business have not had the desired results. The social oriented approach of CoPs, focussed on people who learn from each other, may be a better way towards developing strategic capabilities of organisations.

Interesting research on this last aspect has been carried out in the field of organisational learning, in attempts to explain how personal knowledge and skills become shared in communities of practice or organisations, and how new knowledge is developed. Nonaka and Konno (1998) [12] have described a knowledge development cycle showing how tacit or implicit knowledge can be made explicit in learning processes. This work and others pointed out, that knowledge developed in communities of practice are important for understanding different types of knowledge and how knowledge develops in different contexts. These distinctions are important when processes of learning and knowledge development in SMEs are analysed.

Important is also the design of CoPs. Some principles of “designing for aliveness”, which can guide organisations wishing to start a CoP are explained here. These we have followed in our current project SIMPEL (see part 4):

- Design for evolution e.g. design elements should be combined in a way that they may act as catalysts for a natural evolution to a life-long learning oriented CoP,
- Keep an open dialog between inside and outside perspectives of the CoP because the last one can help community members to see new possibilities and act effectively,
- Consider different levels of participation for the members of the CoP (leadership roles, core active group, rare participants, etc.),
- Develop public and private community spaces,
- Create a rhythm and rules for the community.

Internet-technologies extend the interactions within communities of practice beyond geographical limitations and make possible the building of virtual CoPs (VCoP). These communities free their members from constraints of time and space.

Sometimes a transition takes place from a face-to-face to a virtual CoP, in order to reach more continuous levels of information sharing. In this case it is important to choose adequate software to support the VCoP.

The current generation of web-based technology (Web 2.0), which is not mainly a technical revolution but first of all a social one, has a vast potential to create prospering environments for emerging communities of practice. Social software lends itself very well for support of activities within a community and for staff of SMEs to collaborate. It is based on the idea of connectivism developed by Siemens (2005) where learning takes place in distributed networks of people, content and services are adaptable and responsive for example to specific needs and goals of SMEs.

Table 1
Learning Theories
Source:

http://www.elearnspace.org/presentations/connectivism_u_trecht.ppt

Theory	Learning model	Learning resides
Behaviourism	“Black box”	Behaviour demonstration
Cognitivism	Computer-model	Processed inn the mind of the individual
Constructivism	Creation or construction of meaning (Building)	Constructed in the mind of the individual –
Connectivism	Networks and ecologies, connections	Distributed, in network

The lack of face-to-face contact within a community of practice can often be an advantage, because it helps to suppress traditional group norm behaviour. On the other hand, it remains open if a community of practice where face-to-face contact is entirely excluded can be sustained over a long period. In our project we are going to support both virtual and face-to-face contacts in the community of practice under development.

Despite the great potential, there are also limitations of current technologies in relation to virtual communities of practice: because virtual community infrastructure can be

set up across cultures via www, cultural and language differences can hinder the desired fluidity of activities in communities of practice [13].

In the following section, we present our current European project SIMPEL, where communities of practice and business-oriented models of e-learning are under development.

4. Example

SIMPEL is a current European project financed under the European eLearning Initiative. Comparative analysis of e-learning projects have been completed by SIMPEL partners and e-learning models have been discussed in seminars with managers of SMEs, consultants, e-learning experts in all project partner countries (Germany, The Netherlands, Hungary, Ireland, Italy).

A CoP for the development of sustainable training strategies and models by using e-learning was initiated [14], following the workshops and seminars to continue the discussion between project members and external experts. Comparative analysis of project results undertaken by the SIMPEL partners and our results of national seminars show the following aspects, which are necessary in developing a strategy for implementing e-learning in SMEs, if it is to be sustainable:

1. *Identification of needs and objectives of training:* While this is a truism for most training practitioners, SMEs very often hit their first serious barrier here. Owners of SMEs should be encouraged and helped to carry out a training analysis in the wider context of business aims and longer term business planning, before the training process begins. Sometimes a previous step to the needs analysis is necessary to sensitise clients for e-learning, to prepare the market, to train multipliers.
2. *Engaging employees:* Unlike classroom based learning e-learning is not a familiar process to novices, it is most successfully introduced when linked very closely to day-to-day tasks.
3. *Time factors and form of training used:* SME staffs are often guided by daily business pressures and devote little time to learning activities; so informal, on-the-job, forms of learning often taking place through sharing experience with colleagues about job tasks and these should be combined with e-learning.
4. *Courses/Learning Content:* The most important focus for training courses in SMEs should be the “core business” of the company and should take into account the competences staff need for their work tasks, norms and procedures etc. to help the given SME to survive/integrate into their market; in addition, key competences are important such as management skills, accounting and language skills
5. *Tutor and technical support for e-learning and integration with more traditional forms of learning:* The evidence suggests that the learning experience is better and completion rates are greater when tutor and technical support is available either face to face, on-line or over the telephone.

6. *Learning infrastructures:* space, time, environment, etc. to support e-learning have to be created within the organisation.
7. *Organisational perspective, transfer of knowledge:* community of practice, learning groups, partnerships supported by learning platforms and special connections have to be developed, in order to strengthen dialog and knowledge transfer.
8. *Economical aspects:* A cost-benefit analysis of the e-learning strategy has to be part of the business plan.
9. *Quality and (self) evaluation criteria:* Quality criteria have to be established. Evaluation tools for efficiency and results of the training efforts should be developed that can be easily handled because SMEs rarely evaluate training and lack the staff and know how to carry it out.

In SIMPEL an “optimal model” for the introduction of e-learning in an SME has been developed, It shows the structure of a sustainable e-learning strategy and describes the steps for the introduction of e-learning in the SME. Its conception, execution and evaluation ought to be an integral part of the SME’s whole vocational training strategy.

The phases of such a model are the following:

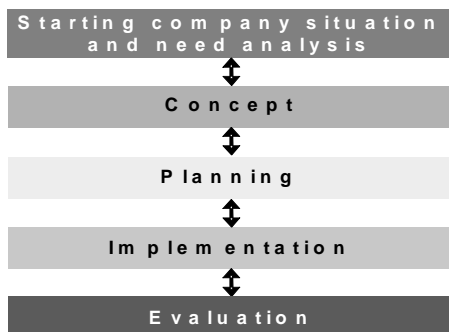


Figure 4. A vocational training model

In other countries like Romania, which have no partner in SIMPEL, the cooperation with the SIMPEL team is sought. Romanian consultants and SMEs are interested in using the project results like the “optimal model” and the best practices identified by the SIMPEL team and to adapt them to their specific national SME requirements.

In the SIMPEL seminars in Germany some typical mistakes in different phases of an e-Learning strategy, ways to avoid them and “best practices” have been discussed.

Some “best practices” of business models for E-learning producers identified in SIMPEL are:

- Cooperation with vocational education suppliers
- Subscription based service
- Refining of traditional courses
- Content Syndication Model
- Franchising of e-Learning

The objective of the SIMPEL-community is to promote such models of good practice and to attract staff who are engaged in support, training, design/development, use, consulting and policy formulation concerning e-learning in SMEs in the European Union, starting with the countries, where SIMPEL partners are active (<http://www.simpel-net.eu>).

As well as combining the knowledge resources that are already in existence in the institutions participating in the CoP, the goal is to continue producing new good-practice e-learning resources for the SMEs.

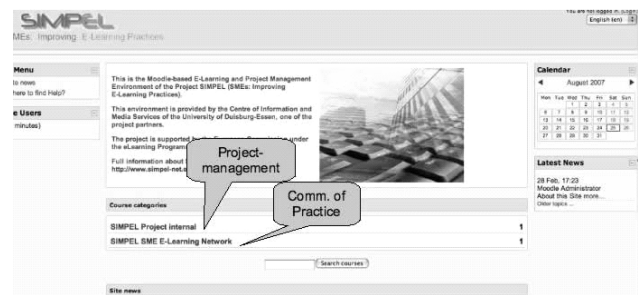


Figure 5. Using Moodle for SIMPEL

The SIMPEL community will provide professional support for SMEs and SME consultants in using e-learning. Access to documents and discussions are supported by a Moodle-based platform [15] because of the accessibility and flexibility of this tool (Fig. 4). The choice of Moodle was based, first, on an analysis of some open source VLEs on the criteria of sustainability and viability (that influence the costs for adoption and maintenance of the system) and the pedagogical rationale of the environment. Secondly, we decided to use Moodle because some of the partners already had good experience and competence with this environment.

Another method we used in the project ARIEL, the precursor of SIMPEL, is scenario building [16], [17], [14]. Scenarios were also carried over into SIMPEL workshops with SMEs managers, staff and consultants to work through variants of adopting Web 2.0 and e-learning tools as part of their daily work. Web 2.0 can be effectively used for many business activities: management, marketing, etc. Again, blogs can be used to distribute information on services/products and for image building by showing off the specific know-how of the company. Wikis or the comment-function of blogs open vast possibilities to involve customers and prospective customers in discussion.

Starting from the basis here described, SIMPEL continues its efforts to forge close associations with other vocational education communities and to disseminate the results of SIMPEL to interested parties in European countries, which are not at present involved through a project partner.

5. Conclusion

Despite setbacks in the past, mostly caused by exaggerated expectations and inappropriate approaches

and products, e-learning is still considered as a key for the solution of the HR and training problems of European SMEs. To work towards sustainable learning strategies, however, e-learning has to be embedded in intelligent and adequate “mixtures” of different learning methods and technologies. Also, the blending of information, communication and learning on the one hand and learning and knowledge-management on the other need to be taken into account, in order to avoid to look at learning and e-learning too much in isolation. “Learning for tomorrow” requires fast transfer of the right kind of knowledge.. Underpinning the right mix of approaches and technologies are the “e-competences” [18], beginning with computer literacy and including the ability to supplement know-how with know-who and know-where. We are confident, e-learning 2.0 and learning in CoPs will make a positive contribution to rooting and spreading strategic approaches to learning in SMEs. We are working towards this in SIMPEL and the wider e-learning networks.

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