Supporting Companies through ICT-based Learning and Mentoring Partnerships

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Abstract: Small and medium sized companies (SMEs) contribute to more on half of the European value-added by business and are primarily responsible for economic growth. Many of them have difficulties in facing todays challenges also due to technological, economic and financial changes and skill shortage. Mentoring approaches together with suitable learning methods can be organised to address aspects like knowledge gaps and shortage skills. This article focuses on different aspects of learning and mentoring. in SMEs. One of the examples is the project Net Knowing 2.0 (http://www.netknowing.com/) aiming to help SMEs to turn their daily work into a source of corporate learning for all their employees and to support KT by efficient use of informal learning and ICT and introducing a mentoring approach.

Keywords: economic growth, informal learning, mentoring approaches.

1. INTRODUCTION

In Europe 99% of companies are small and medium ones (SMEs); they contribute to more on half of the European value-added by business, are the back-bone of the European economy and are primarily responsible for economic growth (http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance-review/index_en.htm). But many of them difficulties in facing todays challenges also due to technological, economic and financial changes and skill shortage; more knowledge, flexibility referring to a fast familiarization with new working environments and technologies as well as approaches to help and retain staff. The knowledge and human resources of SMEs are very limited so they need help to develop approaches which promote the use of informal learning and ICT for learning and knowledge transfer (KT) (Duguid, 2005) and also support retention of the staff (Rousseau, 2004). Many SMEs recognise that it is often difficult to recruit and retain personal with the necessary knowledge to solve skill shortage problems.

Informal learning accounts for over 75% of the learning taking place in organizations today (Atwell, 2003; Cross, 2006; Hamburg, 2012a). e-Learning through its flexibility and facility of access is an enabler of lifelong learning. One solution for surviving/being competitive for the SMEs is to use strategies combining informal learning with e-Learning based on new media like Web 2.0 (O'Reilly, 2005), embedded into their business and work processes, responding not only to requirements of work/career situations but also to employees interests and supporting collaboration, knowledge sharing and performance support. Social media based on Web 2.0, i.e. media for social interaction offer the premises for a fast knowledge acquisition and support transforming learning in a continuous „lifelong process".

Mentoring approaches together with suitable learning methods (Hall, 2009; Hamburg 2012c) can be organised to address aspects like knowledge gaps and shortage skills (Richert, 2006). Many organisations establish mentorships for staff when new ones are hired or as a part of leadership development. Often individuals seek mentors to help them in their career. Mentoring is commonly used to describe a KT and learning process in which an existing member of staff guides newcomers or less-experienced people in a task to develop professional skills, attitudes and competencies. Mentoring is a complex process involving not just guidance and suggestion, but also the development of autonomous skills, judgments, personal and professional master ship, expertise, trust and the development of self-confidence over the time (Edelkraut, 2011). Mentoring can be established for a number of reasons (Hamburg 2012). The nature of mentoring is "friendly", "collegially". Mentoring also has to operate within professional and ethical frameworks. If it is possible it should remain voluntary and subject to mutual agreement. Mentoring is not just about solving problems. However, problems often underline a decision to seek mentoring.

On the job (or workplace) mentoring (Kram, 1985; Ragins, 2007; Hamburg, 2012c) means a learning partnership between employees for sharing information, transfer of individual and institutional knowledge and insight to a particular occupation, profession, and organisation. It includes the accompanying career advancement and natural support for a selected employee (mentee) i.e. through an experienced colleague (mentor), in order to achieve some present goals of mutual benefit for the mentors, mentees and organisation. This kind of mentoring as a combination of a guided KT and informal learning process is a powerful experience, but the problem is that it is often only accessible

to a few numbers of employees and its benefits are limited only to those few who fulfil the conditions to participate. Later we will present also formal or structured mentoring which takes mentoring to a next level and expands its advantages and corporate value beyond the mentor-mentee relation.

The mentors consider the mentees' resources and transfer their own workplace related knowledge and experience to the mentees in order to support them continuously in their professional environment and development. This mutual harmonisation also includes aspects of thought, social integration in the organisation and optimal professional resources utilisation of the mentees and their workplace fellows.

This article focuses on different aspects of learning and mentoring.

One of the examples is the project Net Knowing 2.0 (http://www.netknowing.com/) aiming to help SMEs to turn their daily work into a source of corporate learning for all their employees and to support KT by efficient use of informal learning and ICT and introducing a mentoring approach.

2. INFORMAL LEARNING, E-LEARNING AND COMMUNITIES

Informal learning describes a lifelong process whereby individuals acquire attitudes, values, skills and knowledge from daily experience and the educational influences and resources in his or her environment, from family and neighbours, from work and play, from the market place, the library and the mass media (Wikipedia, 2010).

Jay Cross is "a champion of informal learning and systems thinking" (www.jaycross.com/). Jay's calling is to help people to improve their performance on the job and their satisfaction in life. His philosophies on the power of informal learning and network have fundamentally changed the world of learning in organizations.

Companies can use informal learning combined with e-Learning to:
• increase sales by making product knowledge instantly searchable
• improve knowledge worker productivity
• transform an organization from near-bankruptcy to record profits
• generate fresh ideas and increase innovation
• reduce stress, absenteeism, and health care costs
• invest development resources where they will have the most impact
• increase professionalism and professional growth
• cut costs and improve responsiveness with self-service learning.

One approach which seems useful in the context of improving learning and cooperation within SMEs and with other experts is that of Communities of Practice (CoPs)

(Wenger, 2002). CoPs are made up of voluntary members who share knowledge, ideas and interests and who act as mentors to each other. They offer new opportunities for knowledge management and learning processes by using new forms of interaction between team work and loose contact between the actors (Johnson, 2008) particularly when they are supported by Web-based environments

Social media based on Web 2.0 services i.e. media for social interaction offer the premises for a fast knowledge acquisition and support transforming learning in a continuous „life long process" also within the communities.

Social media can be used for supporting CoPs (Hamburg, 2010) and can take many different forms, including Internet forums, weblogs, social blogs, micro blogging, wikis, podcasts, photographs or pictures, video, rating and social bookmarking (Stocker, 2008). By applying a set of theories in the field of media research (social presence, media richness) and social processes (self-presentation, self-disclosure) Kaplan and Haenlein (2009) created a classification scheme for different social media types in their Business Horizons article. According to Kaplan and Haenlein there are six different types of social media: collaborative projects, blogs and micro blogs, content communities, social networking sites, virtual game worlds, and virtual communities. Technologies include: blogs, picture-sharing, wall-postings, email, instant messaging, music-sharing, crowd sourcing, and voice over IP, to name a few. Many of these social media services can be integrated via social network aggregation platforms.

The technical skills needed to use social media are rather low. Another important characteristic of such applications and "spaces" is the decreasing differences such as the one between teachers and taught, between formal and informal learning processes, between education and knowledge acquisition/management. A low-cost and easy access virtual room to accommodate formal and informal learning practices, group collaboration and the gathering and exchanging of learning materials might be realized in an e-Learning environment based on the Social media tool TikiWiki CMS Groupware.

The work in progress about the community developed within the project NetKnowing 2.0,supporting also mentoring, by using social media tool TikiWiki (http://cop.netknowing.eu) will be shortly described. TikiWiki CMS Groupware is a free and open source wiki-based, content management system written primarily in PHP and distributed under the GNU Lesser General Public License (LGPL) license. The decision to use TikiWiki was taken after an analysis of some open source tools.

The CoP users can get information about the project about web 2.0 and informal learning. If they register in the CoP, they can use Community services like Discussion forum, File Gallery and particularly the Community Directory with addresses, competences and interests of community members.
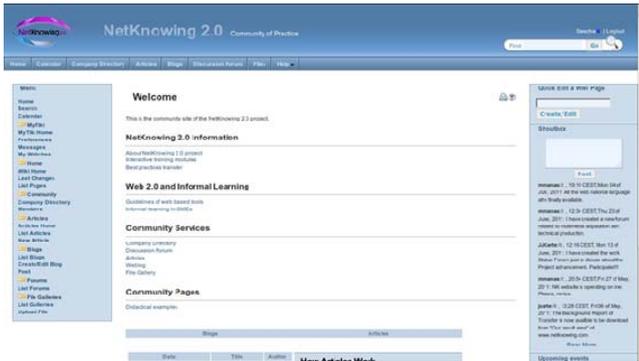
Figure 1: CoP of the project Net Knowing 2.0.
Source IAT: http://cop.netknowing.eu

Two main products of Net Knowing 2.0 are a self-learning basic course focused on benefits of informal learning for SMEs and how to learn using Web 2.0, Social Networks and Net Collaborating Practices and an e-Learning advanced course focused on the implementation of Web 2.0 based informal learning and networking strategies in SMEs and other organizations (Beer, 2008; Engert, 2011; Hamburg 2011) (http://www.nk2.uvedev.es).

The learners of the basic course can use a special developed forum within the community http://cop.netknowing.eu.

In the next Figure is presented a screen shot from the basic module.

Figure 2: Screen shoots basic module.
Source: www.netknowing.com.

The advanced course is based on a blended concept by using face-to-face trained driven sessions and e-Learning. Both trainers and trainees can use the CoP to discuss about the modules, to communicate and solve exercises together. The training materials are available to be downloaded for the trainees as well as discussion forums. The trainers can build own courses by using the training materials and a lot of exercises stored in a special virtual room within the CoP. An introduction into the functionality of the community for its users is provided as well as a didactical guide for the trainers

including different methods like tests, storytelling, and collaborative working by using the community which can be used during the training of SME staff. Tests of the training courses in SMEs from partner countries as well as improvements will be carried out.

3. MENTORING

Mentoring has been used in Europe for a long time. In the IBB2 project (www.lebenshilfe-guv/ibb2) we use the approach of mentoring on the job for people with disabilities where the mentors are companies' employees. The advantages are obvious. The companies' employees know the work processes, which knowledge is needed for their efficiency and which the companies' knowledge resources are. They are used to the working environment and can estimate the hazards and situations which could be challenges to mentees or their fellows at the workplace. A further advantage is the development of a situation of mutual trust between the colleagues, which later is the basis in the daily work. The following figure shows an example of an efficient mentoring partnership including also KT which we use in our projects.
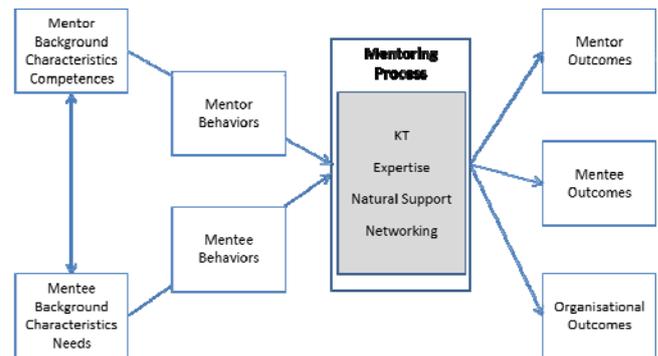
Figure 3: An efficient mentoring process
Source: Giancola [7], IAT.

Experience and expertise is necessary in the mentoring as well as being moderately extraverted. In the relation with the mentee, motivation and responsively is required. The mentee needs to be ready for professional development, open to learn and accept feedback. Time and initiative are necessary too.

The company can have benefits from mentoring by a quick introduction of the mentee into formal and informal company structures and demands, facilitating a deliberate, systematic and smooth transfer of technical or internal knowledge, opportunities to shape the workforce of the future in an international, deliberate way to meet company strategic goals and objectives, training of social competence of the mentee and the mentor.

Mentees have the opportunity:

• to meet with a trusted person to enter into a work place quickly and to cope with initial problems to discuss and resolve emerging job problems of genuine nature and in

relation to the individual needs,

- to learn setting realistic goals and achieving them,
- to acquire new skills and enhance their skills and thus their future career opportunities and prospects in the future through the KT from the mentor,
- to build relationships or interactions allowing them to secure, maintain and advance in the job choosing a way that corresponds to the work routines and social actions of other employees,
- to receive (and contribute to) natural support, meaning: booming linked to existing social supports in the work environment.

In connection to the workplace fellows (team), the mentor has to inform and actively involve them with regard to the mentee and the various aspects of the mentoring process and its goals prior to the arrival of a mentee and constantly thereafter. Apart from knowledge transfer, communication with the team must include building solidarity, empathy and preparedness to actively take over responsibilities.

In the following, we present the two types of mentoring, informal and formal ones:

Informal mentoring aspects:

• Goals of the relationship are not completely specified
• Outcomes cannot be measured in total
• The process of KT cannot be explicitly described and it is based on the ability and willing for this process
• Access is limited and can be exclusive
• Mentors and mentees are often selected on the basis of personal chemistry, which means an initial connection or attraction between them
• Mentoring lasts a long time
• The organisation benefits indirectly, as the focus is exclusively on the mentee.

Formal mentoring aspects:
• Goals are established from the beginning by the organisation, mentors and mentees
• Outcomes are measured
• Knowledge which has to be transferred is known at the beginning
• Access is open to all who meet the criteria established by the organisation for the corresponding mentoring program
• Mentors and mentees are paired based on compatibility
• Organisation and employees can benefit directly.

Mentors need to be strongly focused, principled and able to develop empathy with the perspectives of others. To be a mentor especially requires having:

A. Social Competences (particularly interest, motivation, awareness, (verbal and non-verbal) communication, aptitude, empathy and engagement skills).

B. Professional Competences (responsibility standards in knowledge and skill).

C. Operating Competences according to ethical and professional standards and to know the boundaries when engaging with mentees.

4. ICT SUPPORT OF MENTORING

An ICT-based approach, a web-based one (WBMCS) allows mentors and mentees to learn on-line, to communicate and collaborate, and to transfer and share knowledge. Social media, particularly based on Web 2.0, can be used to develop such systems.

A low-cost and easy access virtual room to accommodate formal and informal learning practices, group collaboration and the gathering and exchanging of learning materials could be realised in an e-Learning environment based on the social media tool TikiWiki CMS Groupware.

Web-based supported mentoring has a number of benefits including:

- Provision of a 24 hour access of saved knowledge, for training material and communication
- Accessible anywhere with internet availability
- Provision of a platform even if face-to-face communication is not possible
- Learning assessment and progress monitoring of the mentor-mentee relationship.

One important activity for the successful management of knowledge transfer within the mentoring process supported by a CoP is to define common goals for this process in advance. The goals have to be identified and agreed by all members. Other aspects are trust and the depth of relationships. Face-to-face interaction and socialisation processes consolidate the relations between members and group membership. Trust is important for knowledge sharing and development in a virtual team or virtual CoP and this develops primarily through face-to-face interactions. So we started the mentoring in our next described projects with face-to-face sessions.

An ICT supporting mentoring approach accounts for the varying learning abilities of students and overcomes the limitations in time or space etc. of traditional training environments which are restricted to rules in order to adequately fine tune a group to pre-defined criteria. The WBMCS, when adequately designed, can reduce the limitations of the classroom and allow the learner to work at his or her own space, speed and depth with structured support from both, the educators and the other learners.

However, for quality reasons and outcome value, traditional elements of monitoring/mentoring have to be affiliated. Experience from other projects demonstrates the need for a constant presence of experienced and qualified mentors in the WBMCS. A trust relationship has to be established online, if the WBMCS will be used in the project on a regular basis by the mentors and mentees. The WBMCS should support the motivation and retain students in the learning process. It should be used in a context so that personal issues, which are not suitable for the online environment, do not become accessible for all. The WBMCS should support real mentoring and not be understood as a supervisory tool.

5. EXAMPLES OF MENTORING FOR SMES

The goal of mentoring staff from SMEs is to improve job performance by increasing employee's capability to manage their own performance emphasing on trust, experience, and supervision, to facilitate performance and KT in the organisation, to support retention and leadership development. The mentoring approach is not used within SMEs in Germany, so a workshop has been organised to discuss with representtatives of SMEs some tactics for implementing a mentoring program in their companies. One possible approach is that experienced at the Virtual Academy Brandenburg. The coaches and mentors are external persons who should support the sustainable development and advancement of strategic competences of SMEs through informal and organizational learning. Potential learning consultants can be trained to act as mentors. HAMBURG CONSULTING, Offenbach, decided to try this concept and also to use a mentor from the company for a mentee with disabilities who will work for the company. In this case the KT will be very beneficial for the mentee in the own career but and also for the mentor. The mentor could have same benefits from the mentee and at the same time gains leadership skills by the act of mentoring. It is supposed that both individuals developed skills within this sponsored KT process and the company is providing a way for KT before an employee's retires or leaves the organisation.

At the workshop, SMEs from Germany proposed a route map for the successful deployment of a coaching and mentoring program within the specific context of a SME environment:

- Putting the specific working environment into context.
- Researching the role played by the organisational culture or "climate" in the development, maintenance and success of the SME.
- Determining real qualification needs of the staff before starting the mentoring process.
- Determining the knowledge gaps and which of them can be minimised by a mentoring system.
- Demonstrating that a mentoring intervention has real benefits in this context and not being bureaucratic.
- Being a process based on trust, experience, and supervision and informal learning.
- Identifying barriers to effective mentoring/coaching.
- Determining issues that need to be incorporated within the mentoring/coaching intervention, if it is to be successful.
- Qualifying coaches and mentors for different forms of working and learning.

If necessary, using big companies for delivering mentors (learning consultants).

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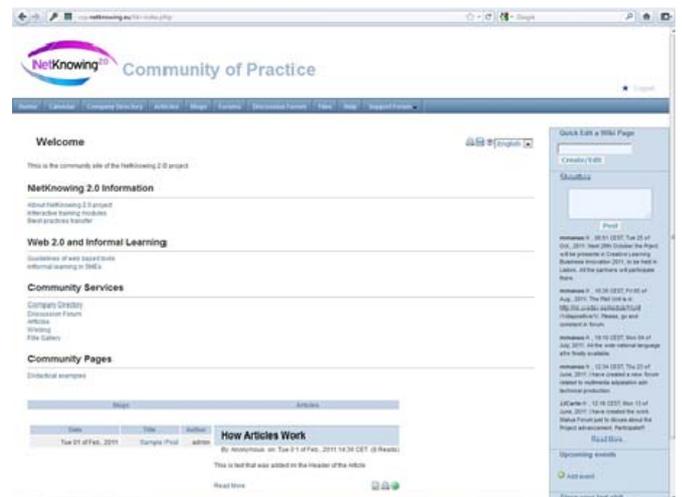
Figure 4: Net Knowing 2.0 WBMCS
Source: http://cop.netknowing.eu

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