



COLLABORATIVE LEARNING AND KNOWLEDGE MANAGEMENT

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Introduction

Education and knowledge management within a company are the most important activities to foster employees' qualifications and to encourage them in their individual professional development. By utilizing specific processes it is possible to mentor their progress and to promote them to a position in which they can use their abilities to their full extent. Overall, this leads to a more efficient working environment, which paves the way for further improvements in regard to the working process as well as to the workers themselves. When it comes to learning, finding the most efficient way to learn for each individual is the key. In most cases this is informal learning as that is the way people learn the most (Weber et al., 2008). In consequence, enterprises should envision an educational roadmap that incorporates informal learning for their employees not only on an individual level but also as a social activity throughout the entire structure of the enterprise.

To succeed in such a paradigm shift, several actions have to be taken. It is imperative to create and maintain structures and processes that enable HR managers to mentor and steer the overall development within the entire company. This can be realized via a reasonable mix of several e-learning and knowledge management ideas and theories. By choosing suitable concepts and link them with an efficient management, it is possible to create a collaborative learning and knowledge management system. In return, this environment facilitates middle- and long-term improvements of the entire company. Two conceptual ideas suitable for such an endeavour are self-learning organisational management on the one hand and Management of Collaboration on the other hand.

Knowledge management and the different types of learning

Knowledge management is concerned with the efficient preservation and distribution of knowledge within a company. Its main goal is the cultivation and exploitation of knowledge (Handzic, 2005). It deals with how to improve performance and enables innovation as well as sharing experiences. This leads, among other things, to shorter innovation cycles and allows employees to grasp the wider picture of their work. This, in turn, enables the workforce to work more efficiently and to adopt new skills and knowledge quickly, which can grant a competitive advantage.

There are three different **types of learning**: i) formal learning, ii) non-formal learning, and iii) informal learning (Merriam et al., 2012; Colardyn & Bjornavold, 2004). Formal learning is organised and has the intention of passing on knowledge in a pre-defined context. Non-formal learning is perceived as learning by the learner but is actually part of other activities. Informal learning is the by-product of everyday activities. It does not take place in any formal educational environment and therefore it does not follow an agenda and has no planned pedagogical content. Examples for informal learning are spontaneous knowledge transfers like instant messaging and other interactions on the Internet as well as phone calls or chance meetings.

The biggest part of what somebody learns happens through informal learning (Colardyn & Bjornavold, 2004). This means that an employee does not learn what he/she really needs in some kind of formal educational program or courses a company may offer but through interaction with his/her colleagues. A presentation can teach the formal basics of something an employee has to know but it is slow, unnecessarily time-consuming and therefore ineffective. However, if an employee is working and encounters a problem and he/she can contact one of his/her experienced peers immediately, he/she is not only able to solve the problem quickly but also learns how to deal with it in the future and gains knowledge connected with that problem. Due to that everybody involved would benefit from the constant possibility of instant interaction and communication.

Initial situation

This section deals with some current trends and technologies to deal with education within the boundaries of the working place and beyond. While this is not an exhaustive enumeration of all important e-learning concepts, it lists the ideas that are important for the creation of a collaborative learning and a knowledge management system.

Self-learning organisational management

Self-learning organisational Management (SLM) is a concept that deals with combining knowledge management with business intelligence to create an environment that enables employees to share and gain knowledge with people who need or provide it (Schroffner et al., 2011). It is based on the idea that every employee has his/her own unique portfolio of knowledge, skills and experience that make him/her a valuable asset for the company. SLM gathers those portfolios in order to create a repository of knowledge and skills. This is done by evaluating the employees' abilities in certain areas of expertise within the boundaries of use cases. However, these use cases are also designed to identify the potential of each person who may require assistance to reach it. SLM is conceived as a means to continuously advance the employees' capabilities. It is important that an employee's newly gained skills become part of his/her portfolio so that he/she can share it with others and become a more efficient part of the educational cycle within the company.

In addition, SLM acts as a tool to assemble a team that fits best the requirements of an upcoming project. Due to the portfolios it can match the employees' knowledge and skills with those needed of a task and suggest certain team members. Additionally, it can provide information about reliable combinations of workers due to constant assessments. This way it is possible to use the right people for the right jobs.

Social (e-)learning

Social learning is about any type of learning with and through the interaction with others. While this also covers traditional, face-to-face interaction, it is used here for virtual, online interaction. This way, the learning is done via Web 2.0 and social media concepts and technologies. For social learning to work efficiently, it is vital that certain requirements are met. These requirements are called the '*seven Cs of social learning*'. The central components are the content about which people should learn something and the connections between the people. With that the consumption of, contribution to, collaboration over, conversation about the content is possible. From a business point of view the control of the process is the most important.

A way of combining learning and interaction is a **collaborative e-learning community**. A community is a collection of people sharing the same goals, experiences, principles or interest. There exists an area of trust within a community so that its members can feel at ease while dealing with others. Due to that a community supports learning in various ways. Despite the fact that individualised trainings would achieve exceptional results, educational courses in enterprises are often based on generalised standard courses and therefore are not fitting actual needs of the employees. About 70% of what is really important are not covered by any courses, because they deal only with how things are officially done (Henschel, 2001).

To cover those differences, steady communication with longstanding members is required. From those senior colleagues, new employees can learn the rules of how things are really done. To make that possible, there has to be a trusting relationship between the people – hence a community is needed.

Implementing a mentoring or buddy system can provide this kind of communication. Such a system is based on the idea that a person who is in need of new knowledge or skills is paired up with someone who possesses this knowledge and who is able to communicate that knowledge or teach that skill. Those people could not only be a trainee and a senior employee but also two longstanding employees. Such a buddy relationship is independent from any hierarchical organisation. The mentor could be a technician teaching a department manager.

To foster the interaction between the company's employees, it is not only important to provide them with the technological abilities but also to encourage them to actually employ them on a daily basis. One possibility to achieve this is the utilisation of Web 2.0 and social media. This is to be realized in **Enterprise 2.0** IT-Infrastructures (McAfee, 2009). A lot of people are familiar with the use of those technologies, so they are more likely to use them

without resistance. Therefore it is easy for them to interact with co-workers and collaborate on content together with them.

Management of Collaboration (MoC) is an idea of a central instance that is responsible for bringing different parties together, easing their interaction and enabling efficient collaboration and innovation (Hacker et al., 2012). It is designed for bridging gaps and liaising between different groups with different backgrounds, understandings and knowledge. However, it is not only responsible for coordinating people but also technologies and resources of a company. With it, it can be possible to tear down barriers and doubts that may exist in the company. MoC can work as a connective instance for all the aforementioned concepts to offer a holistic social e-learning experience (Schmuck et al., 2013). It is important that the MoC is a separate instance that works as an enabler of the continuous improvement process.

Collaborative learning and knowledge management

A social e-learning platform can be based on an efficient Collaborative Learning and Knowledge Management (CKM). The central idea of the system can be SLM, which takes care of all portfolios and continued education concerned processes in the company. The MoC is responsible for the creation of an environment that enables and furthers the SLM's features. Therefore, it is important that there is an on-going interaction between SLM and MoC. The former has to describe what is needed for the knowledge management system to work. The latter has to derive specific requirements from that description and take care that all the necessary services and resources are provided.

The most important thing is the social interaction between the people who are supposed to work with the system. Therefore, the provision of adequate communication channels is of vital importance. As mentioned above, employing social media is a promising way of providing these channels. The MoC has to find a way to encourage and foster the interaction via these virtual ways of communication for the system to work. Whether such a community works and flourishes depends mostly on the level of trust between the users. Again, it is the MoC's task to find a way to create and nourish this trust. As collaboration does not only consist of interaction but also of working simultaneously together on the same content, suitable methods of achieving this have also to be available.

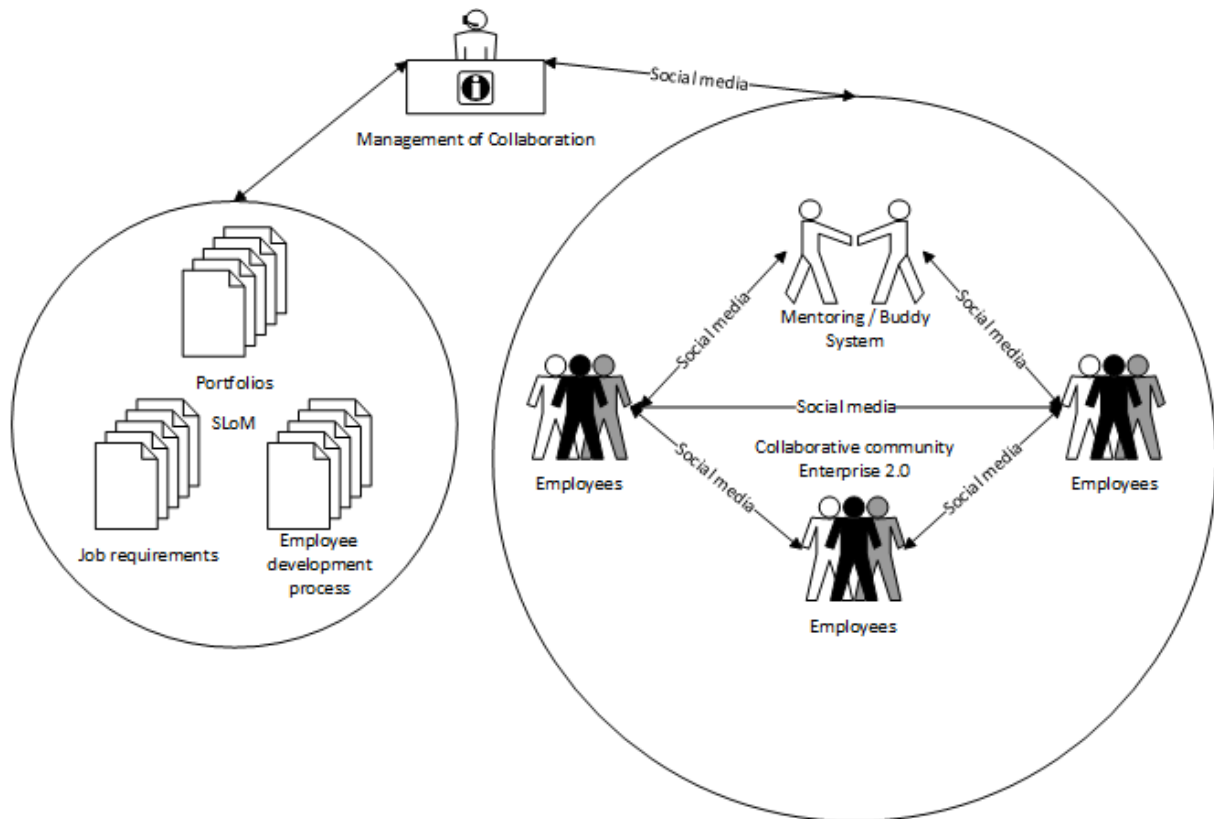


Figure 1. Structure of a CKM

The main idea of the CKM is to support the informal way of learning. This is achieved by supporting hands-on experiences and contemporaneous communication with experienced people. There exist different ways of how people can collaborate with each other. It is very essential that the experienced employee cannot only provide theoretical information but practical advice and visuals as well. This may be done via the simultaneous editing of a text file, the sharing of a screen, giving the experienced employee the chance to actively show how something is done in the working environment of the person that needs the knowledge or the utilisation of a shared writing space using a digitiser (Haber, Hasanovic, et al., 2013; Haber, Lampoltshammer, et al., 2013).

Figure 1 shows the structure of the CKM and the links between all its parts. The community part consists of all employees as well as the social media communication channels and the collaborative content. Although MoC interacts with the community, it is not directly part of it. Aside from supervising and fostering the communication process, it serves as the connection between the SLM and the collaborative community.

As soon as an employee requires some kind of knowledge or skill that he/she does not possess, the further education process is triggered, which is depicted in Figure 2. The employee reports the requirement. The request is checked against a knowledge repository, which consists of the employees' portfolios. These portfolios then yield a list of people who possess the knowledge required. The MoC chooses a suitable match from that list and sees to it that the two people get in touch with each other via the provided communication channels to form a buddy

relationship. The mentor then teaches the person in need the knowledge that is required in an informal way.

Therefore, the mentoring is not supposed to be a lecture. The knowledge should be passed on as a kind of personalised learning-by-doing exercise whereby the mentor causally provides the information in the way the other person needs and maybe shows an example of how to do it and afterwards let him/her do it his-/herself. This way the person who has to learn something sees how it is done correctly and can try it out immediately under the supervision of the experienced colleague. This collaboration ensures that the knowledge repository is not just a central storage place for information. The repository becomes an active, involving instance that does way more than providing data. It consists of the people possessing knowledge, prepared to pass it on, improving their peers through interaction and teamwork. The associated supervised buddy system is based on this informal collaborative learning idea and designed to improve the knowledge and skills of employees as well as the process itself. This way, the more such mentoring partnerships are established and brought to a conclusion, the better the system will be. The gathered information about relationships which work out well helps with assembling project teams and assigning further buddies to each other.

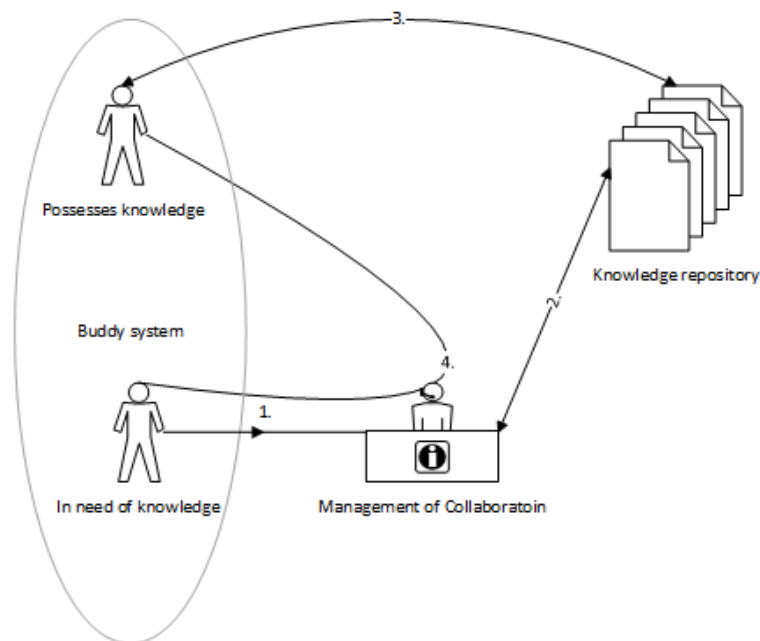


Figure 2. SLM Buddy System

It must be possible to measure the success of the process. Therefore, the newly gathered knowledge has to be certified and subsequently entered into the employee's portfolio, so that the/she can provide the information for others if required. Additionally, the entire mentoring process has to be supervised by the MoC. That is because it is part of a continuous improvement process. It has to be documented whether the interaction between the two buddies went well or met any problems. Those problems must be registered, analysed and resolved, so that future buddy relationships can go as unhindered as possible. However, the documentation must not stop there. It is crucial to assess the quality of the interaction on a work-related as well as on a private level between the two parties. It has to become part of the

portfolios which combinations of people work well with each other and which do not. The information about who knows and is able to do what and who works well with whom is vital when assembling new project teams or transfer somebody into a new department. It provides guidance for the planning manager to choose the right people for the right position which results in a much more efficient working environment.

Conclusion

A central instance that's only task is to be a connector between different parts of a company like MoC in combination with an extended knowledge management like SLM can be the foundation for an efficient management system. However, this system does not only provide information about which employee possesses which knowledge and skills for a manager but does much more. It creates a system that consists of processes and technologies that are custom-made for the sole purpose of sharing knowledge between all employees and further their interaction. Interaction is the key to a successful CKM because it is the main source of informal learning from which the employees gain the most. Therefore MoC can be seen as the navigator in combination with the drive motors SLM and CKM to establish an efficient Enterprise 2.0.

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