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## **Work & Learn Together**

# **WP1: Analysis of tools supporting communities of practice**

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## Introduction

The project Work & Learn Together project aims to setup and sustain virtual communities of practice of SMEs in the tourist sector in order to facilitate and support lifelong learning of employers and employees in the workplace. A basic assumption for this is the observation that communities of practice and of learners seem to have a positive influence on their learning processes, especially when these communities address work-related issues or are rooted in daily-work processes.

In order to fully develop the potential of the concept of communities of practice learners need suitable pedagogical models as well as tools that are fitted to the needs of social learning processes. “Learning on demand” and “just in time” need sufficient flexible and individualised learning tools and settings.

The aim of this report is to give an overview on tools and models supporting such collaborative virtual networks. The involved members of the Institute for Future Studies (AT) systematically searched the Internet, literature data bases, and other resources in order to update the projects’ knowledge on tools and models that can possibly be used to facilitate and support virtual networks of SMEs in tourism. Additional information and links to tools have been uploaded on the project platform by the project partners: <http://www.wissen-ist-meer.de/wlt/>

# 1 Social software, web 2.0 and e-learning 2.0

ICT-based learning has been around for more than a decade and is now seen as a valuable addition to traditional learning approaches. E-learning critics, however, often emphasize that in most cases traditional learning- and teaching methods were simply applied to the E-learning context. This in turn results in the fact that many existing E-learning arrangements do not take full advantage offered by current technologies (cf. Atwell 2003; Downes 2005).

The basic structure of the internet and its use show some similarities. The early form of the internet was and is still mainly characterised by a top-down approach; the user's role is primarily a passive one (cf. O'Hear 2005). At the moment, however, it is often emphasized that we are entering a new phase in the development of the internet. The US internet pioneer Tim O'Reilly was one of the first ones who contributed to the coining of the term "web 2.0" (cf. O'Reilly 2005). The "web 2.0" concept implies a number of new applications and services, which, according to O'Reilly, make up an "architecture of participation" (cf. O'Hear 2005). The dominating approach to the use of the internet is no more top-down but bottom-up. "Web 2.0", and other terms used to describe these new developments thus, stand for web services and applications, allowing users to publish contents without facing the technical barrier, and at the same time taking full advantage of the potentials of the internet – social interaction and cooperation.

The popularity of so called "Social Networking Sites" like 'Friendster' or 'Flickr' leads to the transformation of the web itself from what was called the "Read Web" to the "Read-Write Web" (cf. Downes 2005). Therefore, the internet is transforming from being a medium, in which information is transmitted and consumed, into a platform, where content is produced, shared, remixed and passed on.

However the term "web 2.0" is broadly discussed in the scientific community and taking into account the technology underlying "web 2.0" (which is not new at all, e.g. Asynchronous Java and XML (AJAX) is about 5 years old), it is probably more appropriate to speak of an ongoing evolution than to assume a dramatic revolution. Kathy Sierra in her blog "Creating passionate users" summarises the ongoing discussions on terminology: "The best thing about Web 2.0 is that— *nobody knows what the hell it really means*. Even the ones who coined the term are still struggling to find a compact definition. And this is the true beauty and power of Web 2.0 — it makes \_\_\_\_\_ people \_\_\_\_\_ think." ([http://headrush.typepad.com/creating\\_passionate\\_users/2005/10/the\\_best\\_thing\\_.html](http://headrush.typepad.com/creating_passionate_users/2005/10/the_best_thing_.html)).

## 2 The Significance of Social Software

Social interaction and collaboration can be regarded as the main features that characterise the "web 2.0" concept. Because of their social and collaborative character, applications associated with "web 2.0" are often called Social Software. Social Software is defined as software that supports human communication, interaction and collaboration (cf. wikipedia.de).

The description of Social Software given in Wikipedia (cf. [http://en.wikipedia.org/wiki/Social\\_software](http://en.wikipedia.org/wiki/Social_software)) also points out to the different aspects addressed by the term and the ambiguous use of terminology, e.g. a broad understanding of Social Software could include email, mailing lists, Usenet as well as web pages. Another description of Social Software refers to the use of two or more modes of communication, i.e. one-to-one communication, one-to-many-communication and many-to-many communication (cf. [http://en.wikipedia.org/wiki/Social\\_software](http://en.wikipedia.org/wiki/Social_software)).

Following the latter notion of Social Software e-mail and even the telephone can be seen as precursors to Social Software. What is actually new about Social Software, however, is the fact that a new form of communication is supported by these applications. Thus, the already known forms of communication, i.e. “one-to-one communication” via telephone and E-mail and “one-to-many communication”, represented by the mass media like television, radio and the press, are extended by the “many-to-many communication” (cf. Robes 2005).

Another crucial factor of Social Software is its bottom-up approach, which allows users to organise contents according to their own principles. Learning Management Systems (LMS) or Content Management Systems (CMS), on the other hand, tend to apply a top-down strategy, where tutors set a clear framework to be followed by users. Hilzensauer and Gruber (2005) conclude that Computer Based Trainings (CBT), WBT, LMS or even blended learning arrangements do not succeed in supporting individual learning processes and social interaction.

Nevertheless many LMS and CMS are implementing characteristics of Social Software, thus making it even more difficult to speak of “web2.0”, as there is no gap in development but an ongoing evolution and adaptation of software.

Many-to-many communication is featured by various online applications. Chats, online platforms and newsgroups are also known as Social Software, but have already been around for a couple of years. The term itself, however, was coined around the year 2002 (Schmidt 2004). Besides the above named tools Wikipedia lists a series of different applications which led to the popularization of Social Software:

- Instant Messaging
- Internet Relay Chat
- Internet forums
- Blogs or Weblogs
- Wikis
- Social network services
- Social network search engines
- Social guides
- Social bookmarking
- Social Citations
- Social Libraries
- Social Shopping Applications
- Peer-to-peer social networks
- Collaborative real-time editing
- Virtual presence

- Virtual worlds and Massively-Multiplayer Online Games (MMOGs) (cf. [http://en.wikipedia.org/wiki/Social\\_software](http://en.wikipedia.org/wiki/Social_software))

However, in the framework of the project and considering the limitations as imposed by the specific nature of the target group, not all of these tools are equally suitable for the purposes of the Work and Learn Together (WLT) project, as outlined more in detail in chapter 4. Furthermore the rapidly changing landscape of available tools and applications makes it nearly impossible to give an overview on the “state-of-the-art”, therefore general characteristics of Social Software are outlined below, before we focus on a limited set of applications that seems to be most useful for the purposes of the WLT project.

### **3 Basic Characteristics of Social Software**

#### **3.1 Personal publishing**

Online publishing of personal contents is especially encouraged by the easy handling of online-diaries, so called “weblogs” or “blogs”. Weblogs remove the technical barriers to writing and publishing online and enable users to record personal thoughts in a fast and simple way. Moreover, readers of these personal comments are encouraged to give critical feedback and add their own commentaries. Feedback could be given by teachers, students, other employees or the wider community.

The structure of a weblog is basically always quite similar. Every weblog entry, which is posted in the form of a paragraph, is marked by an entry date. Additionally, the respective author’s name is added. This simple but efficient standard has been gradually developed by weblog users themselves, and makes it easy to find one’s way around different blogs. This standard, moreover, facilitates and supports the transfer of contents from one blog to another (cf. Tscherteu 2004). Weblogs may thus be seen as places where work in progress is published, questions are discussed, or links on relevant or corresponding topics are posted.

#### **3.2 Collaborative publishing**

One central aspect of most social software applications is their reliance on the joint abilities and knowledge of their users. This, in particular, applies to so called “wikis”. Similar to blogs, wiki software enables online publishing without facing the technical barriers. Wikis, however, put a stronger emphasis on collaborative than on personal publishing (cf. O’Hear 2005). Every wiki-page features an “edit” button which is not only meant to encourage users to add new material, but also to edit already existing pages. Presumably the most well known wiki is the online encyclopaedia “Wikipedia” ([www.wikipedia.org](http://www.wikipedia.org)), which is written and edited by a constantly growing online-community.

Another important feature of wikis is the creation of wiki-links. These links are easily created by putting certain words in the source code into brackets. The software then transforms these words into links to wiki-pages with the same name. If pages do not already exist, they are automatically created. In this way single wiki-pages can be interlinked intuitively, which also facilitates the access to related topics (see “Folksonomy”) (cf. Köster 2005).

It is often criticised, however, that the quality of contributions to wikis often very much varies, because of the fact that no single editor exists. The wiki community, on the other hand, emphasize that mistakes are corrected by the users themselves, and the destruction of pages is prevented by special reconstruction mechanisms featured by the wiki software.

### **3.3 Folksonomy**

The term “Folksonomy” is an amalgamation of the word “folks”, on the one hand, and “taxonomy” on the other. Folksonomy is another example of the way in which Social Software relies on the collective intelligence of its users. It refers to the collaborative way in which information is categorized on the web. Users are encouraged to assign freely chosen keywords to pieces of information or data, instead of falling back on a centralised form of classification. This process is also known as tagging. The main advantage of folksonomy is the fact that information is categorised by those who make use of it. Moreover, information and connections, which were not noticed by a single user, become apparent by the great number of interlinked users.

Tagging is used by “web 2.0” services that allow their users to publish and share media, like photos (cf. [www.flickr.com](http://www.flickr.com)) or videos (cf. [www.youtube.com](http://www.youtube.com)). It can also be found in most blog software, where each entry can be assigned keywords. The term folksonomy is, furthermore, used in connection with so called “social bookmarks”. The software delicious (<http://del.icio.us>) is a social bookmarks manager, which allows users to create their own personal collection of weblinks. These weblinks can be accessed from any computer connected to the internet because they are stored online. Each bookmark is given a short description and also tagged with keywords. These bookmarks can also be edited collaboratively.

### **3.4 Media and devices**

The principle of online publishing, editing and sharing of contents can be found in every application associated with Social Software. In a similar way this also applies to digital media, like audio and video. Parallel to the development of Social Software, there has been an almost explosive distribution of portable media devices, like mobile phones or digital audio players. As a consequence there has also been a large increase in the opportunities to share and publish digital media (cf. O’Hear 2005). A good example for this trend is the very popular audio player iPod from Apple. In combination with Apple’s iTunes software publishing and sharing of digital audio (cf. “podcasts”) has become quick and easy.

### 3.5 Content aggregation

Perhaps the most important functionality of Social Software is the connectivity to bring all these various elements, mentioned above, together (cf. O'Hare 2005). The central technology for this purpose is RSS (Really Simple Syndication). This technology, basically, enables users to subscribe to website contents. In this way contents are automatically downloaded to the subscribers' computers immediately after their release. These releases are not only limited to texts, but also audio- or video files (cf. podcasts) can be subscribed to via RSS and transferred to digital media players. These data are also known as RSS-feeds (cf. wikipedia.org).

RSS is most frequently used in weblogs. However, also online magazines offer so called newsfeed subscriptions. Feedreaders enable users to save links of RSS-feeds. With the help of these links, feedreaders then automatically download headlines and/or short descriptions of contents, put them into order and display them. As already mentioned above, RSS is not only limited to text-based information, but can also be used to download digital media. There are already a number of MP3 platforms which offer RSS-feeds for podcasts (cf. iTunes Music Store).

RSS-feeds, on the one hand, result in an explosive distribution of contents, and, on the other hand, lead to the filtering and rearrangement of contents by various authors. Every author only chooses the news they are interested in, and arranges it in a unique way. In this way a web of various sources of information and mutual influence is created.

## 4 Selected Social Learning Tools

The internet has changed from a „read-web“ to a „read-write-web“, which mainly implies a stronger emphasis on social interaction and collaboration. The term „read-write-web“ in our understanding tries to catch the more active user/learner roles in the internet and in fact could be extended to a „read-write-calculate-hear-record-tag-design-...web“.

The so called „web 2.0“ applications or Social Software respectively are meant to support the creation and maintenance of social networks (cf. Schmidt 2004). These changes also bear a number of positive implications for ICT-based learning. The transfer of these new technologies into an E-learning context, thus, may result in a social, personalized and cooperative approach to learning and teaching. This, however, remains a claim which has rarely been fulfilled by the most frequently used E-learning applications of the past few years (cf. Atwell et al. 2003).

The following chapters focus on a number of Social-Software applications and their potential as learning tools supporting corporate learning strategies. The reasons for the focus on Wikis, Weblogs, Podcasting and Instant Messaging are twofold:

1. Wikis, blogs and instant messaging tools are not „cutting-edge“ Social Software tools, thus making it rather easy to find good documentation and support and a variety of different software tools to choose from.
2. The use of Information and Communication Technologies (ICT) in small and medium sized enterprises (SME), depending on a number of different variables that do not allow generalization (cf. Reich and Scheuermann 2003 and 2004), imposes the selection of rather „simple“ tools in order to sufficiently

address the target group. The selected tools in general, as well as the examples given below, offer a broad variety of different application settings, and do not demand for in-depth knowledge on programming or web design.

## 4.1 Wikis

Best possible frameworks for communication and cooperation are often regarded as the major prerequisites for internationally successful and competitive enterprises. Respective software tools may be seen as a support to these processes, especially for enterprises where employees work in various places. A purchase of conventional groupware applications, however, often implies considerable expenses for their acquisition, implementation and maintenance. These costs can rarely be met, particularly, by small- and medium-sized enterprises (SME). A solution to this dilemma could be seen in the use of cheap and easy-to-use Open Software applications (cf. Schmid 2004; Köster 2005).

Wikis more and more become a popular Open Source alternative to conventional software solutions. Its main assets are the simple and intuitive handling and its applicability in various contexts. Although wikis are still quite unknown in corporate surroundings, they have already been used for a number of years in well-known corporations. Wikis are used by e.g. British Telecommunications in their development and design sections, Disney staff use wikis in the technology department and Motorola also applies wikis as supportive tools (cf. Puls et al. 2002; Schmid 2004).

Wikis bear various advantages as a supportive tool for corporate communication and cooperation as well as learning. They can be regarded as cost-effective, mainly because already-existing infrastructure can be used. Moreover, their application and implementation is very simple. Another advantage is the Open Source character of wikis, which makes them easily adaptable to respective needs. A further positive aspect is that contents can be edited and corrected by every user. In order to ban the destruction of contents, wikis incorporate reconstruction tools, which enable users to restore the state of pages prior to their destruction (Schmid 2004).

Despite the obvious advantages of corporate wikis, their possible incompatibility with corporate culture must not be neglected. Since every user has equal access, wikis encourage informal ways of communication and are thus mainly suitable for flexible corporations with "flat hierarchies" (cf. Puls 2002). Furthermore, wikis which provide open access to all employees may not be suitable for sensitive corporate data, and the contents of a wiki are only as good as their respective authors. Wikis will not work out if staff cannot be motivated to work with them (Köster 2005).

The main area of application of wikis within corporations is the support of team-work. In this context wikis are used to collect individual knowledge, and at the same time provide the collected information to other employees. This may be especially advantageous if employees drop out of projects and new staff have to get acquainted with the project. Project findings, moreover, can be constantly saved and easily used for reference at any time. The saved findings might also be used as a basis for a customer-relations-database (Köster 2005).

The wiki concept enables every employee with access to a computer to make use of the wiki and to edit it. The above mentioned easy handling provides staff with the possibility to publish information on the intranet. Furthermore, wikis can be easily adapted to changing corporate or organisational frameworks; an implementation of wikis for new projects is quite easy.

### **Selected tools**

*MediaWiki* is a powerful Open Source Wiki; it is best known as the software used for the online-Encyclopedia Wikipedia. Website:

<http://www.mediawiki.org/wiki/MediaWiki>

*DokuWiki* is an easy-to-use Wiki used predominantly for documentation purposes, targeted at working groups and small enterprises. All files are stored as flat-files (text) – therefore no data base is needed. Website:

<http://wiki.splitbrain.org/wiki:dokuwiki>

*ErfurtWiki* supports MySQL as well as flat files. It can be easily integrated into already existing websites. Website: <http://erfurtwiki.sourceforge.net/ErfurtWiki-de>

*PmWiki* is targeted at the collaborative development of websites. Therefore PmWiki pages look like „normal“ web pages but have all functionalities of a Wiki system.

Website: <http://www.pmwiki.org/>

## **4.2 Weblogs**

Besides wikis, weblogs are considered to be particularly suitable to support social interaction and collaboration (also) in a corporate context. They are, furthermore, often seen as a basic tool for personal knowledge-management, which may be used as a personal diary or basically as an instrument to support group-dynamic processes (cf. Hilzensauer & Gruber 2005). Weblogs are essentially self-contained and, similar to a diary, personal in their character. RSS technology, however, enables bloggers to gather information from a variety of sources and to interlink these sources. This process then triggers the actual group-dynamic behind weblogs. The respective structures of blogs, nevertheless, reflect an individual user's approach to gathering and arranging information. Consequently, blogs also reflect a user's personal approach to learning, because sources of knowledge are interlinked individually.

Weblogs are generally regarded as personal publishing tools. However, as already mentioned above, RSS and the possibility to post comments make it also a collaborative and social-interactive software-application. Blogs thus offer a variety of possible fields of use in corporate surroundings. Corporate blogs may be used as personal diaries for project documentation purposes, as a collection of knowledge ("knowledge-blogs") for employees, or even as "marketing blogs" in the form of "CEO-blogs" as well as service- or "customer-relationship-blogs" ("CR-blogs").

Zerfaß (2005) distinguishes, on one hand, between weblogs for "internal communication", "market communication" and "public relations". On the other hand, he differentiates blogs on the grounds of different aims of communication. According

to the author, corporate blogs are thus used to convey information, to persuade (e.g. to form an image) and for argumentation purposes (e.g. to cultivate relations, to solve conflicts).

The field of internal communication seems to be of particular importance in the context of corporate social learning. One example for “knowledge blogs” would be the roughly 120 internal blogs of the Dresdner Kleinwort Wasserstein Investmentbank, which are used by analysts and traders to share their know-how in the field (cf. Zerfaß 2005). Weblogs, however, also offer a number of advantages for SME, especially in the field of knowledge-management.

The gain in importance of project- and team-work may be also regarded as a driving factor for the implementation of more socially interactive software applications. Additionally, dynamic working conditions and processes also require more dynamic and individualised approaches to knowledge-management. A centralised top-down approach to information-management will not do justice to the ever changing working demands (cf. Hilzensauer & Gruber 2005). As a consequence, the question of how individuals can be best supported in their personal working and learning processes needs to be addressed. Weblogs may be regarded as quite promising E-learning tools to support these processes.

#### **Selected tools**

*other Blogging tools are listed under podcasting tools*

*Blogger* has been one of the first blogging systems and is still famous. Users can create Blogs on webspace provided by Blogger or on their own web servers.

Website: <http://wordpress.de/>

*MoveableType* is a „... weblog publishing platform for businesses, organizations, developers, and web designers.“ (<http://www.sixapart.com/movabletype/>). There have been discussions about its licence policy recently. Still users can obtain a limited free edition. Website: <http://www.sixapart.com/movabletype/>

*Nucleus* is a popular Open-Source Blog; easy-to-use and extensible by plugins.

Website: <http://nucleuscms.org>

### **4.3 Podcasts**

Podcasts are considered to be one of the latest offsprings in the field of web 2.0 applications. The term podcasting is an amalgamation of two separate words, namely iPod, the popular portable digital audio player from Apple, and broadcasting. The concept behind podcasts is a rather simple one. Podcasts are basically digital audio programs that can be subscribed to and downloaded by users via RSS. These programs can then be listened to on either a variety of digital audio devices or a desktop computer.

The main reason for the popularity of podcasts is the fact that the production of mp3-files does not require a large amount of technological knowledge as well as time and money. Additionally, RSS and the corresponding aggregators enable users to automatically download audio contents without visiting the respective websites.

Central characteristics of podcasts are their on-demand availability as well as the accessibility of information via mobile devices. Consequently, podcasting may be regarded as a new version of mobile learning. Moreover, the so called “vodcasting” – the video-equivalent to podcasting - is considered to be a future trend of mobile learning (cf. Kaplan-Leiserson 2005; Van Aaken 2005).

Podcasts also offer a number of (new) approaches to corporate learning. Digital audio, however, must not be seen as a substitute for other methods of presentation. Podcasts are rather to be regarded as a complementary form of presentation in addition to already existing forms. They may represent a preferable form of content presentation for auditory types of learners. Additionally, podcasts may be used to revise material already listened to at an earlier stage. They could, furthermore, be an inexpensive alternative to oral presentations or lectures respectively, provided no discussion or interaction is necessarily required.

The above mentioned examples, however, show one major limitation of podcasts: they are linear and restricted to one-way-communication. Thus, podcasts require integration into blogs or online-simulations, in order to add an interactive element to the passive consumption of information (cf. Kaplan-Leiserson 2005). Integration could imply the possibility to post comments on the corresponding weblog and thus establish a learning-community based on the digital audio programs.

Because of the fact that resources for corporate learning, i.e. time and money, are often very limited, mobile learning could constitute an alternative training method. For some employees it might be preferable to learn on their way to work or while doing some kind of sport. Podcasts could, for example, easily be used for the introduction of new product launches (cf. Kaplan-Leiserson 2005). Additional possibilities for the introduction of mobile learning result from the fact that more and more digital audio players are integrated in mobile phones, which also means a sharp increase in the availability of such players.

### ***Selected tools***

#### *Blogging tools that allow easy integration of podcasts*

*WordPress* is an Open-Source blog software targeted at user friendliness, compliancy with web webstandards and design. Website: <http://wordpress.de/>

*Loudblog* is an easy to use software for the publication of audio files (quite similar to a Content Management System). Website: <http://loudblog.de/>

*bBlog* ist an Open-Source Personal Publishing System; an easy-to-use but flexible blog for beginners. Website: <http://www.bblog.com/>

### ***Selected tools for retrieving („Podcatcher“)***

iPodder (Juice). Website: <http://juicereceiver.sourceforge.net/index.php>

Apple iTunes. Website: <http://www.apple.com/de/itunes/download/>

FireANT, also suitable for the download of video contents. Website: <http://getfireant.com/>

Podspider is an all-in-one solution - Podcast Portal, search engine, Podcatcher.  
Website: <http://www.podspider.de/>

## 4.4 Instant Messaging

Instant messaging (IM) allows different forms of communication and collaboration with a limited numbers of users or peers. The main advantage of instant messaging applications is that users always know which one of their peers is available and which one is not. The other two basic features which characterise instant messengers are their ability to send messages instantly and their chat or voice-chat functionality.

Most IM applications, however, also offer a number of additional features. One of the most popular IM applications at the moment is the free software Skype. Besides the basic features mentioned before, Skype users are offered the possibility to talk to their peers over the internet for free (voice over IP). Additionally, group conferences or even video-conferences can be held. Skype users may, furthermore, send files, and plug-ins enable them to share material and work on documents collaboratively.

Instant messaging can thus be considered to be a further tool to support social and collaborative learning and working. The main advantages of the IM technology in a corporate context are to be found in their ability to support spontaneous and cost-effective ways of communication. Moreover, collaboration is restricted to those users who have access to the respective accounts. Critics, however, often point to the security risk of IM systems in corporate surroundings, especially when instant messengers are used to share confidential information (cf. Masie 2002).

### ***Selected tools***

*Skype* integrates Instant Messaging as well as Voice over IP (VoIP), group conferences, file transfer and is heading towards videoconferencing (already implemented in a beta release). Website: <http://www.skype.com/intl/de/>

The *Yahoo! Messenger* is a commonly used Instant Messaging- Client and protocol from Yahoo!. The free Yahoo! Messenger (short Y!M) can be downloaded and installed with a valid Yahoo-login. New features include VoIP and drag-and-drop of photos. Website: <http://de.messenger.yahoo.com/>

*Miranda IM* support several protocols used by different messengers (e.g.: ICQ, AIM, MSN, Jabber, Yahoo, IRC, Gadu-Gadu, Tlen, Skype ...) and can be extended by plugins. Website: <http://www.miranda-im.org/>

## Literature

Attwell, G. et al.: eLearning – Monitoring - Thematic Analysis within the framework of the Leonardo da Vinci Programme, Berlin, 2003.

Downes.: E-learning 2.0. in: eLearn Magazine. Online-Publikation: <http://elearnmag.org/subpage.cfm?section=articles&article=29-1> 18.10.2005.

Hilzensauer, W., Gruber, A.: Der Siegeszug der Weblogs – Ansätze und Erfahrungen zwischen „Hype und Hope“. Online-Publikation: <http://www.checkpoint-elearning.de/print.php?alD=1038>. 01.2005.

Kaplan-Leiserson, E.: Trend: Podcasting in Academic and Corporate Learning. Online-Publikation: [http://www.learningcircuits.org/2005/jun2005/0506\\_trends](http://www.learningcircuits.org/2005/jun2005/0506_trends). 06.2005.

Köster, J.P.: Wikis bündeln das Mitarbeiterwissen. Online-Publikation: [http://www.computerwoche.de/produkte\\_technik/software/567421/](http://www.computerwoche.de/produkte_technik/software/567421/), 15.10.2005.

Masie, E.: Instant Messenger Use at Work - Some Intereting Trends. Online-Publikation: [http://trends.masie.com/archives/2002/02/228\\_updates\\_on.html](http://trends.masie.com/archives/2002/02/228_updates_on.html) . 06.02.2002.

O’Hear, S.: Seconds out, round two. Online-Publikation: <http://education.guardian.co.uk/elearning/story/0,10577,1642281,00.html>. 15.11.2005.

O’Reilly, T.: What is Web 2.0? Design Patterns and business models for the next generation of software. Online-Publikation: <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html> . 30.09.2005.

Puls, C., Bongulielmi, L, Henseler, P.: Leitfaden für den Aufbau einer unternehmensinternen Wissensbasis mit Hilfe von Wiki. Zürich, 2002.

Reich, K., Scheuermann, F.: E-learning in Austrian SMEs. A case study from Tyrol region. In: Attwell, G. (ed.): The challenge of e-learning in small enterprises. Issues for policy and practice in Europe. Cedefop Panorama series, Nr. 82. Luxembourg, 2003.

Reich, K., Scheuermann, F.: ICT and learning in small and medium sized enterprises (SMEs). Report on the business survey in Austria. Unpublished paper in the framweork of the ICT-VET project. 2004.

Robes, J.: What’s in it for me? Über den Nutzen von Weblogs für Wissensarbeiter. in: IM - Information Management & Consulting, H. 3, 2005.

Schmidt, J.: Was ist Social Software? Online-Publikation: [www.schmidtmitdete.de/pdf/soso\\_einfuehrung.pdf](http://www.schmidtmitdete.de/pdf/soso_einfuehrung.pdf)

Tscherteu, G.: Social Software – eine Einführung. Online-Publikation:  
<http://www.realitylab.at/radio/stories/2004/11/16/socialSoftwareEineEinfuehrung.html>.  
16.11.2004.

Van Aaken, G.: Ich bin der Sender – Über Podcasting und eine mögliche  
Medienrevolution. Diplomarbeit. Mainz, 2005.

Zerfaß, A.: Corporate Blogs: Einsatzmöglichkeiten und Herausforderungen. Online-  
Publikation: [www.bloginitiativegermany.de](http://www.bloginitiativegermany.de). 2005.

## **Internet resources**

Checkpoint E-Learning: <http://www.checkpoint-elearning.de>

Community Intelligence Labs: <http://www.co-i-l.com>

Headshift: <http://www.headshift.com>

iPod in Education: <http://www.ipodined.org/>

IT Frontal – Web 2.0: <http://www.webcultureblog.de/>

Knownet: <http://www.knownet.com>

Learning Circuits: <http://www.learningcircuits.org>

Werkstatt für neue Lernkultur: <http://www.neue-lernkultur.de>

Wikipedia – Online-Enzyklopädie: <http://www.wikipedia.org>