



HAL
open science

Some "Lessons Learned" on Social Software for Professional Learning

Ralf Klamma, Martin Bachwerk

► **To cite this version:**

Ralf Klamma, Martin Bachwerk. Some "Lessons Learned" on Social Software for Professional Learning. 2007. hal-00588807

HAL Id: hal-00588807

<https://hal.science/hal-00588807>

Submitted on 2 May 2011

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



PROLEARN

European Commission Sixth Framework Project (IST-507310)

Deliverable	15.5
	Some “Lessons Learnt” on Social Software for Professional Learning

Editor *Ralf Klamma / Martin Bachwerk*

Work Package *15*

Status *Draft*

Date *December 7, 2007*

The PROLEARN Consortium

1. Universität Hannover, Learning Lab Lower Saxony (L3S), Germany
2. Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (DFKI), Germany
3. Open University (OU), UK
4. Katholieke Universiteit Leuven (K.U.Leuven) / ARIADNE Foundation, Belgium
5. Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (FHG), Germany
6. Wirtschaftsuniversität Wien (WUW), Austria
7. Universität für Bodenkultur, Zentrum für Soziale Innovation (CSI), Austria
8. École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
9. Eigenössische Technische Hochschule Zürich (ETHZ), Switzerland
10. Politecnico di Milano (POLIMI), Italy
11. Jožef Stefan Institute (JSI), Slovenia
12. Universidad Politécnica de Madrid (UPM), Spain
13. Kungl. Tekniska Högskolan (KTH), Sweden
14. National Centre for Scientific Research “Demokritos” (NCSR), Greece

15. Institut National des Télécommunications (INT), France
16. Hautes Etudes Commerciales (HEC), France
17. Technische Universiteit Eindhoven (TU/e), Netherlands
18. Rheinisch-Westfälische Technische Hochschule Aachen (RWTH), Germany
19. Helsinki University of Technology (HUT), Finland
20. imc information multimedia communication AG (IMC), Germany
21. Open Universiteit Nederland (OU NL), Netherlands

Document Control

Title: Lessons Learnt on Social Software for Professional Learning
Author/Editor: Ralf Klamma / Martin Bachwerk
E-mail: klamma@informatik.rwth-aachen.de

Amendment History

Version	Date	Author/Editor	Description/Comments
1	December 7, 2007	Ralf Klamma, Martin Bachwerk	Initial Version
2	December 14, 2007	Ralf Klamma, Martin Bachwerk	Review version ready
3	January 7, 2008	Ralf Klamma	Revised due to review comments

Legal Notices

The information in this document is subject to change without notice.

The Members of the PROLEARN Consortium make no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The Members of the PROLEARN Consortium shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Introduction

This deliverable's Conclusion lists some lessons learnt regarding the use of social software for professional learning. The conclusion is based upon experiences and insights reported by PROLEARN members, and also the following three recent items, comprising two reports and a questionnaire:

- A report about a workshop conducted at the European conference on Computer-Supported Cooperative Work in Limerick, Ireland tackling the gap between CSCW and Social Software. These two areas of research have an impact on the use of social software in companies. The workshop demonstrated the far reaching consequences of social software on professional learning. The use of wikis, employee blogging and other social software practices have changed substantially work routines, human resource development strategies and knowledge management in companies.
- A report about a track at the Professional Training Facts in Stuttgart, Germany. The track dealt with Social Software and Competences trying to answer the question: How can we improve the abilities of companies to be innovative in a changing world? The special track was evaluated as one of the two best tracks of the PTF 2008 conference (cf. D8.16) and showed the rising interest in competence management strategies related to social software.
- A questionnaire designed and distributed to get data on the impact of social software on European technology enhanced learning industries. Social Software and Social Network Analysis as a consulting tool have already reached a mature stage. As reported in D15.3 already two German book projects were started to reflect this. (Gronau, Norbert/Müller, Claudia (Eds.): *Bildung von Sozialen Netzwerken in Anwendungen der Social Software*. GITO-Verlag) and (Back, A.; Gronau, N.; Tochtermann, K. (Eds.): "Social Software in Companies" (in German), Oldenbourg, currently under editing). Since the feedback on the questionnaire was not that satisfying, we will present rather the design and the rationale of the study.

The impact of social software on professional learning can be understood also by following the development in other work packages of the PROLEARN Network of Excellence. Basically, there is no research work package which is not affected by the idea of social software. Therefore, many lessons learnt not reported here can be found in the deliverables of our work packages.

Workshop "What is missing in Social Software?"

The workshop was conducted at the European Conference on Computer-Supported Collaborative Work (E-CSCW) in Limerick, Ireland on September 24, 2007. The

workshop was announced via the conference website <http://www.ecscw07.org> und fully documented via a wiki at <http://socialsoftwareecscw07.wikispaces.com/>.

Social software - often connected to older forms of computer mediated communication (CMC) and newer discussion about online communities - concentrates on the link-up between social entities in digital social networks and their interaction. Group systems contain and group social entities. The general topic of the workshop is to start the discussion about the following questions: How does social software relate to the domain of Computer-Supported Cooperative Work (CSCW) and what are current collaborative practices in social software.

The use of new digital media tools such as blogs, wikis, tagging and other communicative or multimedia assets create new challenges for the domain of computer-supported cooperative work. Typical social software hosts serve typically millions of users dedicated to one digital medium like digital images, digital videos, and digital audio or specialised on one service like (micro-)blogging, social networking, or bookmark sharing. New challenges for engineering and design of cooperative systems are raised by the new business models possible through the availability of social software like user-generated content, collective intelligence phenomena, and syndication but also new threads like losing control on private data and complete transparency of human acting.

Nevertheless, new generations of groupware tools incorporate social software features and well established research results from CSCW are to be revisited in the light of social software so as to realize awareness in the presence of millions of users or to predict how social software will be appropriated in organizations.

The workshop focused on current collaborative work practices in social software. The workshop invited quality contributions that propose solutions to the issues identified above. It aimed to bring together scientists and engineers who work on designing and/or developing social software, as well as practitioners using them in corporate settings. Topics of interest included the following:

- Social roles and Leadership in Social Software
- Social norms, Social Control and Deviant Behaviour in Social Software
- Trust, Distrust and Visibility in Social Software
- Security, Data Protection and Privacy in Social Software
- Appropriation of Social Software in Organizations
- Visualisation and Awareness in Social Software
- Design and Collaborative Media
- Digital Democracy, Digital Rights, Digital Divide

Prospective workshop participants were requested to post a working paper (up to 2000 words) on [the workshop wiki](#), describing their research topic, the methods employed, and their preliminary results/findings. Participants were asked to present their papers at the workshop, and every series of presentations was followed by discussions. The papers had to be posted on the workshop wiki by the 25th of June 2007 and the notification of acceptance was given on July 2, 2007. Commenting on peers' papers was encouraged. All accepted contributions were invited to be presented at the workshop by at least one of the authors. Workshop attendees did not have to register for the [main ECSCW conference](#).

The cost of the workshop was 70 EUR / person. The workshop was organised by core and associated PROLEARN members like Ralf Klamma (RWTH Aachen University), Sebastian Fiedler (Centre for Social Innovation, Vienna) and Ton Zijlstra (Proven Partners) as well from people we learned to know over the last two years in WP 15 like Jan Schmidt (Bamberg University), and Gabriela Avram (University of Limerick). The same is true for the programme committee which consisted of many industry people like Thomas Becker, Buhl Data Service (GER), Karsten Ehms, Siemens Corporate Technologies (GER), Tom Erickson, IBM T.J. Watson Research Center (USA), Thomas Matena, Buhl Data Service (GER), but also of academia both from CSCW and Social Software like Yiwei Cao, RWTH Aachen University (GER), Anja Ebersbach, University of Konstanz (GER), Barbara Kieslinger, Center for Social Innovation (AUT), Stephan Lukosch, Fernuniversität Hagen (GER), Mathias Lux, University of Klagenfurt (AUT), Marc Spaniol, RWTH Aachen University (GER), Martin Wolpers, KU Leuven (BEL), and Volker Wulf, University of Siegen (GER).

In the end the workshop was conducted in Limerick and with the use of YugmaSkype, an extension for Skype because some people were not able to go to Limerick. The workshop schedule is given by the following:

24 September 2007 - Hotel Hilton Limerick - Henihan Suite, 6th floor

Chair: [Gabriela Avram](#)

8:30-9 Registration

9-9:30 Welcome and introductions

9:30-10 [Gabriela Avram](#), Interaction Design Centre, University of Limerick, Ireland,

"Enterprise Social Software Adoption", [presentation slides](#)

10:00-10:30 [Birgit R. Krogstie](#), Norwegian University of Science and Technology,

"Wikis in Software Engineering student teams: Staging the project, managing visibility"

10:30-11:00 - Coffee break

11:00-11:30 [Lilia Efimova](#), Telematica Instituut, Netherlands (remote presentation via Skype& Yugma)

"Employee blogging: personal or work-related?", [presentation slides](#)

11:30-12:00 - [Ralf Klamma](#), RWTH Aachen University -

"What is happening in the long tail? Understanding social software"

12:00-12:30 Antonio Tapiador, Technical University of Madrid (UPM), Spain.

"Distributed Social Software"

12:30-14:00 - Lunch break

Gabriela Avram talked about adoption processes and come up with the following conclusions: It is not "Build it and they will come" but imposition and authority have less influence when it comes to social applications since an organisation cannot be debugged as simple as a program: it happens to be made of people! So, what's missing in enterprise social software?_ First, an understanding that usage and contributions can't be enforced and that a carefully planned and conducted facilitation effort if the benefits are to be realised.

Birgit Kogstie studied the use of wikis in software engineering. A recent field study demonstrates how wikis established by project teams are used to support team-internal collaboration as well as collaboration with external stakeholders. For team-internal purposes, the typical wiki functionality tends to be utilized, whereas cross-community collaboration is often limited to one-way communication from the team. Preliminary findings indicate that the teams succeed in finding a degree of visibility of their project in the wiki that works well for team-internal as well as cross-community collaboration support.

Lilia Efimova studied the use of employee blogs with Microsoft. Here conclusions are: where encouraged, employee weblogs will change how work is organized and how authority is distributed by fostering direct communication across organizational boundaries, from employee to customer, and across group boundaries within organizations. The policy of "be smart" is telling; it becomes more important to have employees who are broadly informed. As we learn to exploit powerful new digital technologies, we may see significant changes in organizational forms; weblogs may be a manifestation of such change.

Ralf Klamma studied the impact of social software on competency roles in companies. As an example he modelled the R&D process in an expressive agent oriented requirements engineering language called i* (cf. Figure 1). Following this approach the success of social software use depends on the interplay of two central competences in R&D project teams: the technical star (sometimes called maven in the literature) who is having the needed technical competences (content delivery) and the organisational star which is essential for the management of social software (network delivery). With this explicit model an algorithmic solution can match actual social software traces like wiki

entries, blogs, emails with the model to find barriers on the people level preventing companies from deploying social software for innovation.

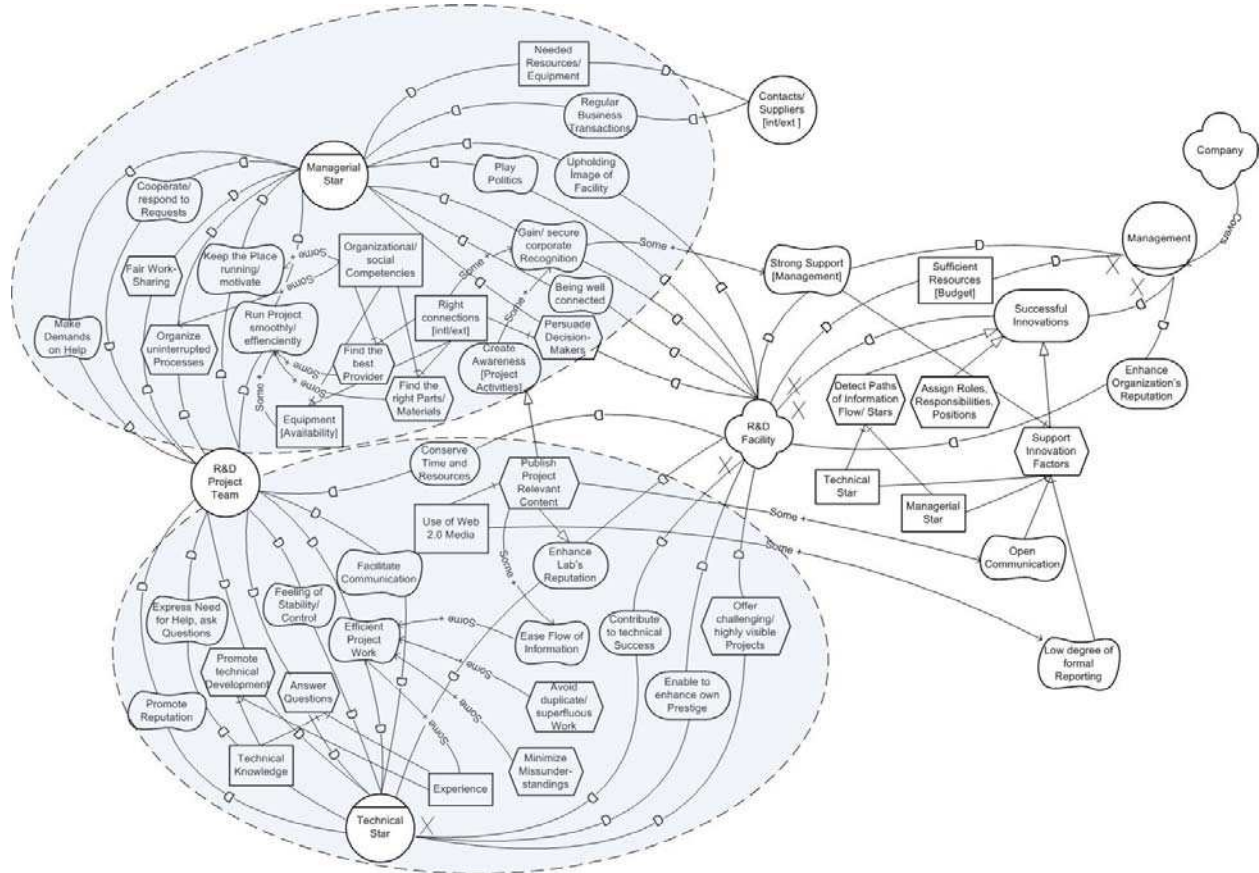


Figure 1: i* model of a social software based R&D process

Antonio Tapiador realized that users identity is fragmented among all the social software sites. People have to sign up and give their personal profile in every service they want to use. He introduced user-centric distributed social software as an architecture for solid user identity, that permits wide sharing of profiles, social artifacts, resources and contacts.

Social Software Track at Professional Training Facts

The track “Social Software: Web 2.0 and Competences” was chaired by Ralf Klamma, RWTH Aachen, Germany and facilitated by two PROLEARN Summer School students, Martin Sillaots and Andrej Afonin.

Web 2.0 technologies, such as wikis and blogs, are more and more used by companies in order to improve internal communication. Furthermore, social software can be used to strengthen the competencies of employees, to develop competencies needed by the company, and generally speaking to maintain and enhance the innovative ability of an enterprise, in particular of medium

sized ones. Therefore, a detailed structural analysis of the different roles within the competence management of the company and the possibilities to support them with Web 2.0 technologies is needed. This track will interlink latest examples from the practitioners' perspective and the research perspective trying to give an outlook on the impact of social software for competence management.

The following presentations were given at the track.

- **Creativity and Innovation** - Speaker: Nalin Sharda, RWTH Aachen University and Victoria University, Australia - Focus: How can training support innovation and creativity? How can innovation and creativity be used in learning?
- **ePortfolios** - Speaker: Paul Meinel, Factline Webservices GmbH, Austria - Focus: Introducing e-portfolio approach to German speaking regions and bringing business processes (in educational and business settings) online.
- **Social Network Analysis in Competence Management** - Speaker: Claudia Müller, University of Potsdam, Germany - Focus: Using wikis for company knowledge management. Demonstrate benefits and practical results of using wikis in companies.
- **Communities of practice and competence management** - Speaker: Ralf Klamma, RWTH Aachen, Germany - Focus: How to manage competences with social networking environments?

A complete report about the event is given in D8.16 but this is a nice example of collaboration among different workpackages like WP 15, WP 8 and WP 9. Katherine Maillet (INT), WP 9 leader, invited all the rapporteurs which took part in the 2007 PROLEARN Summer School for the event and for this special track (Martin Sillaots and Andrej Afonin). To cite them I give their conclusions from their report on the special track:

In modern world everything is changing fast (technology, business models, learning styles). Today business is not only pure competition. It's becoming more close to cooperation. Different companies and employees inside the company are not opponents but partners to each other. Organizations are more and more distributed. Knowledge becomes more distributed and therefore competences as well. How to collect knowledge back together? Social software tools are suitable for knowledge management in distributed organization because they support the work in distributed way. Social software can be used for internal communication (e.g. wiki, blog), development of employees (e.g. portfolio), development of competence (e.g. wiki, portfolio) and for creating professional contacts (e.g. networking environments). Web 2.0 technology is not heavily used in companies because managers are afraid to lose the authority. Technology is new but mentality is old. Usually implementation of the social software environments is sported by few enthusiasts. The last challenge is what happens when this pioneer of social software leave from the company?

The success of implementation of Web 2.0 technology in company depends on how beneficial is this to employees and managers. At first there must be benefit for employees then for company. One example how to show the benefit to employees – workers can take their e-portfolio with them when they change the company. Benefit for managers is that the company's

competences are transparent in ePortfolio. Based on social software tools managers can track the process of knowledge creation in company. Not only the outcome. E.g. in the wiki manager can count the number of articles, links between articles and number of revision of an article per employee. It's important to know that social networks have different leader types - the technical star and the process manager star. When company is using social networking environment for knowledge management, interaction between network members can be tracked and stars recognized. Don't forget that most of the interaction is done in the "long tail". Combine those stars, relate them and your company is successful. The variety of different social software applications is very wide. To select suitable solution from the long list the training is needed. This kind of training course must support creativity to show the benefit of social software in everyday business. The training is innovative when it has innovative content, pedagogy and tasks.

There is long list of different social software applications that can be used for knowledge management in companies. During this track two of them were presented: the ePortfolio and wiki. ePortfolio binds together CV, documents and reflection (e.g. blog). It is focused on individual needs instead of community. Wiki is excellent environment for knowledge creation and sharing - it's open - every employee is qualified to add some information. Based on wiki you can study the collaboration in the company - how many articles, authors, links are there? Who are the centre points in the network? This can make the performance of the company more effective. The problematic issue is the openness of social software. In social software the content is open, environment is open and even the source code of the software can be open. How to find the balance between the openness of social software and protection of companies strategically information? What are the functionalities needed additionally for existing social software tools to make them suitable for private companies? This can be the main focus in social software development in the future.

A Questionnaire for Social Software Impact

The notion of Social Networks as such is quite old and has been researched in many studies in sociology. However, social networks which have evolved in a Web 2.0 era, haven't been studied so extensively, especially when it comes to building these networks using Web 2.0. in companies for knowledge management enhancement or, more directly, for e-learning.

The goal of this survey is thus to compare and contrast how companies (personnel managers foremost) estimate the value of Web 2.0. based Social Networks within their enterprises. As a basis for our study, we have taken ideas from the book "The Hidden Power of Social Networks" (Rob Cross, Andrew Parker. Harvard Business School Press: 2004). The 2nd part of the survey then deals directly with Social Networks, built on the basis of Web 2.0. tools. The survey is intended for both companies already using these tools, so that they can share their views of the advantages or the disadvantages they bring with them, and companies who haven't yet implemented any of these tools, so one could see what their initial stand is. This way, a "before" and "after" comparison is also possible.

The questions in the Web 2.0. Social Networks part of the survey deal with such aspects as:

- Information/knowledge flow within the company
- Value of workers who employ these tools within the company
- Rules of use vs. possibilities of misuse

The survey was sent out to 290 company addresses which were collected from the following sources: The PROLEARN associated partner lists (industries), the ICamp partner lists and from a major study by the Leonardo DaVinci Project Megatrends Project 2007 (http://www.nettskolen.com/in_english/megatrends). Unfortunately, we've got back only 10 responses up to now. So, we have decided not to report any immature or ill-defined results here but to re-try this next year after spending some money to get more and better addresses from a professional trader instead of using any homegrown resources.

Nevertheless, we think it is worth to report the questionnaire itself, to show our approach. We used the PROLEARN Academy as the basic platform for distributing the questionnaire and gathering the answers because there are already Plone plug-ins available to design and distribute the questionnaire. But, we decided to incorporate our usual database IBM DB2 which is backing up all the other services at the PROLEARN Academy like the Publications Database, the Media Base, the Mentoring Services and so on. We decided to split the methodology used in the Cross and Parker book in two parts and first try an online questionnaire after which interested companies could order a second more in-depth social network analysis questionnaire which is only suitable when working directly with employees of a company. In the first online questionnaire we provided three parts; a more general part, a more detailed middle part about formal structures, work/human resource practices and leadership, and a configurable third part related to social software tools. In the first part we asked for the following data: In the first part of the questionnaire we asked typical questions concerning the business, the size and the distribution of a company (cf. Figure 2). The complete list of questions is listed in the annex of this document.

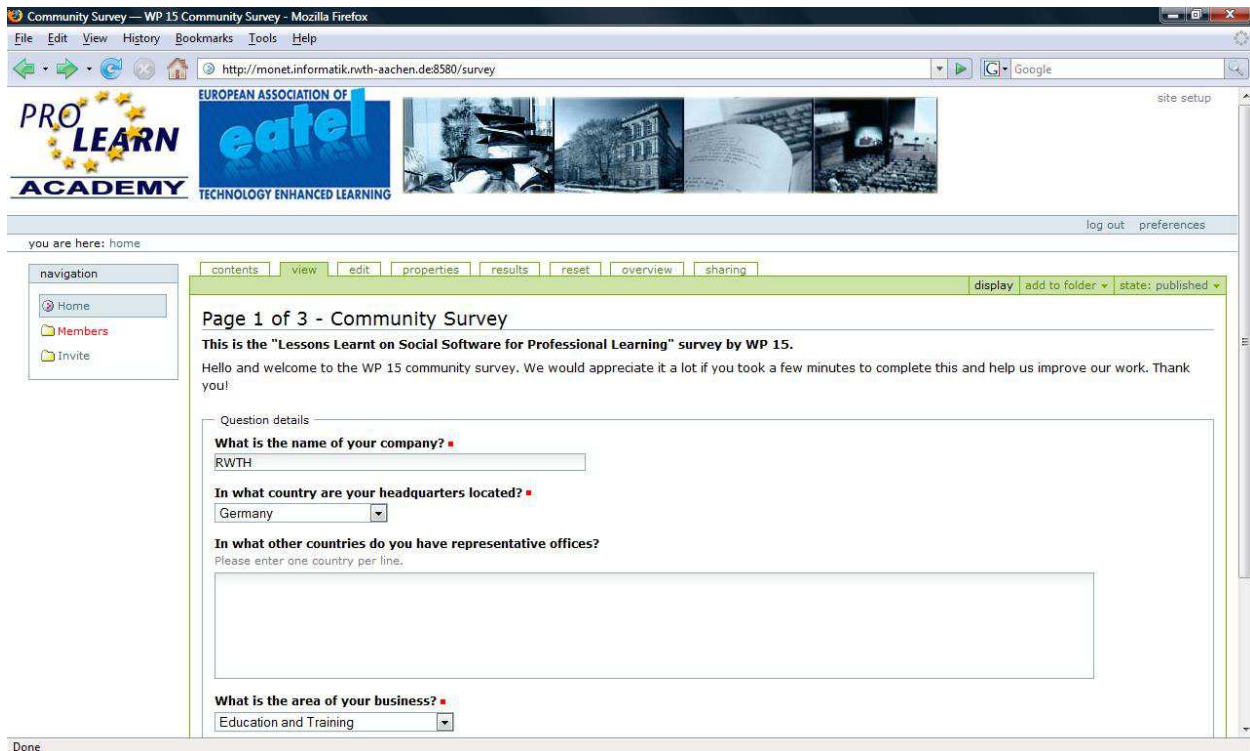


Figure 2: Online Questionnaire – General Part

In the second part we asked some more specific questions about the formal structure, the knowledge management practices, the human resources practices, and the leadership culture. These questions are taken from the above mentioned book. It is called organizational context diagnostic. While we are not doing direct consultancy or analysis projects in the moment, this is an extremely helpful way to “get a sense how aspects of context affect collaboration throughout a network”. These questions can be adapted or picked by managers in surveys or post-workshops.

In the third part the user could configure the questionnaire to answer only questions for the social software tools in use of the company (cf. Figure 3). Here, the online questionnaire adapts itself to the selection of the user. If only one or two Social Software media are selected only questions for those will be shown to the user.

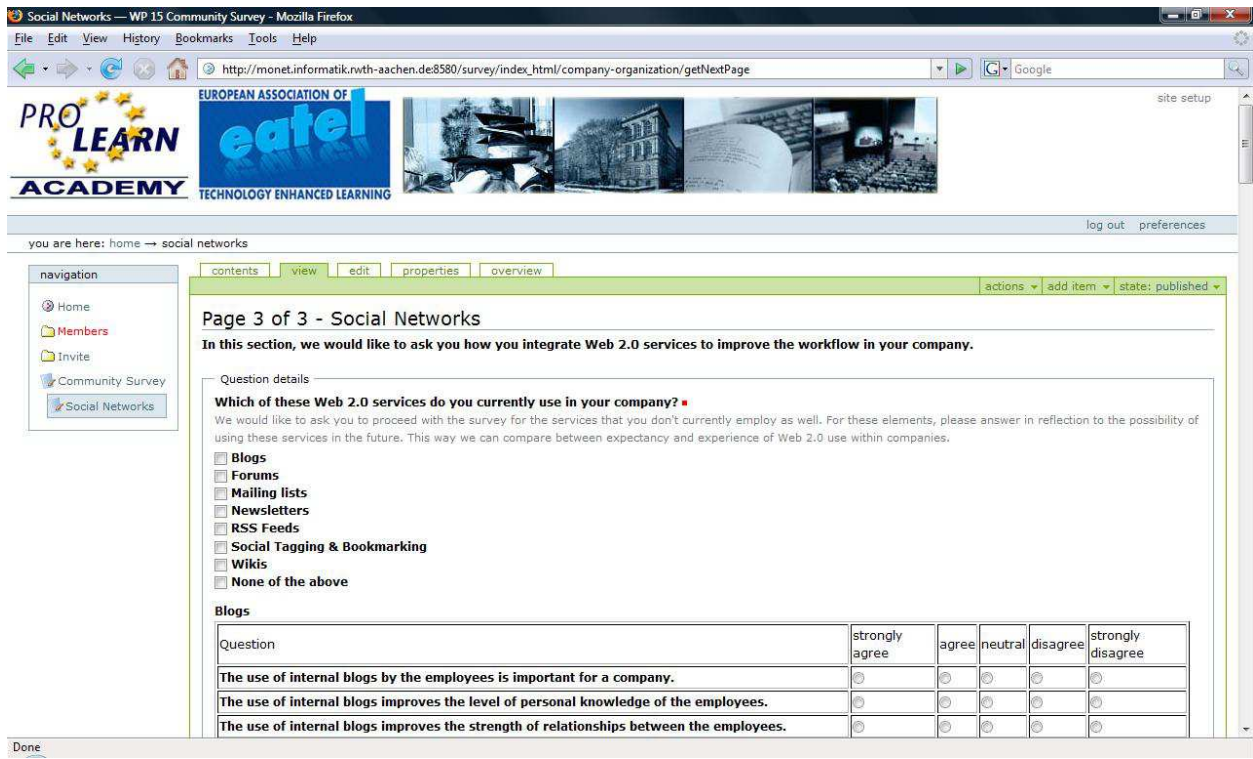


Figure 3: Online Questionnaire – Case distinction in the questionnaire

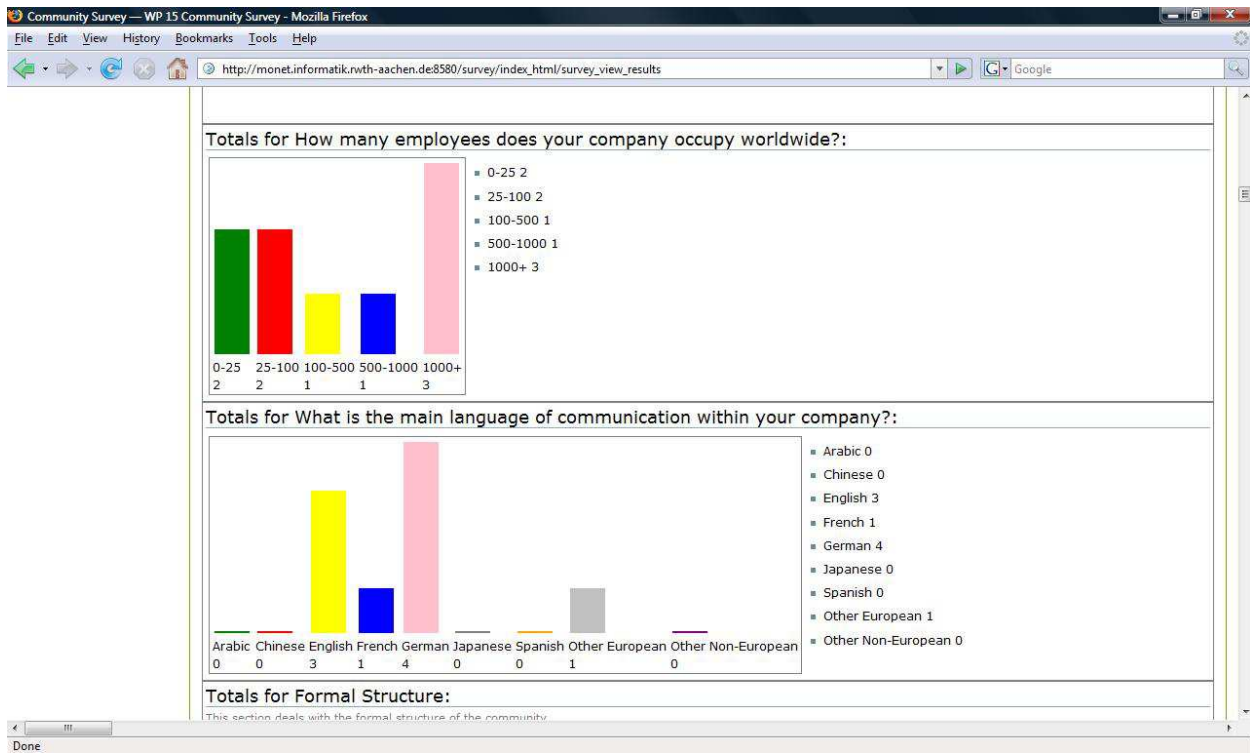


Figure 4: Online Automatic Graphical Evaluation of Questionnaires

In the evaluation part of the questionnaire it is possible to get charts from the database backing up the questionnaire without further knowledge in statistical software or database querying (cf. Figure 4).

Conclusions

Social Network Analysis (SNA) finds it new application area with the boom of the Web 2.0 technologies. In the Mediabase (cf. D15.4) we develop several static and dynamic analysis strategies for different network sizes (cf. Table 1).

Table 1. Analysis Strategies for Social Software.

		Micro Level	Meso Level	Macro Level
Network Size (# of Nodes)		< 100.000	100.000 – 1.000.000	> 1.000.000
Analysis Strategy	Static	<ul style="list-style-type: none"> • Graph Visualization • Structural Patterns 	<ul style="list-style-type: none"> • Community Detection • Small World • Resilience 	<ul style="list-style-type: none"> • Clustering • Cluster Visualization
	Dynamic	<ul style="list-style-type: none"> • Discourse Analysis • Communication Patterns 	<ul style="list-style-type: none"> • Densification Power Law • Shrinking Diameter 	<ul style="list-style-type: none"> • Speed of Change • ?
Social Software		Tail	Shoulder	Head

Within the last two years the Mediabase was continuously developed and materials were collected. The Mediabase will be sustained and integrated as a service in the European Association for Technology Enhanced Learning (EATEL).

The last year of the work package “Social Software” in the PROLEARN network of excellence was a successful one. We have created many highly visible events and publications and had a lot of exchange with different partners which are documented in the deliverables D15.1 – D15.4. D15.5 was planned to report some lessons learnt about from the community and the companies. While in many companies the use of social software is on a level that we would call mature or productive, some companies seem still to look for answers to their pressing questions about what to do with social software. It was also our impression that some smaller countries in Europe like Finland, The Netherlands and Austria are far more advanced than bigger countries like Germany and France. We planned to use our questionnaire to gather initial data on this, but that will have to wait until our next survey. In this sense, this deliverable may leave all of us with more questions than answers. Still, we are committed to a lot of work after the ending of financial support by the European Commission. We, as work package leaders, promise to work past the end of the financing period to answer at least some of the questions raised. We have invited the community and will repeat the invitation to contribute their insights on social software for professional learning. Further dissemination will be realized by the European Association for Technology Enhanced Learning (EATEL) through their portal (<http://www.ea-tel.eu>) .

Appendix

All questions asked in the questionnaire.

Questionnaire Part I

- What is the name of your company?
- In what country are your headquarters located?
- In what other countries do you have representative offices?
- What is the area of your business?

- How many employees does your company occupy worldwide?
- What is the main language of communication within your company?

Questionnaire Part II

Formal Structure

- People in this network are encouraged to reach out to another function for expertise without going through a formal procedure or the chain of command.
- Planning processes and goals explicitly address integration of functions or divisions.
- Planning processes help develop insight as to how integration of disparate expertise could differentiate the organization from competitors or provide value to customers.
- There are components of the organization's budget that focus on funding or supporting projects that integrate people with different expertise or from different functions and divisions.
- There are processes and procedures (or accepted cultural norms) that make it easy for one person to reach out to another hierarchical level without going through the chain of command.
- People in this network know which decisions they are allowed to make and which they need to consult others on (and who those other people are).
- Decision rights are effectively allocated throughout the group so that work is not excessively slowed in order to obtain approvals. Information is effectively distributed in the group rather than people having to turn to someone at a higher level for information to get work done.
- Positions of influence (or committees) in this hierarchy are spread across functions or business units to help ensure integration within and across functional boundaries.
- There are specific roles (such as knowledge managers) or pieces of roles (such as modified staffing coordinators) that help people connect across physical and functional boundaries.
- There are informal or formal liaison roles that establish a point of contact for communication between functions or business units within or outside the group.
- Rotational assignments help integrate this group by creating relationships across boundaries created by function or physical space.
- Communities of practice are supported in a way that helps integrate network across physical, functional, or hierarchical boundaries.
- Internal initiatives, such as committee work, philanthropic efforts, recruiting, and sports, help integrate people in the network.

Work Management Practices

- The employees with the most relevant expertise (rather than just those whom a leader knows and likes) are assigned to projects when they are initiated.
- Once projects are staffed, all employees are encouraged to seek out those with the most relevant expertise (either in the group or elsewhere in the organization).

- Employees have enough time to seek input from others or to make themselves available to help others.
- People are able to shift tasks to the people with the most expertise.
- There are integrated handoffs for products and services that move through different functional areas.
- The physical space in which this group is housed facilitates spontaneous communication.
- A balance of synchronous and asynchronous technologies is used to support virtual work.
- Skill-profiling systems exist that allow individuals to tap into expertise not already known to them.
- Synchronous technologies are employed that allow people to query others or store work products.
- Instant messaging allows for serendipitous interaction.

Human Resources Practices

- This group's recruiting process screens for people who have demonstrated collaborative behaviours.
- This group's recruiting process screens for people with depth and breadth of expertise, which will make them effective integrators across disciplines.
- Orientation practices help new people develop an awareness of who does what in the organization.
- Orientation practices help make the group aware of the new person's expertise.
- Efforts are made to conduct orientation in groups so that new people have a network right from the start.
- There are activities to support new cohorts after orientation, such as ongoing training and informal get-togethers.
- In general, there is an effort to conduct training in a group setting rather than sending individuals to customized programs.
- Professional development plans help individuals develop their personal networks.
- Demonstration of collaborative behaviours is a meaningful component of performance evaluation.
- Performance feedback (at least in relation to collaborative behaviours) is given by sources who have witnessed the behaviour.
- In general, the people who get the largest raises or bonuses are rewarded on their collaborative behaviour.
- This group employees "spot" reward mechanisms for collaborative behaviour.
- People in this group intrinsically value collaboration as a part of their work.

Leadership and Culture

- Leaders of this group envision and structure work as a collaborative endeavour.
- Leaders encourage collaboration in problem solving.
- Leaders focus on involving people who might be on the periphery of networks.
- Leaders help employees build their own personal networks. Leaders are willing to share their networks.
- Leaders direct people to those with relevant expertise rather than forcing people to come to them.
- Leaders are quick to spot points within a network experiencing tensions.
- Leaders of this group are active and effective communicators.
- Face-to-face forums in this group are sufficiently frequent to allow for network development.
- Face-to-face forums are done in such a way that people develop social ties and learn about the expertise of others.
- Face-to-face forums are inclusive rather than the domain of a select few.
- People are committed to a broad goal and set of values that help promote integration throughout the entire network.
- "Stretch" goals encourage people to seek out allies, resources, and solutions across boundaries.
- "Unwritten rules" do not prevent people from working across boundaries, sharing bad news with bosses, or admitting failure.
- In general, this is a safe environment where people are not afraid to admit a lack of knowledge.
- There are sufficient opportunities to develop trust in others.
- People are willing to share information in a draft format rather than perfecting their work first.

Questionnaire Part III

Blogs

- The use of internal blogs by the employees is important for a company.
- The use of internal blogs improves the level of personal knowledge of the employees.
- The use of internal blogs improves the strength of relationships between the employees.
- The use of internal blogs allows for more efficient access to information for the employees.
- Internal blogs raise the individual value for each of the community members.
- Internal blogs lower the production costs within business units.

- Internal blogs enhance the organizational capabilities of a company.
- Internal blogs shorten product development time within business units.
- The use of internal blogs provides for better knowledge management within a company.
- The use of internal blogs improves knowledge exchange within business units.
- Internal blogs provide visibility of the employees' current tasks and work progress.
- Internal blogs raise the productivity of knowledge by the employees.
- The use of emails should be forbidden for the benefit of internal blogs.
- The use of internal blogs can lead to misuse of sensitive business information.
- The use of internal blogs can lead to violations of personal space and time.
- Internal blogs should not be banned to work purposes only. This way their use can be made more popular for the employees.
- There should be strict rules concerning when and where to post new messages.
- There should be strict rules concerning the language used in internal blogs.
- Employees who are frequent posters in internal blogs are highly esteemed within the company.
- Employees who are extensively using internal blogs get rewarded by the company.

Forums

- The use of internal forums by the employees is important for a company.
- The use of internal forums improves the level of personal knowledge of the employees.
- The use of internal forums improves the strength of relationships between the employees.
- The use of internal forums allows for more efficient access to information for the employees.
- Internal forums raise the individual value for each of the community members.
- Internal forums lower the production costs within business units.
- Internal forums enhance the organizational capabilities of a company.
- Internal forums shorten product development time within business units.
- The use of internal forums provides for better knowledge management within a company.
- The use of internal forums improves knowledge exchange within business units.
- Internal forums provide visibility of the employees' current tasks and work progress.
- Internal forums raise the productivity of knowledge by the employees.
- The use of emails should be forbidden for the benefit of internal forums.

- The use of internal forums can lead to misuse of sensitive business information.
- The use of internal forums can lead to violations of personal space and time.
- Internal forums should not be banned to work purposes only. This way their use can be made more popular for the employees.
- There should be strict rules concerning when and where to post new messages.
- There should be strict rules concerning the language used in internal forums.
- Employees who are frequent posters in internal forums are highly esteemed within the company.
- Employees who are extensively using internal forums get rewarded by the company.

Mailing lists

- The use of internal mailing lists by the employees is important for a company.
- The use of internal mailing lists improves the level of personal knowledge of the employees.
- The use of internal mailing lists improves the strength of relationships between the employees.
- The use of internal mailing lists allows for more efficient access to information for the employees.
- Internal mailing lists raise the individual value for each of the community members.
- Internal mailing lists lower the production costs within business units.
- Internal mailing lists enhance the organizational capabilities of a company.
- Internal mailing lists shorten product development time within business units.
- The use of internal mailing lists provides for better knowledge management within a company.
- The use of internal mailing lists improves knowledge exchange within business units.
- Internal mailing lists provide visibility of the employees' current tasks and work progress.
- Internal mailing lists raise the productivity of knowledge by the employees.
- The use of emails should be forbidden for the benefit of internal mailing lists.
- The use of internal mailing lists can lead to misuse of sensitive business information.
- The use of internal mailing lists can lead to violations of personal space and time.
- Internal mailing lists should not be banned to work purposes only. This way their use can be made more popular for the employees.
- There should be strict rules concerning when and where to post new messages.
- There should be strict rules concerning the language used in internal mailing lists.
- Employees who are frequent posters in internal mailing lists are highly esteemed within the company.

- Employees who are extensively using internal mailing lists get rewarded by the company.

Newsletters

- The submission of internal newsletters by business unit leaders is important for a company.
- The use of internal newsletters improves the level of personal knowledge of the employees.
- The use of internal newsletters improves the strength of relationships between business unit leaders and employees.
- The use of internal newsletters allows for more efficient access to information for the employees.
- Internal newsletters raise the individual value for each of the community members.
- Internal newsletters lower the production costs within business units.
- Internal newsletters enhance the organizational capabilities of a company.
- Internal newsletters shorten product development time within business units.
- The use of internal newsletters provides for better knowledge management within a company.
- The use of internal newsletters improves knowledge spreadout within business units.
- Internal newsletters provide visibility of the business unit leaders' current tasks and work progress.
- Internal newsletters raise the productivity of knowledge by the business unit leaders.
- The use of emails should be forbidden for the benefit of internal newsletters.
- The use of internal newsletters can lead to misuse of sensitive business information.
- The use of internal newsletters can lead to violations of personal space and time.
- Internal newsletters should not be banned to work purposes only. This way their reading can be made more interesting for the employees.
- There should be strict rules concerning the frequency and the size of the newsletters.
- There should be strict rules concerning the language used in internal newsletters.
- Business unit leaders who are frequent submitters of internal newsletters are highly esteemed within the company.
- Business unit leaders who are extensively using internal newsletters get rewarded by the company.

RSS Feeds

- Providing RSS feeds for internal news, blogs, forums, etc. is important for a company.
- The use of internal RSS feeds improves the level of personal knowledge of the employees.

- The use of internal RSS feeds improves the strength of relationships between the employees.
- The use of internal RSS feeds allows for more efficient access to information for the employees.
- Internal RSS feeds raise the individual value for each of the community members.
- Internal RSS feeds lower the production costs within business units.
- Internal RSS feeds enhance the organizational capabilities of a company.
- Internal RSS feeds shorten product development time within business units.
- The use of internal RSS feeds provides for better knowledge management within a company.
- The use of internal RSS feeds improves knowledge spread within business units.
- Internal RSS feeds provide visibility of the employees' current tasks and work progress.
- Internal RSS feeds raise the productivity of knowledge by the employees.
- The use of internal RSS feeds can lead to misuse of sensitive business information.
- The use of internal RSS feeds can lead to violations of personal space and time.
- There should be strict rules concerning where and how to apply RSS syndication.
- Employees who frequently appear in several internal RSS feeds are highly esteemed within the company.
- Employees who frequently appear in several internal RSS feeds get rewarded by the company.

Social Tagging & Bookmarking

- The use of social tagging and bookmarking tools like del.icio.us by the employees is important for a company.
- The use of social tagging and bookmarking improves the level of personal knowledge of the employees.
- The use of social tagging and bookmarking improves the strength of relationships between the employees.
- The use of social tagging and bookmarking allows for more efficient access to information for the employees.
- Social tagging and bookmarking raise the individual value for each of the community members.
- Social tagging and bookmarking lower the production costs within business units.
- Social tagging and bookmarking enhance the organizational capabilities of a company.
- Social tagging and bookmarking shorten product development time within business units.
- The use of social tagging and bookmarking provides for better knowledge management within a company.

- The use of social tagging and bookmarking improves knowledge exchange within business units.
- Social tagging and bookmarking provide visibility of the employees' current tasks and work progress.
- Social tagging and bookmarking raise the productivity of knowledge by the employees.
- The use of emails should be forbidden for the benefit of social tagging and bookmarking.
- The use of social tagging and bookmarking can lead to misuse of sensitive business information.
- The use of social tagging and bookmarking can lead to violations of personal space and time.
- Social tagging and bookmarking should not be banned to work purposes only. This way their use can be made more popular for the employees.
- There should be strict rules concerning when and where to bookmark and tag objects.
- There should be strict rules concerning the language used when tagging and describing bookmarks.
- Employees who are frequent taggers and bookmarkers are highly esteemed within the company.
- Employees who are extensively using social tagging and bookmarking get rewarded by the company.

Wikis

- The use of internal wikis by the employees is important for a company.
- The use of internal wikis improves the level of personal knowledge of the employees.
- The use of internal wikis improves the strength of relationships between the employees.
- The use of internal wikis allows for more efficient access to information for the employees.
- Internal wikis raise the individual value for each of the community members.
- Internal wikis lower the production costs within business units.
- Internal wikis enhance the organizational capabilities of a company.
- Internal wikis shorten product development time within business units.
- The use of internal wikis provides for better knowledge management within a company.
- The use of internal wikis improves knowledge exchange within business units.
- Internal wikis provide visibility of the employees' current tasks and work progress.
- Internal wikis raise the productivity of knowledge by the employees.
- The use of emails should be forbidden for the benefit of internal wikis.
- The use of internal wikis can lead to misuse of sensitive business information.

- The use of internal wikis can lead to violations of personal space and time.
- Internal wikis should not be banned to work purposes only. This way their use can be made more popular for the employees.
- There should be strict rules concerning when and where to post new messages.
- There should be strict rules concerning the language used in internal wikis.
- Employees who are frequent posters in internal wikis are highly esteemed within the company.
- Employees who are extensively using internal wikis get rewarded by the company.