



STUDYING KNOWLEDGE TRANSFER WITH WEBLOGS IN SMALL AND MEDIUM ENTERPRISES: AN EXPLORATORY CASE STUDY

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Abstract. Weblogs are widely known as a technology that allows publishing textual content in reverse chronological order, often expressing the subjective points of view of a single or multiple weblog authors. The simplicity and autonomy of weblogs is assumed to play a fundamental role in their popularity and their ability to transform implicit knowledge into explicit forms. In recent years, enterprises began to experiment with weblogs to facilitate inter- and intraorganizational knowledge sharing. Although weblogs have been increasingly adopted in a corporate context, sound exploratory and explanatory knowledge and theories about weblog adoption practices in corporate contexts are missing. A rich toolset of network-analytic techniques exists to analyze the vast amount of electronic traces produced by large weblog networks. However, in small and medium enterprises, electronic traces are sparse due to the lack of a critical amount of weblogs being maintained, and weblog communications are intertwined with offline exchanges. This requires researchers to adopt and develop new analytical techniques and concepts for advancing the state of research on weblogs. Our paper is intended to expand existing research on corporate weblogs by studying weblog adoption practices for knowledge transfer purposes in Small and Medium Enterprises. In this paper, we report selected findings from a case study in which a weblog was used to facilitate knowledge transfer in an SME. The overall contributions of our paper are deep insights into a single case of a weblog adoption in a small and medium enterprise and the formulation of a set of tentative hypothesis.

Key words: weblogs, small and medium enterprises, knowledge management, knowledge transfer

1. Introduction. Weblogs enjoy great popularity establishing a well-known source of user generated content on the Web. They benefit from the current Web 2.0 trend in internet technologies and business models [20] where the focus lies on user-generated content and lightweight service based architectures. Being a ‘log of the web’, the term weblog, attributed to Jorn Barger, refers to websites on which entries are commonly presented in reverse chronological order [21]. Termed as Enterprise 2.0 [16] or Corporate Web 2.0 [26, 29], companies have identified an untapped potential in weblogs contributing to their business goals.

As a socio-technical object of investigation, weblogs frame a broad area for interdisciplinary research. They became a new form of ‘mainstream personal communication’ [24] for millions of people publishing and exchanging knowledge, thereby connecting like minded people and establishing networks of relationships. Weblogs seem ideal for experts sharing their expertise with a large audience, but they also appear suited for ‘ordinary’ people who want to share stories with smaller groups [30]. Exploring the motivation of bloggers on the web, [18] found that blogging is an unusually versatile medium, used for everything from spontaneously releasing emotion to supporting collaboration and community. However, there is also evidence that bloggers value sharing of their presented thoughts without getting the intensive feedback associated with other forms of communication [18]. [7] and [8] characterized blogs as a medium having limited interactivity, compared to e.g. listserv. [8] found the modal number of comments in individual blogs to be zero, indicating the low level of interaction within the majority of weblogs.

In a corporate context, weblogs enjoy popularity in the form of organizational blogs. Often, such blogs are (1) maintained by people who post in an official or semi-official capacity at an organization, (2) endorsed explicitly or implicitly by that organization, and (3) posted by a person perceived by the audience to be clearly affiliated with the organization [11]. Employees are increasingly disseminating information about their experiences and progress at work to the public [4]. From a corporate view, utilization of weblogs has even been heralded as a paradigm shift for the way companies are interacting with their customers. They provide the ability of restoring a human face to a company’s self-presentation with respect to information technology extending the customer relationship [3]. Aiming towards a categorization of corporate weblogs, [33] created a taxonomy describing fields of applications and upcoming challenges for weblogs.

In an Enterprise 2.0 movement [16], companies started to adopt wikis and weblogs, supporting knowledge transfer and aiming to facilitate and improve their employees’ knowledge work. Both tools entail the potential of making the practices of knowledge work and their output more visible and graspable. According to [23], knowledge transfer is the uni-directional targeted transfer of knowledge from individual A to individual B. Knowledge

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sharing is an extension to knowledge transfer, where knowledge flows in both directions, from individual A to individual B and vice versa. Corporate weblogs may contribute to codification and personalization of organizational knowledge [10]. Examining internal weblogs in project management within Microsoft, [6] identified the necessity of further empirical studies on the topic of internal corporate weblogs.

Empirical studies of weblogs from academia exploring internal corporate weblogs remain scarce, and they tend to focus on large scale enterprises, which make up just a minority of all enterprises worldwide. After a brief literature review on literature with explicit focus on weblog networks within large-scale enterprises, we will address the need for empirical inquiries concerning the adoption of weblogs within small and medium enterprises (SMEs). In small and medium enterprises, electronic traces are sparse due to the lack of a critical amount of weblogs being maintained and the weblog communications are often interwoven with offline exchanges. This circumstance requires research to adopt and develop new analytical techniques and concepts for advancing the state of the art on weblogs in small and medium enterprises. Our presented findings are based on an exploratory case study conducted in an Austria SME settled in the ICT industry and employing 50 knowledge workers. We analyze structure and properties of this internal weblog and explicitly probe its impact on knowledge transfer. Our contributions are deep insights into a single case of a weblog adoption in a small and medium enterprise and the formulation of tentative hypotheses to be tested in further studies. Finally, we conclude with a summary and a discussion on the limitation of our research.

2. Related Work. Compared to the number of scientific publications on the topic of weblogs in total, those publications focusing on internal weblogs in corporate settings are scarce. A significant reason may be the fact that it is more challenging for researchers to investigate a weblog within a corporate context. Due to the sensitivity and confidence of the published information, such weblogs are “closed corporate systems”. Because of the access to critical business information published, a close relationship of the researcher towards the enterprise is an inevitable precondition.

Four exemplary publications focus on a single case within a big multinational enterprise having a large set of weblogs [12, 9, 5, 14]. Such a weblog network already owns structures and properties similar to the Blogosphere, a collective term for the population of weblogs on the Web [25]. Solely through examining electronic traces created by weblog users, interesting findings about weblogs have been reported.

To learn more about structures and properties of internal weblogs within organizations, [12] investigated the internal Blogosphere of IBM. The weblog network was visualized as a social graph based on electronic traces, where bloggers and commentators constituted the nodes while the edges symbolized the relationships between them in terms of comments and trackbacks. The authors claimed to be the first to comprehensively characterize a social network expressed by weblogs within an enterprise. They presented new techniques to model the impact of a weblog post based on its range within an organizational hierarchy using mathematical operations but leaving an empirical inquiry open.

[9] explored the social aspects of blogging within an unstated large-scale enterprise using empirical methods of research. They analyzed both motivation of blogging individuals and their practices of using weblogs. Pivotal for their analysis was the observed phenomenon that busy bloggers published almost twice as much comments within weblogs they visited than posts in their own. The authors brought to light that weblogs are able to strengthen the weak ties between bloggers. Furthermore weblogs enabled an informal mechanism to encourage disparate and widespread departments to go for a constructive contact. Weblogs provided good means for employees to establish and maintain personal networks. Busy bloggers did not only create value for themselves, but also for the medium weblog users.

The growing network of weblogs at Microsoft was investigated by [5]. They studied where, how and why employees blogged, how personal the writing was in work related blogs and what happened when blogging became a formal work objective. While Microsoft valued external customer-oriented weblogs, a lot of skepticism existed towards internal weblogs to which no clear business purpose could be attributed. Contrariwise to external weblogs, internal ones were not formally supported by the company. Employees were free to determine whether, when and for what reason they blogged. A lot of bloggers described blogging as a way of sharing passion for their work and communicating directly with others inside and outside the company. Many described blogging as a desire to reveal the human side of a company, while others used weblogs purely for documentation and organization purposes.

[14] discussed roles and challenges of weblogs in internal communication in a large-scale ICT enterprise. They identified a two-dimensional framework based on the type of internal blogs and the related modes of

communication. The authors found that blogs are employed in internal communication to fulfill strategy implementation goals and to foster informal interactions. Furthermore, they hypothesized corporate climate and corporate culture determine the success of weblog adoption. Finding a balance between formal guidance and self-efficacy seems to be inevitable. In the view of the authors blogs offer an effective means for sharing knowledge in organizations in an informal manner.

3. Research Setting. The goal of our research was to probe an internal manager weblog evolving in an Austrian ICT SME employing 50 knowledge workers. The European Union provides a recommendation for classifying SMEs: SMEs are enterprises which employ less than 250 persons and have a maximum annual turnover of 50 million EUR or 43 million EUR balance sheet total. Due to the different basic conditions in SMEs compared to those in large scale enterprises, we also assume different properties and structures of internal corporate weblogs. Our research was motivated by the lack of qualitative studies of weblogs in the context of SMEs. Taken into account that SMEs comprise the majority of all enterprises worldwide, we accentuate the relevance of our study.

We chose case study research as our preferred research technique, because the researched phenomenon, the weblog, can not be separated from its context, i. e. supporting knowledge transfer. According to [32], ‘a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident’. According to the principle ‘use multiple sources of evidence’ [32] different sources of information had been taken into account allowing us to address a broader range of historical, attitudinal and behavioral issues. Any findings such a case study generates are likely to be more convincing and accurate. Following Patton’s recommendations [22], we chose an information-rich case providing many opportunities for learning.

We started investigating the weblog with respect to its property to facilitate the knowledge transfer between manager and employees. A comparison between content of e-mails sent by the manager to all employees and the weblog content is included. Furthermore, we had the chance to interview the manager talking about his goals and the strategies of the organization. We even received a certain amount of control over the weblog, shutting down the weblog for a short period of time. Finally we carried out a survey obtaining another set of findings. Using multiple sources of evidence enabled us to derive more accuracy and relevant hypothesis in contrast to using just a single source of data.

Together with the desktop research conducted, we were able to make the following contributions:

- We showed why a weblog was used in this particular organization and how it affected knowledge transfer. Furthermore we addressed the question of weblog adoption in terms of popularity and how to raise it.
- We studied whether present techniques from internal weblog research are applicable to weblog research in the context of SMEs.
- Researching weblogs in business settings is still lacking scientific rigor. The overall goal of this exploratory case-study was to formulate research questions and to develop tentative hypotheses describing the adoption of weblogs in SMEs.

4. Conducting the exploratory case-study.

4.1. Exploring the artefact. We began our exploration by investigating the weblog’s history of creation: During a critical project meeting, the manager was reporting to all employees hourly but only for a short period of time, thereby adopting a very personal writing style. After the meeting was finished, he expressed the desire to obtain a weblog for future coverage of relevant information.

An instance of Wordpress (<http://www.wordpress.org>) (licensed under the GNU General Public License) had been installed on the Web server of the company. Wordpress provides many features, but most of them remained unused within this case: A blogroll including other weblogs or web-sites which are regularly visited by the author was missing. The manager did neither insert hyperlinks to point to interesting internal or external resources, nor post multimedia-enriched content. Communicating confidential information, this weblog was accessible from the intranet only.

We explored the weblog content from both a qualitative perspective (i. e. what did the manager communicate to employees) and a quantitative perspective (i. e. how often did the manager inform the employees). From a quantitative perspective, we measured operational metrics such as number and frequency of posts and comments. Besides communicating via the weblog, the manager used e-mail as a supplemental channel. In the case of the investigated weblog, the reader group could be limited to the population i. e. ‘all employees’.

The manager mainly used the weblog to share knowledge about tasks accomplished on behalf of the represented organization. Thereby he adopted a subjective informal writing style, typical for weblogs, as [11] mentioned in their paper. The communicated information was of both strategic nature, e.g. including knowledge about contracts, challenges, partner-acquisition or presentation of decisions from strategic meetings, and operative nature, e.g. including reports from business trips and stories about the participation at various events. While information relevant for all employees was shared via the weblog, time-critical information being of particular interest to a limited group of employees was transported via personal talks, telephone calls or e-mails. Time-critical information relevant for everybody was still communicated via internal e-mails to assure the information transported reaches all receivers in time.

TABLE 4.1
Quantitative analysis of the manager weblog

month	number posts	number comments	min time difference	max time difference	avg time difference between posts (in days)
May	8		0	5	1,1
June	5	1	2	14	5,6
July	9		0	7	3,7
August	3		2	21	10,3
September	2		8	18	13,0
October	1		19	19	19,0
November	2		5	24	15,0

From studying the electronic traces we detected (1) a strong decrease of published posts over time and (2) a rise in the average time difference of posts over time. Furthermore, we observed the phenomenon of only one comment being posted during the entire duration of our study. We will seek explanations in the following sections, after extending the research scope.

4.2. Extending the research scope. The analysis of internal weblogs in large-scale corporate settings can be based upon extensive network data that is electronic traces of e.g. relations between a large set of internal corporate weblogs constituted by comments, trackbacks and blogrolls. Unfortunately, techniques that can be successfully applied in large enterprises [12], including network theory and social network analysis based on electronic traces, can not be applied in the same way in SMEs. In the context of SMEs, there is often only a single or a small set of weblogs involved, which renders typical research measures of network approaches [31] such as degree or centrality of weblog networks impractical or even meaningless. Instead, it becomes more interesting how a weblog interferes and interfaces with nodes (actors) that are offline—such as the different stakeholders in an organization communicating with the weblog author. Our situation required extending the scope of analyzing purely electronic traces as done in many studies of weblogs in large scale enterprises or in the Blogosphere to including offline traces of actors, reading or interacting without authoring a weblog themselves.

In this paper we argue that especially for small and medium enterprises—though we expect the same argument to hold for large enterprises as well—traditional means of social network analysis are insufficient, due to the exclusive focus on electronic traces. Analyzing weblogs in SMEs requires methods that include the offline context. There may not be enough electronic traces to accurately understand the structure and properties of weblogs and how they may be embedded into SMEs. Therefore, phenomena which are investigated purely on the basis of electronic traces might turn out to be obvious, biased or simply wrong. Our investigated case involved just one internal weblog.

A social graph based on electronic (online) traces only depicts the ‘internal Blogosphere’ as a very simple construct. We expected commenting practices to play an important indicator for the success of a weblog in terms of popularity. By observing only one posted comment, we first assumed a very low interest of the particular weblog within its possible audience. However, we wanted to learn more about the respective weblog and therefore extended our investigation to the offline actors, as demonstrated in figure 4.1.

4.3. Conducting an experiment. Contrary to the approach from Kolari [12] and our discussion in the prior section, we emphasized that it is very useful to experience the impact of the weblog on nodes (actors) which are offline, not authoring weblogs themselves. We asked the subsequent questions:

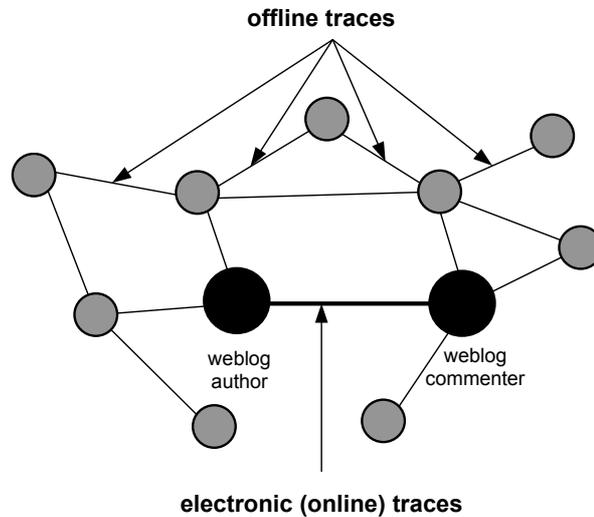


FIG. 4.1. Social graph based on electronic (online) and non-electronic (offline) traces

- How did different actors perceive this weblog in the context of knowledge transfer?
- What were the benefits for employees reading this weblog? Did employees ignore this weblog as a source of information, and if so, why?
- What was the rationale of just one comment being published during the time of investigation?

We setup an experiment: First we deactivated the weblog exactly seven days after a post was created. By sending an e-mail to each of the 50 employees, we asked whether they had read the recent post and were able to recall the content. Our request was repeated once to receive a higher rate of return.

14 employees in total (28%) replied to our request. 11 employees (22%) were able to basically recite the content of the past weblog post. One employee expressed that he did not read the post. Two more employees provided us with an explanation of their rationale being a nonreader. They typically read weblogs within web-based feed readers, but the respective RSS feed could not be subscribed to in this way, due to a strict firewall at place at the organization. Therefore they did not read the posts. This fact clearly depicted a goal conflict between manager and employees. Referring to [27], we assumed further goal conflicts to be a reason for weakening the intended knowledge transfer.

Analyzing the findings of our experiment, we were able to derive the following tentative hypotheses from the experiment:

- Few comments in SMEs' weblogs do not necessarily equate few readers.
- Specific IT infrastructures (firewall) are able to counteract corporate weblog practices, reducing the ability of the particular weblog to facilitate knowledge transfer.
- Studies of weblogs purely based on electronic traces may lead to biased or wrong findings. Having just a single or a small set of weblogs, it is more interesting to examine the impact of the weblog on offline nodes (actors). Social network analysis can be applied as well, but needs offline traces as input data.

4.4. Conducting a survey.

4.4.1. Survey Setup. Our first findings dealing with the actual reading behavior accentuated the need for a more detailed survey. The goal of this survey was to increase the accuracy of our findings regarding motivation of weblog readers and nonreaders. Additionally, we intended to probe to what extent the goal of the manager—using the weblog to facilitate knowledge transfer towards the employees—was achieved.

All employees who were able to remember the last weblog post during our experiment were requested via e-mail to answer six questions concerning their weblog reading practices. This population formed group A—weblog readers. All employees refusing to reply in the experiment were surveyed using a different questionnaire including further four questions. We probed their rationale of not reading the weblog, especially referring to conditions under which they would change their mind. Because we were not able to eliminate the possibility of also addressing readers, we attached the questionnaire for group A to that e-mail as well. All non readers were

TABLE 4.2
Weblog questionnaire(s)

Weblog Survey	
A—Readers	B—Non readers
<i>A1: I read the weblog, because...</i>	<i>B1: I do not read the weblog because...</i>
<i>A2: How and from which location do you read the weblog?</i>	<i>B2: I would read the weblog if...</i>
<i>A3: How often do you read the weblog?</i>	<i>B3: From your point of view, which particular activities are able to improve the knowledge transfer from manager to employees?</i>
<i>A4: From your point of view, is commenting to the corporate weblog post reasonable?</i>	<i>B3.1: Do weblogs account for knowledge transfer instruments?</i>
<i>A5: To what extent is the manager able to improve the weblog from a technical, an organizational, and a content perspective?</i>	
<i>A6: Has the knowledge transfer from manager to employees been improved by the weblog compared to the previous (yes, rather yes, rather no, no)?</i>	

finally added to group B. The qualitative data generated by the respondents' answers was then transformed into quantitative data by defining categories for the answers per question.

4.4.2. Survey Results and Interpretation. We received 40 replies (80%) of 50 possible. Altogether 20 replies were received from members of group A (readers), and another 20 from those of group B (nonreaders).

In the following, questions raised and answers given by group A will be presented. The aim of questions A1-A3 was to examine the motivation of employees reading the weblog. From an organizational perspective, further attention is paid to what extent the manager's goal of informing the employees (a) had been achieved and (b) was in fact achievable by selecting a weblog as an instrument for knowledge transfer.

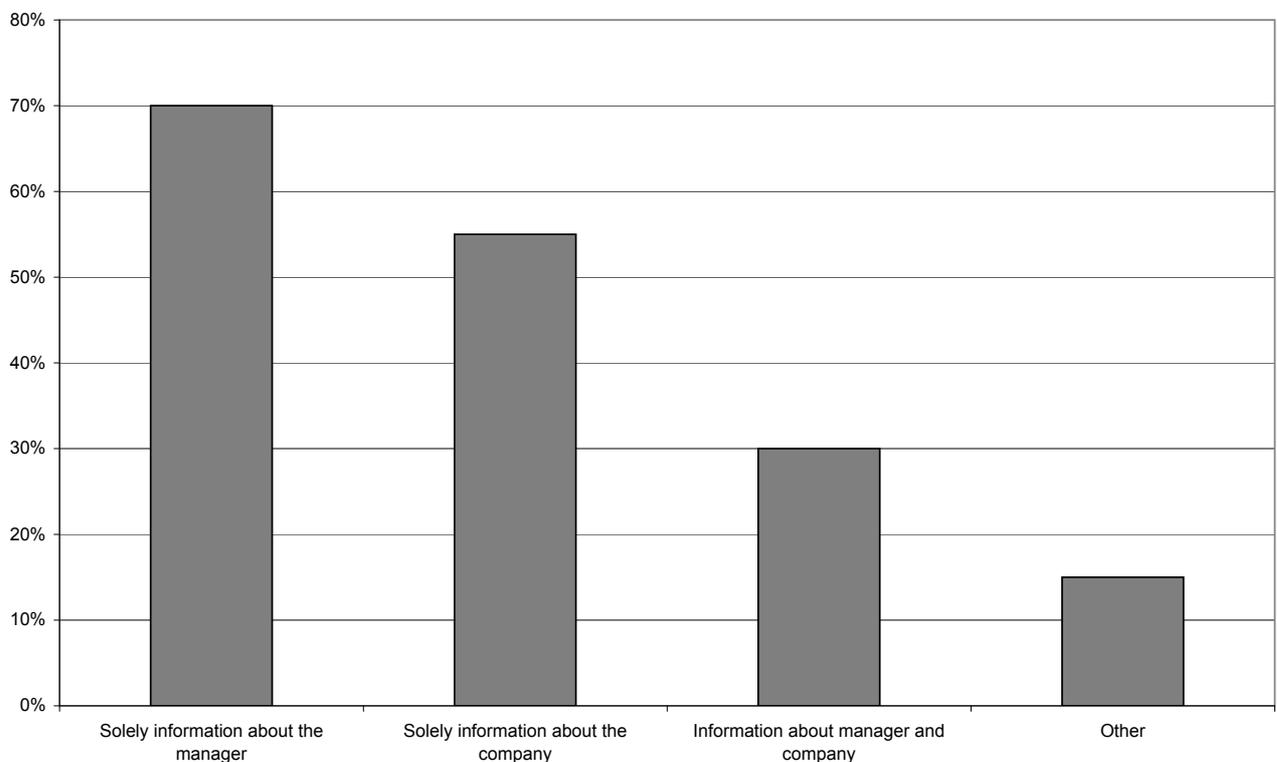


FIG. 4.2. Motivation to read the weblog

Question A1: I read the weblog, because...

Interpretation

Almost all replying employees clearly stated their interest in the tasks the manager was carrying out. They wanted to know, what their manager is actually doing. One third stated a general interest in what was happening within and in the periphery of their organization as well. They were curious about company strategy and organizational development. Solely the knowledge provided by the manager motivated the employees to read the weblog. Even in SMEs, where face-to-face meetings are more frequent and knowledge is diffusing faster due to lacking hierarchical structures, there is a demand for such a kind of codified knowledge from a prominent knowledge barrier. It appears that making the knowledge of a manager explicit by utilizing a weblog will stimulate a group of employees to read the weblog in corporate settings.

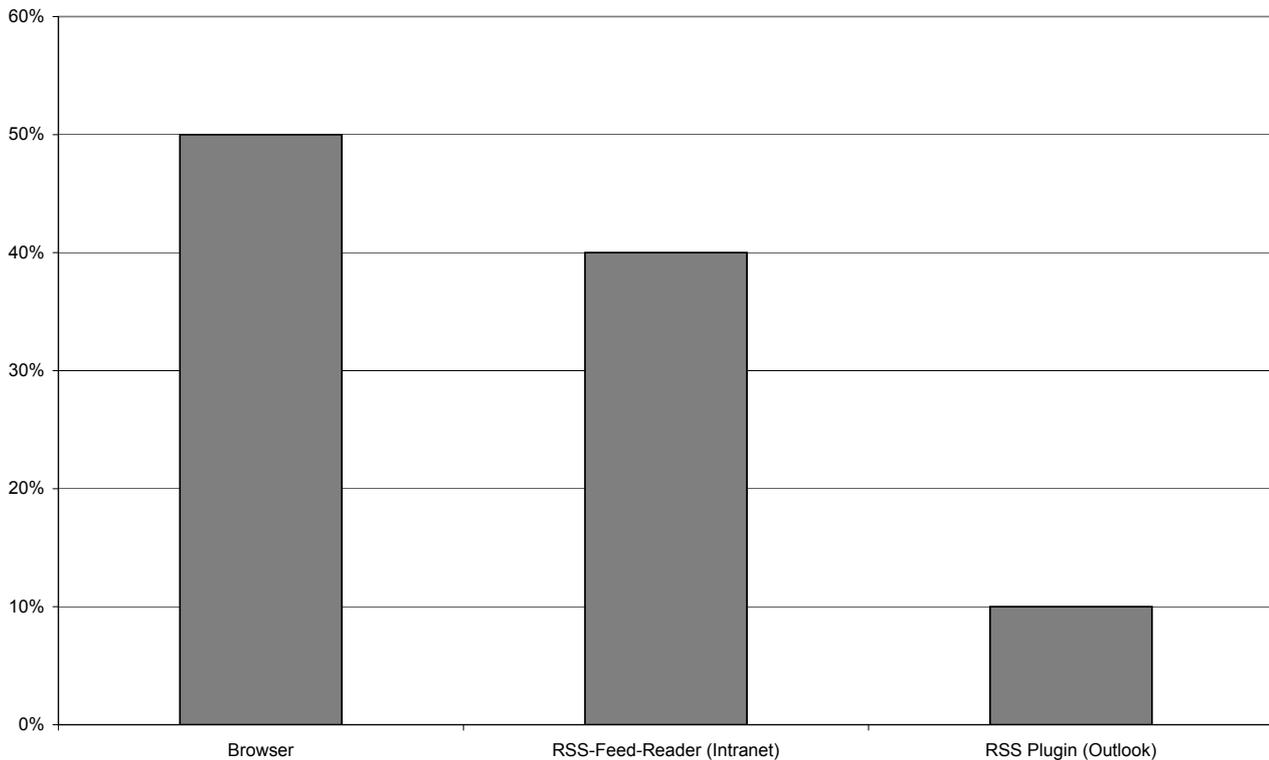


FIG. 4.3. Tools for reading the weblog

Question A2: How and from which location do you read the weblog?

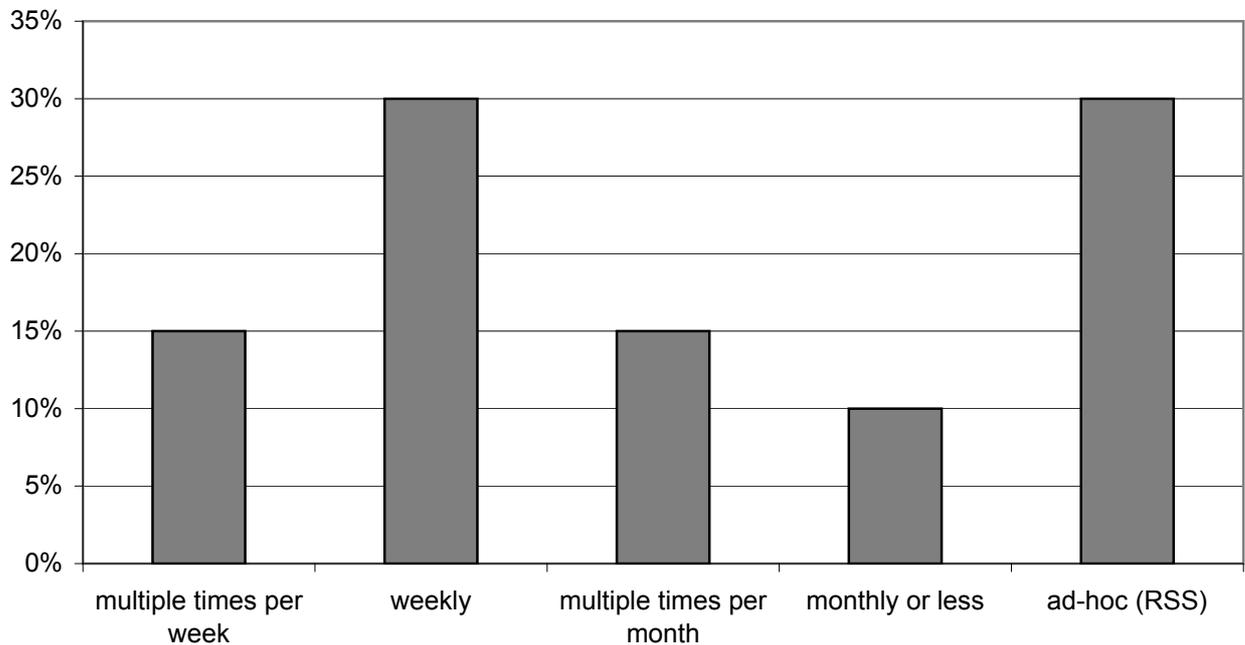
Interpretation

Ten employees used an ordinary Web browser, explicitly mentioning Internet Explorer and Mozilla Firefox. Eight employees used RSS feed readers, while two employees went for an open source RSS plugin for Outlook. 16 employees read the weblog solely within the office and three employees explicitly addressed the access restriction, which we were also pointed out in our experiment. Because of the access restriction, employees were unable to use web-based feed readers. This constraint can conflict with the employees' weblogs reading practices. Reading weblogs by subscribing their feeds is more efficient than browsing them. However, half of the readers used a web browser to periodically scan for new posts in the explored case. We assume personal training to be crucial for establishing effective weblog practices.

Question A3: How often do you read the weblog?

Interpretation

Half of the employees browsed the weblog for newly created posts at least once a week, while five employees visited the weblog more infrequently and in broader intervals. From these findings, we assumed reading this particular weblog is more like a scan for newly created posts. Only a minor group subscribed to the RSS

FIG. 4.4. *Weblog reading behavior*

feed, being notified after a post was published. Our results suggest that further training on (available) weblog functionality is required even in ICT companies.

The following question was aimed at exploring the reason of only one comment being posted during the time of investigation.

Question A4: From your point of view, is commenting to the corporate weblog post reasonable?

Interpretation

Eight employees positively answered this question and quoted to mention different points of view to the author, including additional information and aspects which had not been taken into consideration yet. Six employees clearly answered with 'no': The weblog was purely perceived as a unidirectional knowledge transfer medium, not a platform for sharing knowledge. The remaining employees argued that reasons both for and against comments exist. We found this question to be stated in some ambiguous way, therefore failing to deliver an answer according to our intention exploring the rationale of non-commenting within *this* particular weblog. Therefore, we try to recommend answers referring to the respective literature on virtual communities, discretionary databases and knowledge sharing.

From a virtual community research perspective and with respect to [19] the observed behavior can be termed with 'lurking', when only a marginal fraction of community members actively posts content. Lurkers constitute the majority of users in electronic forums and platforms. They for example want to remain anonymous and preserve privacy and safety, have no knowledge to offer, or simply do not feel a specific need to post.

By analyzing the social dynamics underlying knowledge sharing, [1] provide a socio-economical explanation for the identified phenomenon, the so called knowledge sharing dilemma. They treat knowledge sharing as a problem of social cooperation, manifesting in a social dilemma. In such a dilemma, individuals maximize their own pay-off for the collective's loss. The SME employees may see little reward for sharing their knowledge in the weblog and therefore they abstain.

When researching discretionary databases, analyzing the individuals' voluntary contribution to an interactive medium, [28] found discretionary information generally undersupplied. Although the technology for storing and distributing information is advancing rapidly, Thorn and Conolly see little evidence of parallel growth in the understanding of how this potential can best be harnessed. Due to their simplicity, Weblogs may reduce the

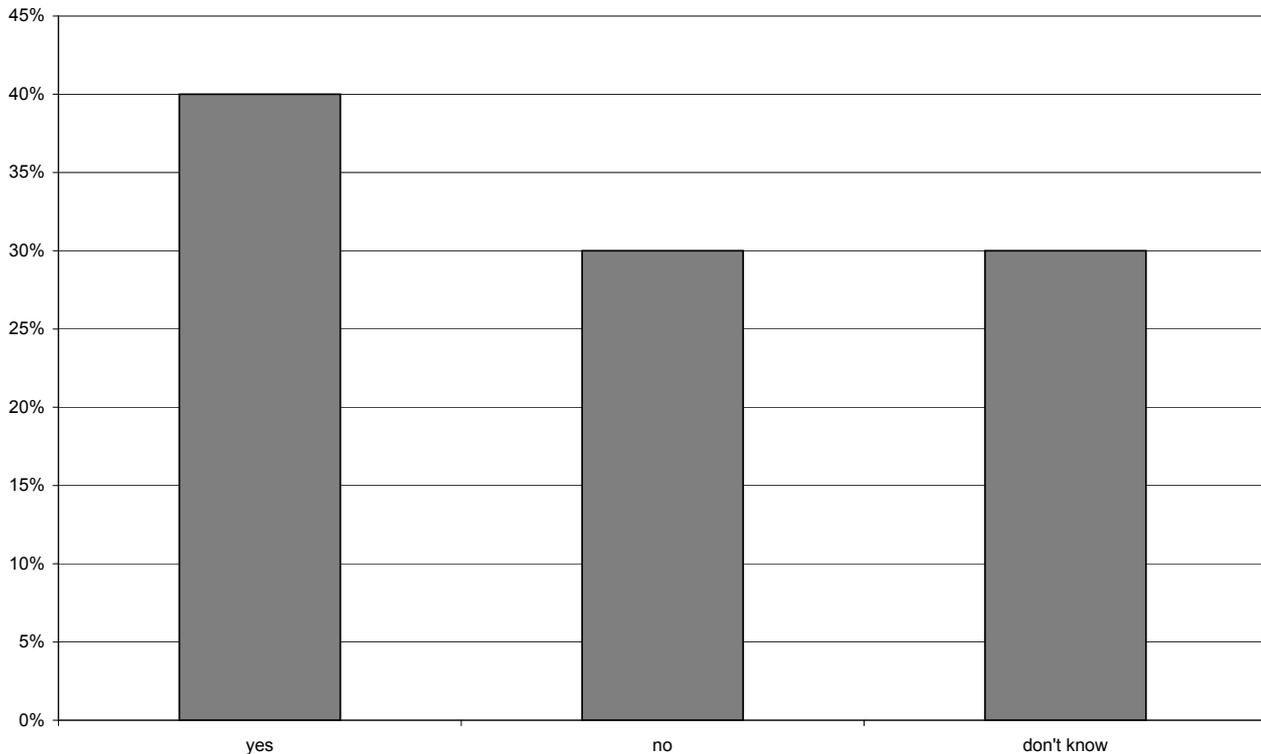


FIG. 4.5. *Commenting to a weblog post*

individual effort to contribute knowledge. However, there are still costs for individuals, related to the process of making the knowledge explicit and available in a comment, and to the social dynamic the comment may cause in the SME.

An overall question for all knowledge managers adopting weblogs deals with the rationale for users sharing their knowledge: A known motive for users is to increase their individual pay-off by sharing knowledge. The higher the value for knowledge sharing for the individual, the greater the motivation will be [1]. A lot of people conditionally cooperate in public good games. Suchlike individuals will cooperate, if others will cooperate, too. Vice versa they will defect, if others stop the cooperation. Even if participants meet again, such a behavior can be observed [13]. If people expect to retrieve useful knowledge in return, they are willing to contribute knowledge [2]. This behavior can be related to the concept of reciprocity. Knowledge sharing may even lead to a higher reputation [2] of the knowledge sharer. A high reputation can be seen as a means to advance in career, to be recognized as an expert or to retrieve a better payment. Social norms and social pressure also have an influence on the knowledge sharing practices [17]. Behavior rules enforced by sanctions of a group can arise in a scorn of the others if one will not contribute to a knowledge repository. Individuals believing their contribution valuable to others may contribute [15]. This is perceived efficacy, when somebody believes his/her individual contributions help to achieve a common goal. Furthermore, a sense of group identity and a sense of community have a positive influence on the contribution to knowledge repositories [13].

[1] suggest three possible solutions of the knowledge sharing dilemma: (1) restructuring the pay-off function, (2) increasing perceived efficacy of individual contributions, and (3) establishing group identity and promoting personal responsibility. According to the theory, the manager could have different options in our explored case: Individual pay-off can be increased by increasing the benefits perceived. For instance employees may be convinced to make comments in blogs, if they are shown that they can take part in decision-making processes by providing immediate personal feedback to the manager. Thereby they may also ease their own work and earn reputation, thus increasing their professional status. If the manager would clarify that feedback is appreciated and valuable to other employees, this may increase the perceived efficacy and lead to more frequent discussion. In principal, group identity in a SME may be higher, compared to large scale enterprises. However, communication

via a weblog may even further enhance group identity, which is beneficiary for the development of an enterprise. The manager should encourage communication via the weblog and promote a sense of belonging to the community composed of employees. Until now, no promotion activities concerning the weblog have been conducted.

Approximately half of the employees were reading the weblog. The goal of the next question was to study the barriers involved, when adopting internal weblogs in the context of SMEs.

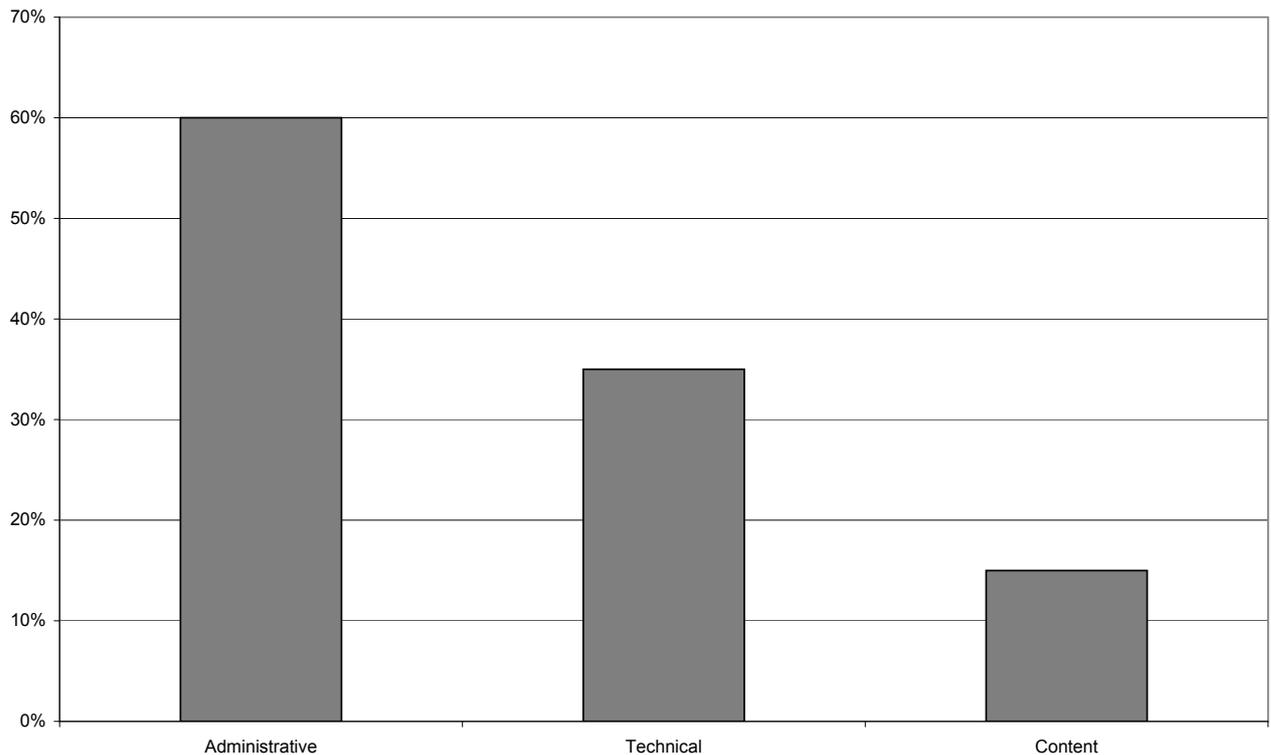


FIG. 4.6. *Improving the weblog*

Question A5: To what extent is the manager able to improve the weblog from a technical, an organizational, and a content perspective?

Interpretation

All employees reading the weblog perceived the content as appropriate for their demand of knowledge, few of them mentioned to integrate hyperlinks to (external) resources. From an administrative perspective, the most substantial criticism given by the employees dealt with the perceived low frequency of posts. Nine employees explicitly requested a higher number of posts and three employees accentuated a call for a higher frequency of comments, too. A higher number of post seems to be one necessary factor for (corporate) weblogs to be successful. By achieving a higher number of comments, because of reciprocity, more employees could be encouraged to add comments on their own, facilitating knowledge sharing. Two employees requested to utilize categories, hence clustering weblog posts and making them easier retrievable. From a technical perspective, three employees argued for making the weblog available from places outside the office. The weblog design was criticized by three employees as not being very professional.

The substantial goal of the manager was to improve knowledge transfer towards the employees. The closing question for group A addressed, whether the weblog had contributed to achieve that goal.

Question A6: Has the knowledge transfer from manager to employees been improved by the weblog compared to the previous (yes, rather yes, rather no, no)?

Interpretation

Nine employees answered 'yes', seven employees 'rather yes'. The weblog constituted a new medium for knowledge transfer from manager to employees, and the information communicated was of sufficient relevance

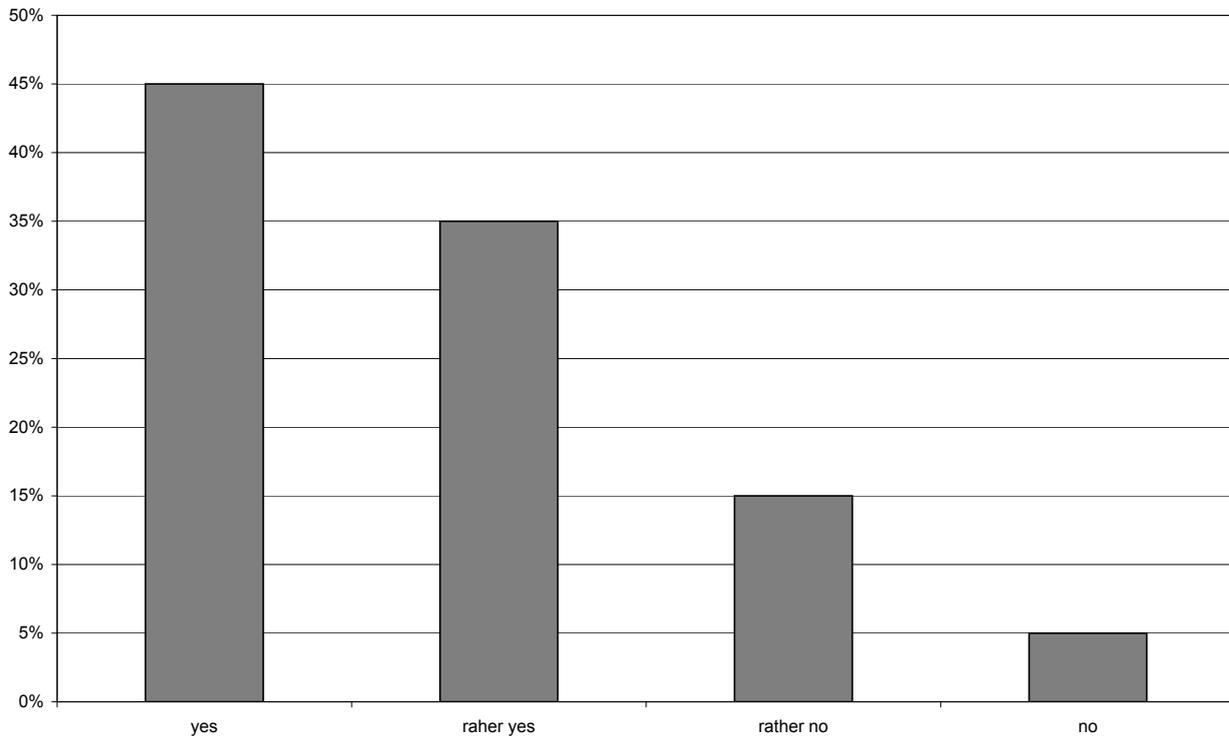


FIG. 4.7. *Better knowledge transfer through blogging*

to read the weblog. Three employees stated 'rather no' reasoning with the low frequency of posts, while one employee answered 'no'. Past research on knowledge management led to a broad range of knowledge transfer instruments, which were proposed to facilitate knowledge transfer by means of organizational, sociological and technological approaches [27]. In an SME context, someone could argue that technological facilitators might be unsuitable as opposed to organizational or sociological instruments. However, we found an internal weblog to provide a good technological facilitation of knowledge transfer, even in SMEs where the number of possible recipients is lower and hierarchies are flat, compared to larger enterprises.

Subsequent, the results of the surveyed group B are displayed. Questions B1-B2 dealt with the rationale of employees not reading the weblog.

Question B1: I do not read the weblog because...

Interpretation

The majority consisting of eight employees denied reading because they simply forgot either the existence or the URL of the weblog. Since its introduction as a new information portal, only one e-mail had been written by the author to promote the new weblog. Three employees criticized the weblogs's lacking ability to be read via web-based feed readers. Two employees did not read weblogs at all and one employee argued a lack of time for reading activities beside the work tasks.

Weblogs provide good means to store and archive knowledge and make it easily accessible to (new) employees. Explaining the weblog's goals to employees might help to establish it as an effective tool for knowledge transfer and / or sharing. If done so, the employees will better understand why they should read the weblog, and which individual benefit they generate by doing so. Such a status could be achieved by the help of promotion activities, which are crucial even in SMEs to sustain a weblog in its initial phase. If neglected, the weblog could remain unknown to new employees and some may even forget its existence.

Question B2: I would read the weblog if...

Interpretation

Nine employees did not see any relevance in the published content with respect to their personal work tasks, or used different channels to obtain requested information while the weblog did not provide any new insights

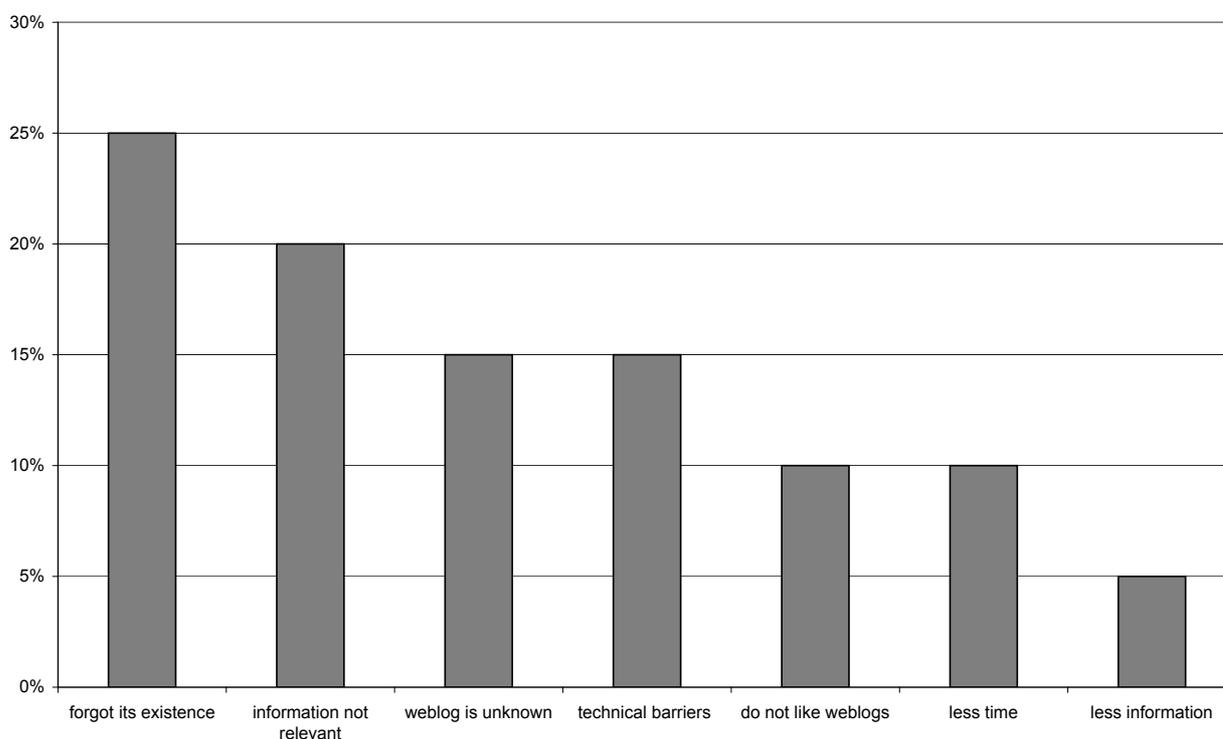


FIG. 4.8. Arguments against reading the weblog

to them. Six employees indicated to read the weblog if they received a notification for new posts created, for instance via email. Three employees stated to read the weblog, if it were accessible from the web allowing subscription with web-based feed readers. Due to the fact that the author of the weblog conducted almost no promotion, new employees did not learn about its existence. However, three employees were not able to provide a rationale for their non-reading behavior and promised to read the weblog in future.

One common argument for weblogs is its potential to reduce information overload and interruptions, which are often both caused by emails. However, certain employees might favor solutions based on push-mechanisms over those based on pull-mechanisms. As a result of his research in Enterprise 2.0, [16] also described knowledge workers preferring channels over portals. Adopting weblogs is different to using email and on this account affords proper training among the employees for effective usage in corporate communication.

Questions B-B3.1 addressed, whether a weblog is perceived as an instrument for knowledge transfer by the nonreaders at all. Besides that, we wanted to examine preferred knowledge transfer instruments from an employee's perspective.

Question B3: From your point of view, which particular activities are able to improve the knowledge transfer from manager to employees?

Interpretation

Prior to this survey, we assumed that *nonreaders* would not perceive the weblog as an instrument to facilitate knowledge transfer, but interestingly eight employees did. Besides that, personal talks, meetings, email, jour fixes and informal talks were named. Six employees placed importance on personal meetings between manager and employees. Our results show, that employees in SMEs seem to request more closeness towards their manager. On this account employees could prefer face-to-face situations, although effective and efficient tools to support internal communication, including weblogs, are available.

Question B3.1: Do weblogs account for knowledge transfer instruments?

Interpretation

More than two third of the employees acknowledged weblogs as facilitators of knowledge transfer, explicitly naming asynchrony, ease of transporting information, little effort for operation and the informal narrative

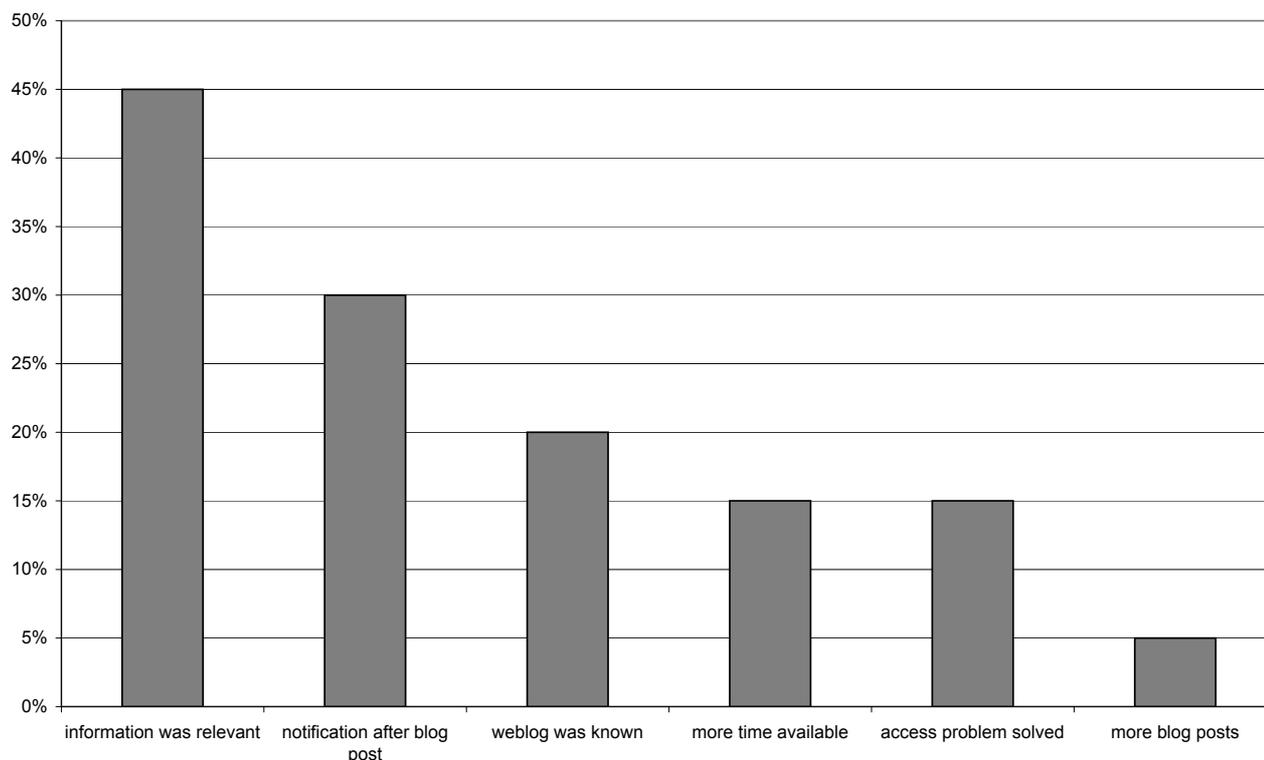


FIG. 4.9. Motivation for reading the weblog

style as essential criteria. Five employees negated, thereby mentioning the huge effort of retrieving relevant information. Notifications of new posts were not provided in this case, either. In addition, informal information channels seem to be available in a manageable number in SMEs. Moreover, they are easily accessible by anybody, rendering information communicated via the weblog unnecessary. Furthermore, information relevant for daily work assignments was not published. Weblogs seem effective, if people are capable to effectively use them. However, this may require intensive personal training both technical to operate the weblog and practical to accurately use the weblog.

Summarizing our findings, we derived the following tentative hypotheses for validation in further studies:

- Weblogs will be read, if they provide sufficiently interesting content that is not available from alternative sources.
- The frequency of posts illustrates a key factor for weblog success in terms of popularity. A low frequency constitutes a barrier to perceive the weblog as a knowledge transfer instrument.
- Commenting to weblog posts leads to a change of the knowledge workers' perception of the weblog as a pure information portal, hence facilitating knowledge sharing.
- Lacking skills and personal weblog practices lead to an ineffective utilization of weblogs in terms of knowledge transfer, e.g. when employees demand notification features that are available but unknown to them.
- Weblogs require training, both in functions and practices on the side of the blogger, as well as on the side of the readers in corporate settings to sustain effectiveness and efficiency.
- Access restrictions regarding tools and/or location will conflict with weblog reading practices, potentially resulting in dissatisfaction.
- Weblogs have to be promoted by the authors to effectively use them as facilitators of knowledge transfer.
- Internal weblogs in SMEs are able to improve knowledge transfer in principle.
- Employees will have limited desire to read the weblog if they perceive the relevance of the published content too low with respect to their daily work assignments.

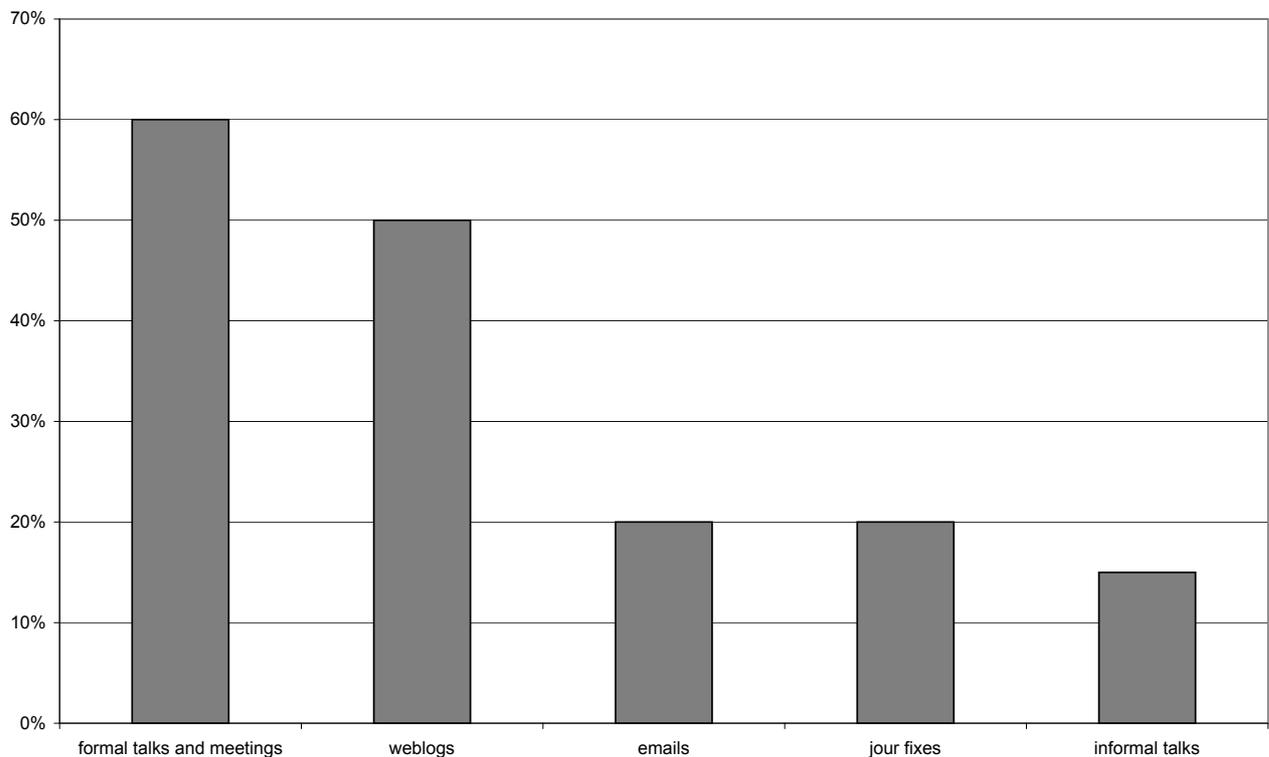


FIG. 4.10. *Instruments improving knowledge transfer*

5. Limitation of research and future work. The motivation for our single-case study was based on the fact that known preliminary academic case-studies focused on large-scale enterprises, but most of the enterprises worldwide are made up of SMEs. We intended to advance weblog research to an SME context, referring to their large population.

However, one limitation of the findings generated by our study is noteworthy: First of all, data for deriving our hypotheses was generated by only one weblog in one SME. Single-case studies provide limited utility for generalization. However, unlike surveys, case studies do not make inferences about a population (or universe) on the basis of empirical data collected about a sample [32]. In contrast to methods based on statistical generalization, case studies do not reason about the selected cases as being sampling units. Individual cases are to be selected as a laboratory investigator selects the topic of a new experiment [32]. If we had conducted a multiple-case study, the developed tentative hypotheses would have a stronger basis, allowing replication of findings. Keeping that in mind, we intend to test the hypotheses derived within further case studies to investigate whether corroboration may be achieved.

6. Conclusion. Our exploratory case study aimed at generating findings about internal weblogs in SMEs from a knowledge management perspective. The overall contributions of our paper are deep insights into a single case of a weblog adoption and the formulation of a set of tentative hypotheses. Our study constitutes a first step for more comprehensive investigations. In conclusion, we outline our contributions to organizational weblog research in a nutshell.

Unsurprisingly, it seems, that weblogs also suffer from the knowledge sharing dilemma, although through their simplicity, they will significantly reduce the cost of contributing knowledge. A high frequency of posts may constitute one key factor for weblog success in terms of popularity. However, a low number of comments does not automatically equate a low number of readers. Our results suggest, that techniques from weblog research including social network analysis, which are purely based on electronic traces, may lead to invalid findings if applied in the context of SMEs having only a single or a small set of weblogs. Our findings suggest that employees, who do not author weblogs themselves, together with their offline traces, should be explored.

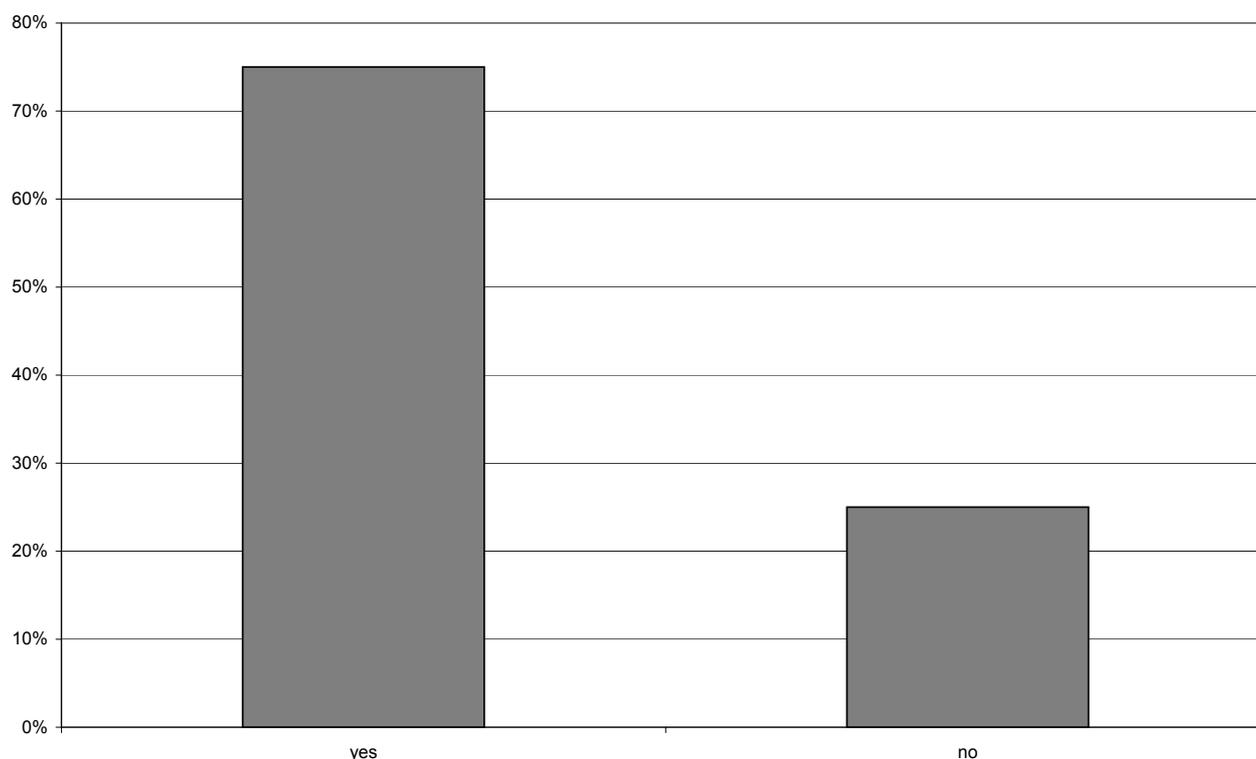


FIG. 4.11. *Are weblogs knowledge transfer instruments*

As our exploration revealed, weblogs do not run like a clockwork, but have to be actively and professionally promoted, even in SMEs where the number of employees is lower and group identity may be higher. A tighter involvement of readers posting comments might increase their perceived efficacy, thus leading to a livelier, and perhaps a more effective weblog facilitating knowledge transfer and sharing. Having more employees publishing content may also increase reciprocity, attracting more and more fellows.

We found that knowledge made explicit in a weblog by a prominent knowledge barrier (e.g. a manager) alone stimulates a high motivation for a group of people to read the weblog. It seems that employees will prefer weblogs providing information, which is of sufficient interest or direct relevance for their work assignments and not available from other channels. Explaining the goals of the weblog to employees frequently will remind them to keep in touch with the weblog.

We found that specific IT infrastructures could establish barriers, colliding with the reading practices of the employees. Our results suggest removing these obstacles through proper training on corporate weblog practices and functions, whenever possible. This will reduce possible dissatisfaction amongst the employee which is caused by ineffective usage patterns.

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