Personal Knowledge Management – current stage and critical success factors

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Abstract: This paper focuses on the enabling and critical success factors of personal knowledge management (PKM). From a literature review and desktop research the thesis was derived that the appliance level of personal knowledge management is currently very low and the embedment in the organizational context is poor. To proof the thesis a questionnaire was elaborated and a survey was carried out. The target audiences of the survey were managers from different companies. The results of this survey showed, that all managers actively manage their personal knowledge. They use personal knowledge management tools and technologies, but rarely embedded in a conscious and methodical context. The existing knowledge management methodologies are mostly unknown. The most important findings are that the subject of personal knowledge management is widely known but training in skills and methodical aspects is needed and educational courses therein would be very welcome. The development of the semantic web and improvements in the human-computer-interface (HCI) are critical success factors for personal knowledge management. The results of the survey proof that the usage of personal knowledge management and also the embedding in the organizational context is quite high. Therefore the initial thesis does not hold true.

Keywords: Knowledge Management, Personal Knowledge Management, KM, PKM

1. Introduction

1.1. Motivation

Business information specialists are facing the problem of knowledge management (also referred to as KM) every day in their business life. In an environment where dependencies and complexity tend to raise, the management of knowledge can become a critical success factor for companies. Thus, knowledge management has shifted from a buzzword to a well-established area on an organizational level within the last couple of years.

However, when it comes to the individual decision-making, knowledge management often does not provide the proper answers to the question that have during our work. These questions are:

- Where do I save and share my knowledge?
- How do I connect my knowledge to the knowledge of other people in an organizational context?
- How can I access my knowledge at my fingertips?
- How can I easily organize and manage my knowledge and distinguish between important and unimportant knowledge?
- How can I extend my knowledge?

This is where personal knowledge management (also referred to as PKM) comes in. It focuses on our personal background, our personal need and our personal goals – and thus it supports us in our daily business life.

Thus, we are not only hoping to find some answers to our own questions above, but to find a true support for ourselves in our own life when it comes to the management of our own personal knowledge.

1.2. Research Approach and Goals

Based on the literature review, we will derive a thesis about PKM. This thesis will be the starting point for a survey we conduct that

addresses managers. Next to the thesis, we will in particular focus on the following goals:

1. Current stage of PKM
   - Objective:
     Describing the awareness, perception and importance of PKM in an organizational context.
   - Questions:
     Are managers aware of PKM? Do managers consider PKM important and interesting for their daily work and life?
2. Supporting tools and technologies
   - Objective:
     Identification of the instruments and technologies that are currently used to support PKM.
   - Questions:
     Which instruments are used by managers in order to support PKM? How many tools are used and what technologies are considered for PKM? How satisfied are managers with current PKM instruments?
3. Critical Success Factors
   - Objective:
     Identification of the enabling tools and technologies and the critical success factors to support PKM.
   - Questions:
     What do manager consider important regarding PKM? What tools and technologies must be present in order to provide an added value to managers?

Based on the results of the survey, we will answer the above questions and compare them to our thesis that we have derived during the literature review.

1.3. Boundaries

The paper focuses on two main points, the usage and patency of PKM from managers and their companies. To guarantee that we get enough information the literature study, the questionnaires as well as the analysis are aligned to these two points.

This work does not differentiate between implicit and explicit

2. Literature Review and Thesis Derivation

This chapter covers the current body of knowledge regarding KM and PKM. Furthermore, it will treat the related tools and technologies, their current stage and their possible further development.

These parts will lead to the derivation of the thesis and build the base of the further analysis.

2.1. KM and PKM

The discipline of knowledge management (KM) is not new – it is widely known and has become increasingly important to organizational performance in the last decade. KM has reached a status as a management discipline (Völkel, 2009) and management has understood that the company's knowledge base is an important and valuable asset that has to be managed and further developed. But since many KM initiatives in organizations have run into difficulties at the implementation level, attention has shifted to the human dimension of KM (Abshavalka, 2005) focusing the individual knowledge worker. Incrementing the knowledge workers productivity has to be a company's main goal, not just storing documents in databases (Völkel and Haller, 2009).

The personal knowledge management (PKM) is a sub discipline of KM and primary focus on the knowledge management of one human and secondary how this knowledge can be organized, retrieved and managed. According to Völkel (2009) the discipline PKM can be divided into two dimensions. The first dimension is the personal knowledge that deals with all tools and methods (e.g. model personal knowledge for a fast recall) to improve the possibilities for the individual to work better with his knowledge. The second dimension is the personal management that involves with the systematic organization (e.g. task management) about the how and why the knowledge will be managed.

Reinmann and Eppler (2008, Page 54) defined an overview for personal knowledge management (translated by the authors).

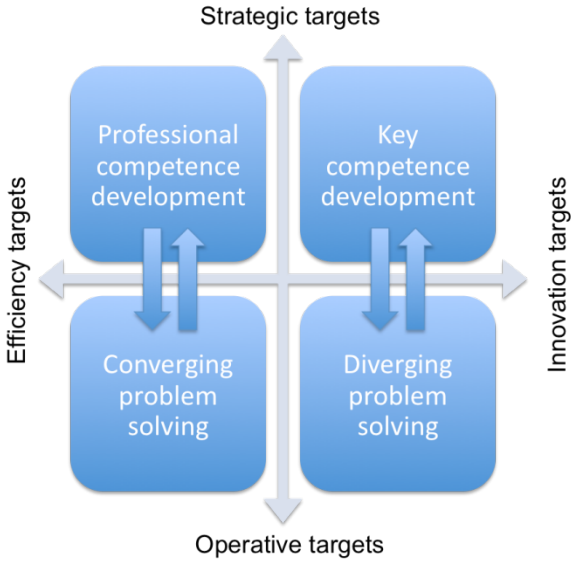


Figure 1: Requirement grid for PKM (based on Reinmann and Eppler (2008))

They define the above terms as follows:

- Professional competence stands for knowledge that is specific with regards to business area (e.g. controlling, languages etc.).
- Key competence shall help to resolve complex and unknown problems. Based on Rychen and Salganik (2003), there are three different key competences that have to be addressed in a "modern world":
  - competence to apply media and supporting tools
  - competence to interact with groups and people
  - competence to act (action ability)

- Within the problem solving process the term converging problem solving means that the needed knowledge is already present, while during the diverging problem solving approach the required knowledge has to be acquired.

As shown above, PKM has four targets in focus:

- Strategic targets
- Innovation targets
- Operative targets
- Efficiency targets

Depending on the target, the usage of a combination of the shown four strategies can be used. The upper two target areas are mostly used for long term targets and development, whereas the lower two target are short-term targets, which are relevant for the daily business. The efficiency targets rely on existing knowhow and/or additional training. The innovation targets are more creative tasks because the needed knowhow isn't available yet and/or a comprehensive approach is needed to reach the target.

2.2. PKM within Companies for Manager

As Efimova (2005) stated, "personal KM is about being aware of conversations you engage in [...], relations that enable them, and ideas that you take from and bring into these conversations". Thus, PKM "shifts responsibility for learning and knowledge sharing from the company to individuals, which is a challenge to both sides, and in this sense companies must create the conditions for PKM to emerge among knowledge workers."

So when it comes from KM to PKM, knowledge has to be managed both on an organizational level as on an individual level at the same time. Knowledge must be stored, maintained and organized for several people, but must support the individual in their daily life, during their individual decision-making process. Even though this is one of the most interesting and challenging areas with regards to PKM; there are so far very few approaches and models available that combine PKM with a company-wide KM as we could find in our research studies.

2.3. Principles and Methodologies of PKM

This chapter deals with the most important PKM methods, which helps everyone to manage his knowledge efficiently. According to Reinmann and Eppler (2008, Page 58), PKM is based on the following three pillars:

- Principles
- Methods
- Tools

Thus, PKM is not solely about tools and technological aspects, but also about defining, organizing, structuring the way to handle the personal knowledge. Tools and technologies figure as an "extended arm" of the methodology – they should support the methodology (Reinmann and Eppler (2008, Page 59)).

On the level of the principles, PKM covers the following three perspectives:

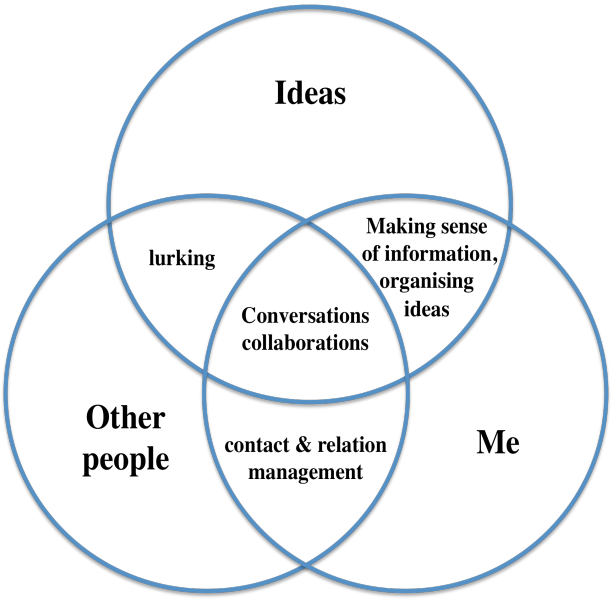


Figure 2: Requirement grid for PKM (based on Efimova (2004))

Efimova (2004) show in the figure above that PKM has also a big relation to other people and the acquired ideas. These ideas can be gained trough direct conversations or overhear (lurking) colleagues while they talk. The contact and relation management is also an important topic within PKM for Efimova (2004).

In regards to an effective PKM approach to support the principles efficient method models are needed. These models are basically independent of any tools and technologies. Reinmann and Eppler

(2008, Page 64) have assembled some methods. The list below shows some important methodologies:

SQ3R
The SQ3R method describes a simple, step-by-step-approach to harvest information. This is a reading method that helps to have a big learning effect.
It is consisting of Survey (get a quick overview), Question (formulate own questions), Read (in regards to the own questions), Recite (think about it in your own words) and Review (where your questions answered).

Perspective Diagram
The perspective Diagram treats a specific topic out of different points of view. Interesting is, that these points of view do not cover aspects of the topic, but personal aspects, such as: what do I need/want to know? What do I like about this topic? What do I know about this topic? What do I dislike about this topic?

Eisenhower-Matrix / TRAFing
Eisenhower-Matrix is basically a categorization of Information with regards to their priority and importance: **T**rash unimportant with low priority information, **R**efer unimportant information with high priority, **F**ile important information with low priority and **A**ct for important information with high priority.

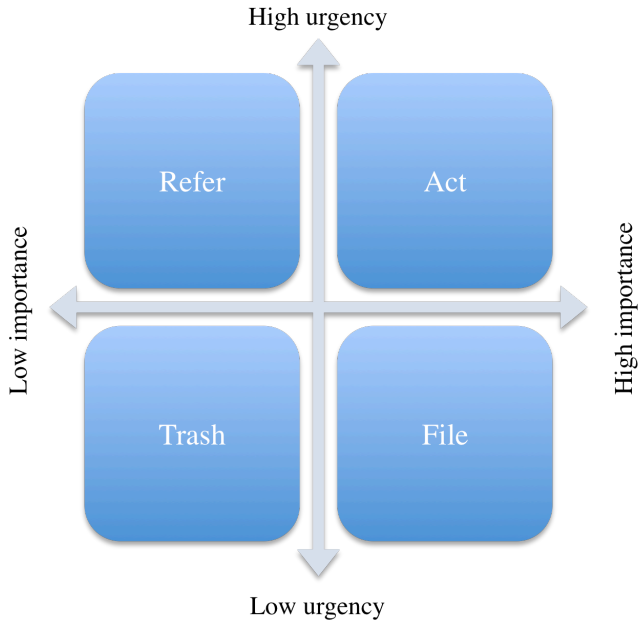


Figure 3: Eisenhower matrix

Mind Mapping

Mind Mapping describes a method to visualize information in a hierarchical and interrelated way. This is a very well known and widely used method.

Categorization

Categorization describes the classification of terms and the allocation of information into hierarchical classes. This helps to structure, assemble and distinguish data.

Tagging

Related to classification is the tagging method, where information is being assigned to one or several, non-hierarchical classes.

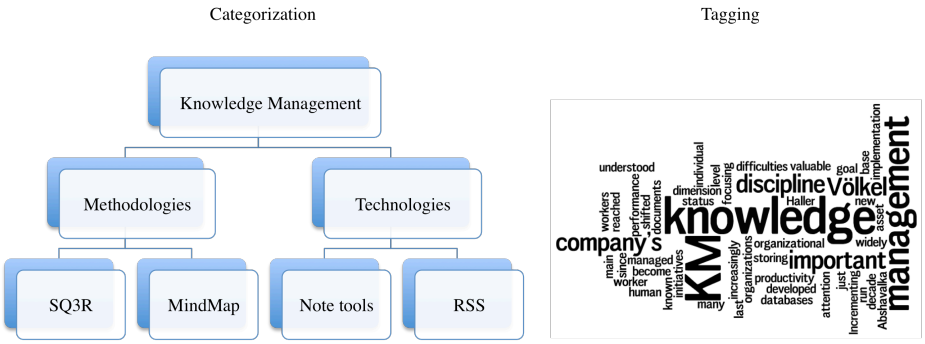


Figure 4: Categorization versus Tagging

Minto Pyramid

Using the Minto Pyramid principle, ideas and information are represented in a pyramid where each information (or thesis) leads into several sub thesis. This might look like this:

Thesis 1: Holidays in Paris are nice
Thesis 1.1: Holidays are nice
Thesis 1.2: Paris is nice

Concept Mapping

A concept map shows visualizing the interrelationships between concepts. It can be imagined as a road map that shows locations of streets and cities. Words and phrases are both interconnected and connected to the original idea.

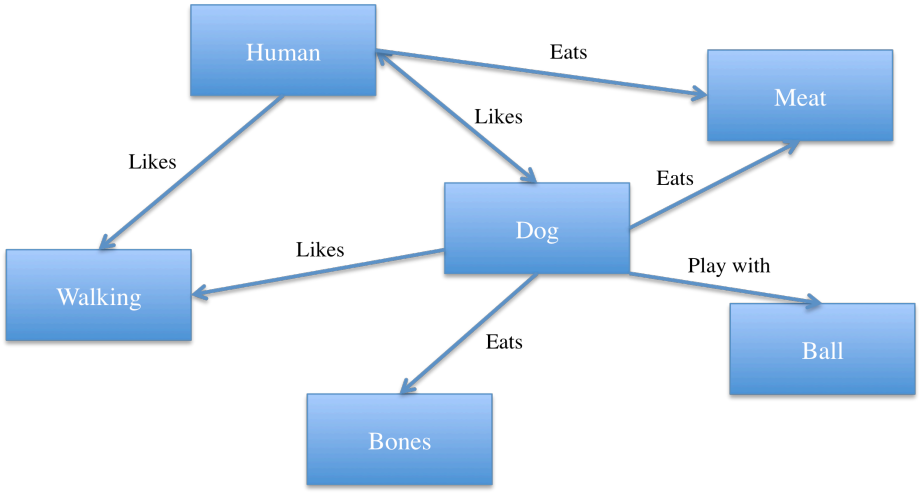


Figure 5: Example of a concept map

Besides the above mentioned, lots of other methods exist. The shown methods illustrate, that the methodical approach behind PKM requires certain basic skills in order to apply these models appropriately. According to Barth and Dorsey (2003), there are seven skills that are most important with regards to PKM:

- retrieving information
- evaluating/assessing information
- organizing information
- analyzing information
- presenting information
- securing information
- collaborating around information

Therewith, PKM is more than working with random pieces of information, but rather an approach and a strategy to transform these pieces into “something that can be systematically applied and that expands our personal knowledge” (Mitchell, 2004). This transformation is a central topic within the area of PKM, since it assumes a conscious procedure; however, lots of knowledge workers are unaware of these methodologies and approaches. Gurteen (2004) clearly states, "Most people equate PKM to Personal Information Management (PIM). They talk about it in terms of personal competences and as being able to do

such things as use a search engine effectively and handle e-mail overload. They think in terms of personal tools. Like KM, the term PKM has been 'hijacked' to equate to technology and tools!!"

This leads to the fact that PKM is often reduced to related tools and technologies that will be treated in the next chapters. Also in our survey, we did not consider the above methods, but focused on the technologies we well treat in the next chapter.

2.4. Tools

After the introduction of the PKM methods in the chapter 2.3, this chapter deals with the available tools for PKM. Knowledge workers tend to use the well-established and known tools that are provided in the workplace and have been in place for years or have been adopted from the predecessor (Lembke, 2004). Today many more options are available and being developed but its level of dispersion and usage is still very low.

A PKM tool must support the individual to create, provide, share and apply knowledge. Furthermore, several needs and methods (see Chapter 2.3) must be supported. This makes clear that it may not only be one tool or technology, but a set of tools and technologies that build a whole PKM environment for the user. Based on Lehner (2009, P 241), Mitchell (2004) and Razmerita, Kirchner, Sudzina (2009), we have built the following categorization for PKM tools:

Social bookmarking
Provides a simple way for a community of people to share bookmarks of Internet resources. Often, social bookmarking uses the method of categorization and/or tagging in order to make the management of the links easier.

Wiki
Wiki was developed in 1994 by Ward Cunningham. The word wiki comes from the Hawaiian word “wiki-wiki” that means fast. Often, many people can contribute to a wiki – therefore, a core functionality

is the evaluation of the quality of these contributions. Therewith, wikis strongly rely on the "wisdom of the crowd[1]" principle. Three types of wikis can be distinguished:

- Desktop wikis
- Personal wikis
- Semantic wikis

Personal and Desktop wikis allow organizing information within the cloud or on the own computer. Certain wikis include mind maps, search functions and/or to-do lists (e.g. Pimki, pimki.rubyforge.org). Semantic wikis provide an additional, formal representation in relation to link the different existing information within one wiki. Besides, wikis often serve as a community platform.

Wikis tend to be especially effective for the collection and interconnection of information. In most of the public wikis the risk of false information is high because everyone can enter the content on its own (sometimes without any check on correctness).

Index / Search / MetaSearch / Information Retrieval
Searching for information of a special topic within documents and/or the Internet. Meta searching requires a formal representation of data because this technology base on the results of other (more than one) results from other search engines. This leads either to more results and also to better results.

[1] A term that argues that large groups of people are smarter than an elite few

Concept / Mind Mapping tools
Tools to represent thoughts arranged around a topic. This technology in combination with the method of mind mapping helps to get a quick overview of a topic.

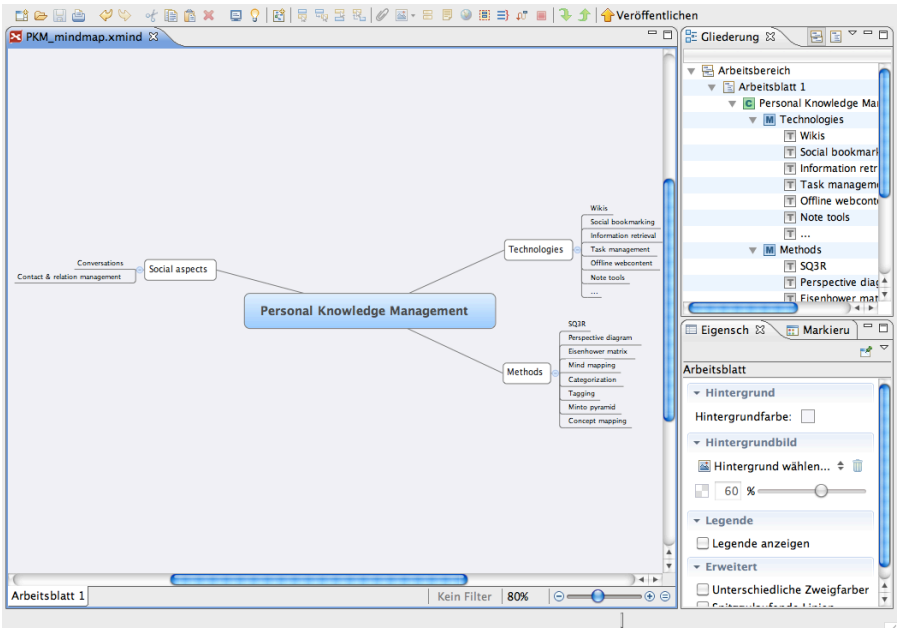


Figure 6: Screenshot MinMap Tool XMind

Email Management/Analysis and Unified Messaging/Newsletter/ RSS
Tools to manage the whole flow of information between individuals or companies efficiently. RSS stands for Really Simple Syndication, tool go gather feeds from websites which may contain news, updates or recent comments of a website.

Task Management/Workflow Management
Tools to manage, prioritize, and assign tasks, following pre-defined workflows and statuses. These are often used in combination with a certain workflow management system.

Offline WebContent
Tools to save pages offline for later reading (also on other devices, e.g. mobile phones)

Note Tools
Save, manage and share notes and information digitally.

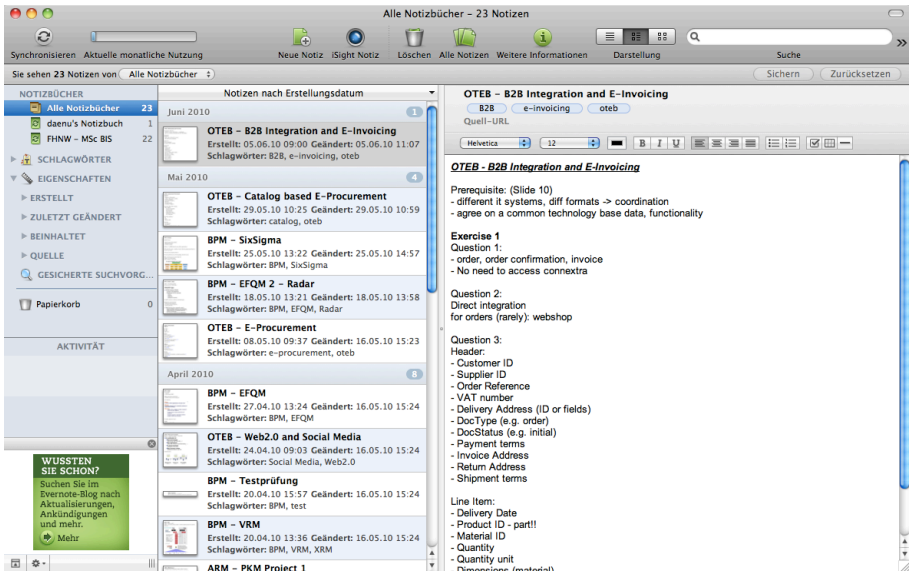


Figure 7: Screenshot Note tool Evernote

Cloud Computing Storage
Internet-based storage and synchronization of data for usage on several devices.

Document Based
Documents on a local drive or network share, accessible through file system.

Personal Portal/Personalized Web Pages
Personalized search tools that provide for retrieving and sharing of information.

These tools have been included in our survey since we considered them the most interesting and also well known to managers. However,

we recognized three additional categories of tools that we did not include in the survey:

Unstructured information capturing
Often also called Data Mining, is it about re-organization and structuring of unstructured information and documents to find hidden combinations.

People/Expert finding
Tool to list people and skills in order to identify known skills and the related specialists.

Social Networks / Professional Social Networks
Social networks, such as Facebook, MySpace, LinkedIn and Xing, have large user communities. Therewith, they are important platforms for sharing personal information and for exchange with other people.

However, since social networks tend primarily related to the exchange of personal issues, certain companies realized their own professional social network. One example is IBM with the Beehive! Platform. Beehive! is an internal social networking platform that connects IBM workers on both, a personal as well as a professional level. This makes Beehive! one of the very few approaches that considers both, KM and PKM at the same time.

2.5. Technological Trends

Technological trends might play an important role in the development of PKM-related tools and therewith also in the development of PKM. During our research we considered the following trends important in regards to PKM.

Semantic Web / Web 3.0
Semantic webs are based on ontology's, that allow computers to understand, categorize, combine and distinguish information. With regards to PKM, the following points should be considered concerning semantic web:

- Semantic queries
  Information retrieval using semantic web
- Semantic knowledge
  Knowledge in Wikis or other semantic forms
- Combination of semantic knowledge
  Categorization of semantic knowledge

According to the E-Commerce hype cycle from Gartner (2009) the Web 3.0 is already obsolete because the revolution of the Internet can't be counted. Besides that the semantic approach is a part of some new hypes that were identified by Gartner (2009).

Mobility and Ubiquity
Mobile computing can assist the users from easy agenda maintenance, location based services, as well as for PKM. Therewith, it is an important supporting technology for PKM (e.g. permanent access to online resources).

Cloud Computing
Cloud Computing are basically virtual services, whereof the following types can be distinguished:

- Private Clouds
  All parts in the border of an company (or enterprise cluster)
- Public Clouds
  Clouds offered by a third party
- Hybrid Clouds
  Some parts are private, others are public

Amazon, Google und Yahoo are the big players in Cloud Computing today.

Web 2.0
According to Razmerita, Kirchner, Sudzina (2009), the Web 2.0, "has introduced new concepts and tools that are able to operationalize a more social-centric vision. Online social networking systems, such as LinkedIn, MySpace and Facebook, allow people to manage their interaction with others on a massive scale. Blogs, microblogs (e.g. Twitter) and instant messaging tools (e.g. Skype)

have provided new communication tools to interact more effectively with others in opened communities. Finally, radically new tools have emerged, such as Wikis (e.g. Wikipedia) and social bookmarking (e.g. Delicious), aimed at directly supporting PKM and fostering collective intelligence".

In other words, the content is created and maintained by users - with tools like blogs, wikis, RSS, social bookmarking, people have a set of tools to organize and create new knowledge. This accelerates and helps the distribution of knowledge, based on the wisdom of the crowd principle.

In this regard, also terms like KM 2.0 or Enterprise 2.0 are heard.

Human Computer Interface (HCI)
The target of HCI is to simplify the interaction between the human and the computer. With HCI the usability of a software can be improved or a website can be developed in a barrier free manor. HCI is a technical methodology to make computers and software more human-friendly.
Today HCI models and approaches are already available and will be developed further. Here are some examples:

- Touch Screen
- Drag/drop functionalities
- Voice control
- e-pen (electronic pencil)

2.6. Thesis derivation

Based on this literature review, we derived our thesis:
Even PKM, the individual management of knowledge, is an upcoming and interesting topic, the current level of usage of PKM is very low. Especially poor is the embedding in any organizational context as well as the methodical and conscious usage of PKM. Only a few examples could be found that follow an approach to integrate PKM in a KM on an organizational level (e.g. Beehive!).

We assume that significant changes on the technology-side are necessary in order to promote PKM in both a private and an

organizational context. Based on the literature research we figured out, that there exists a lot of supporting tools for PKM but there is no link between them that allows a summarization.

In the survey, we above thesis is treated as well as the goals/questions that have been defined initially (see chapter 1):

- Are manager aware of PKM, do manager consider PKM important and interesting for their daily work/life?
- Which instruments are used in order to support PKM, how many tools are used, what technologies are considered for PKM (mobile, Web 2.0 etc.), how satisfied are manager with current PKM instruments?
- What do manager consider important regarding PKM, what tools and technologies must be present in order to provide an added value to manager?

3. Research Design and Characteristics of Control Sample

Based on the literature review, we have set up a survey to address the goals of this paper. This chapter will show the research design and the characteristics of the control sample, as a basis-information for the next chapter.

3.1. Method of Investigation

The population for this study cannot be numbered exactly, because potential persons were called for participation using different medias like:

- Direct mailings
- Forwarded mailings by recipients
- Postings in online portals and online communities

The link to the survey was kindly accepted and set active to their communities by the two online portals www.knowledge-management-online.com and on www.knowledgeboard.com and by the Xing groups Wissensmanagement[2] and Knowledge Management[3].

A letter explaining the study objectives and the link to the online questionnaire was sent in the form of a direct email with attachment. The recipients were kindly asked to forward the email to business contacts of their own that were eligible and match the desired characteristics.

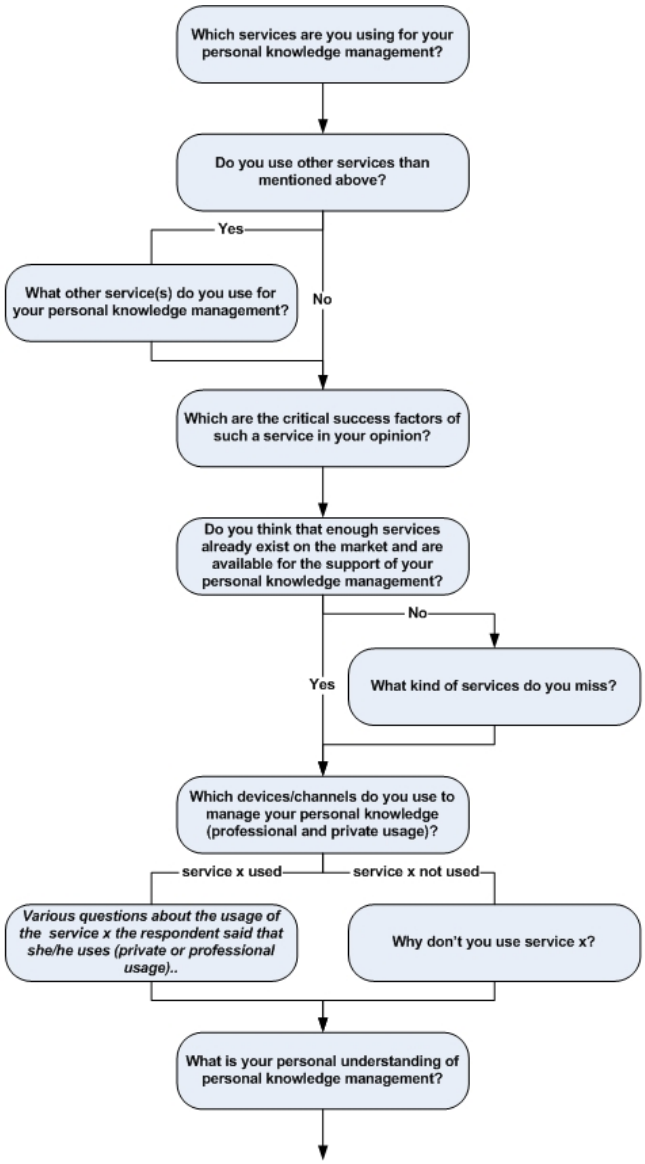
The collection of data was carried out between May 07 and May 21 2010. The survey was conducted strictly confidential and in a completely anonymous manner. This means, that it was assured, that responses could not be linked with the person that entered them. After the collection of data, the results were evaluated and processed by the research group.

[2] www.xing.com/net/prie146ebx/wm (posted on 12.05.2010)
[3] www.xing.com/net/prie146ebx/knowledgemanagement (posted on 11.05.2010)

3.2. Questionnaire

The questionnaire was available in German and in English. The completion of the questionnaire did not take up more than 15 minutes.

The following illustration shows the complete flow diagram of the questionnaire including the branching according to the selected answers:



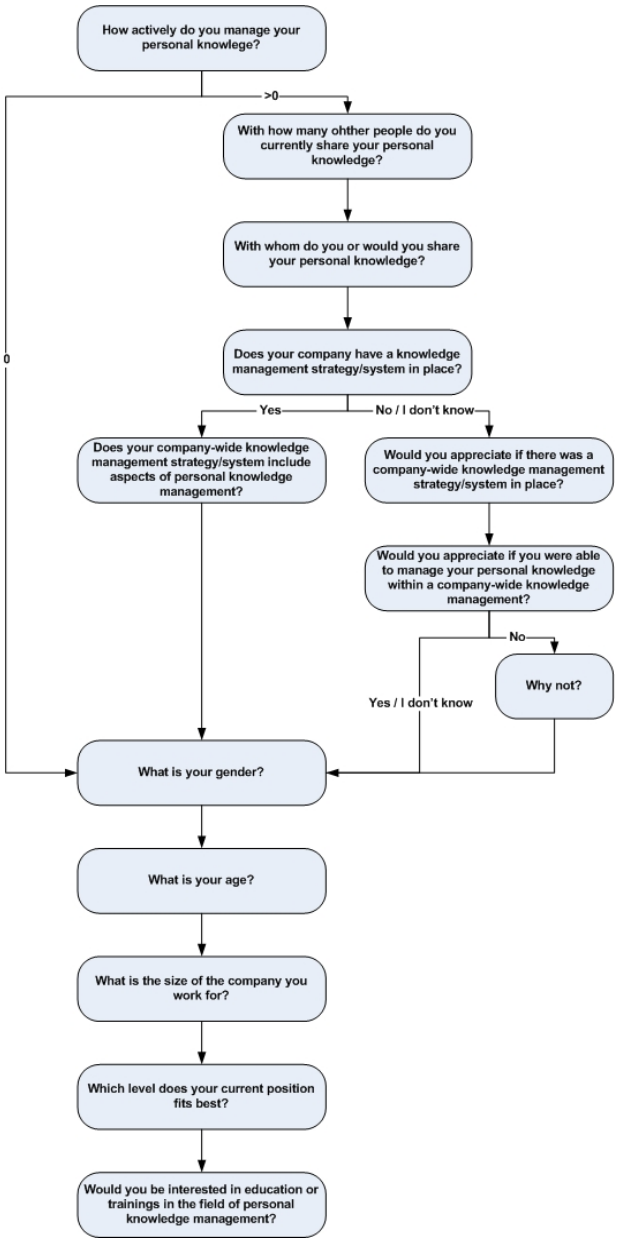


Figure 8: Flow Diagram of Questionnaire

The online survey tool SurveyGizmo[4] was used because it offers the possibility to implement simple and complex logical dependencies

[4] www.surveygizmo.com

producing branching and comes with an enterprise license free of charge for students that are members of their Facebook group[5]:

Figure 9: Facebook Group "SurveyGizmo"

3.3. Response and Characterization of the Participants

Managers of at least 20 national (Switzerland) and several international companies took part in the survey. Since we do not know the exact size of the sample space, it was not possible to calculate the return rate. 83 questionnaires have been completed, 95 have been abandoned and 67 were filled out partially.

The size of the companies varied between 20 and 2'500 employees. The sector affiliation of the companies that received a direct mailing included power industry, transportation, telecommunication, banking, assurance, administration, food production, business and IT consulting, IT outsourcing and software manufacturer.

[5] http://www.facebook.com/apps/application.php?id=137955519090

The participants are holding the following job positions: 3.70 % of the responses were given by employees, 35.80 % by team leaders, 39.50 % by middle management employees and 21.00 % by senior managers. 90.10 % of the respondents were male and 9.90 % female.

4. Results of the Survey and Evaluation of the Questions

The data collected from the survey was processes to a readable format. This chapter shows the result and evaluation of each question focusing on the objectives of the research, which again are:

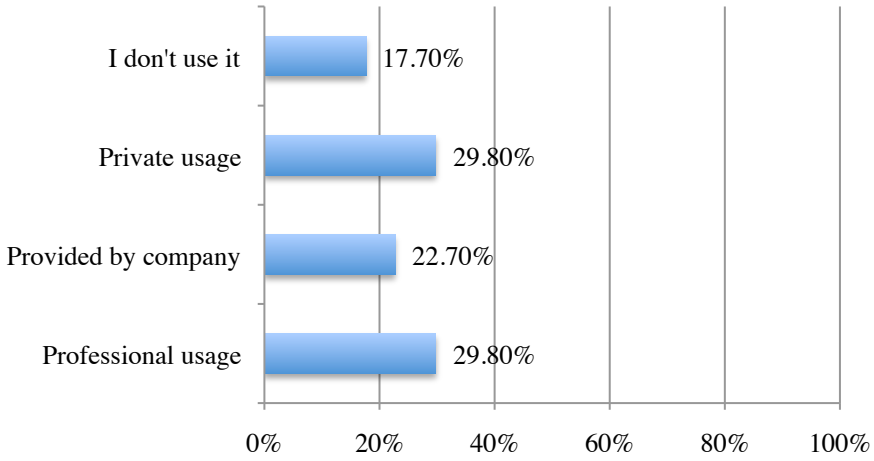
- Description of the current status and level of usage of PKM instruments by managers in an organizational context
- Identification of what instruments can be used in order to support PKM
- Identification of possible enabling technologies and what the critical success factors are

4.1. Current Usage and level of satisfaction of PKM Instruments

4.1.1. Services Used for Personal Knowledge Management

The first question of the survey was about the concrete use of a preselected service to find out if they are actually used and in what environment (private or business or both of them). All of the services are used but for some of them the usage level is very low.

Desktop/Personal Wiki



N=42

Figure 10: Usage of Desktop/Personal Wiki

Mind Map

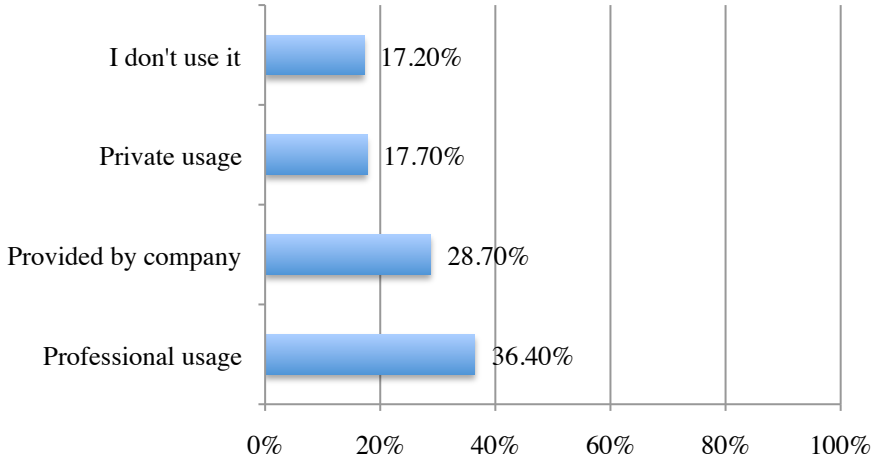


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Figure 11: Usage of Mind Map

WebLink Management Tool

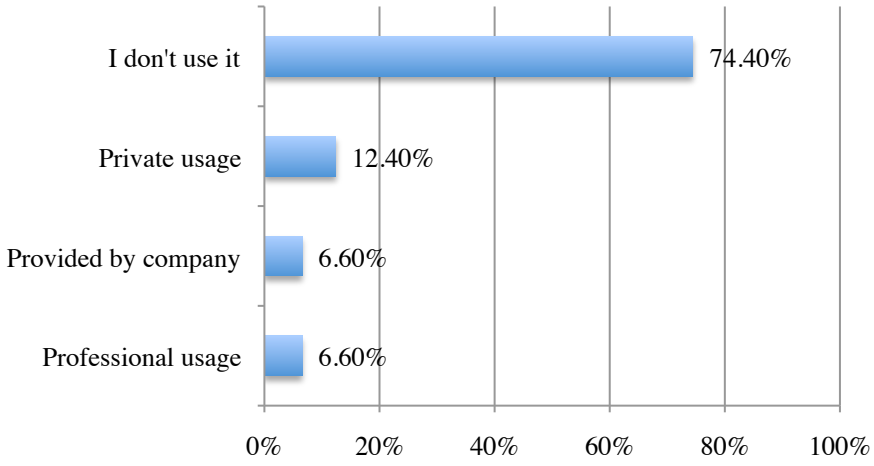

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Figure 12: Usage of WebLink Management Tool

Surprisingly weblink management tools are among the services with a very low level of usage, which lead to the presumption that either the terminology is unknown or the participants are not aware of that kind of tools.

Offline WebContent

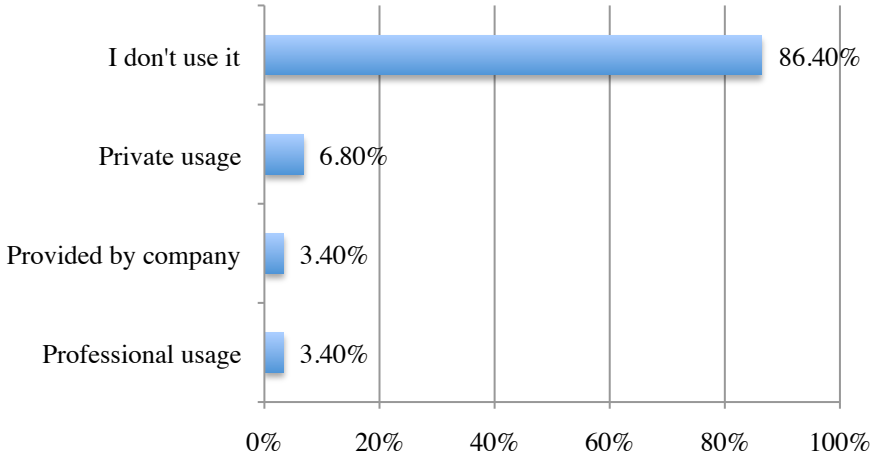

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Figure 13: Usage of Offline WebContent

It is not very surprising that webcontent is rarely stored for offline usage, since online connection to the Internet has become widely available.

Task Management

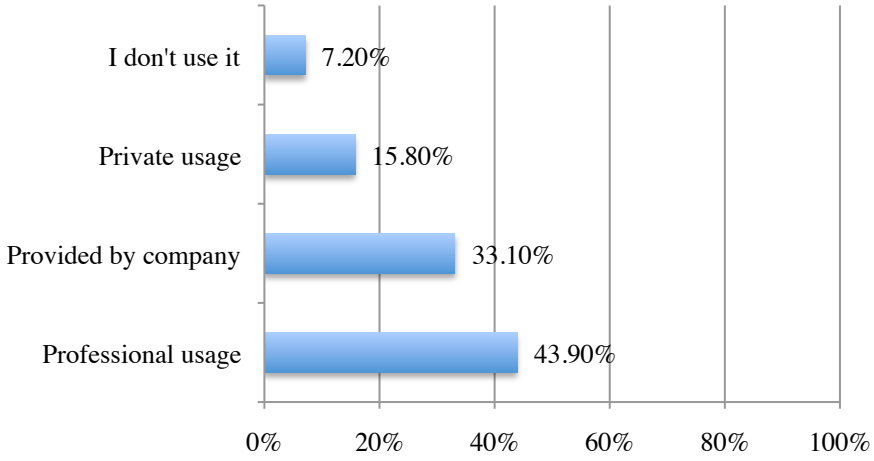

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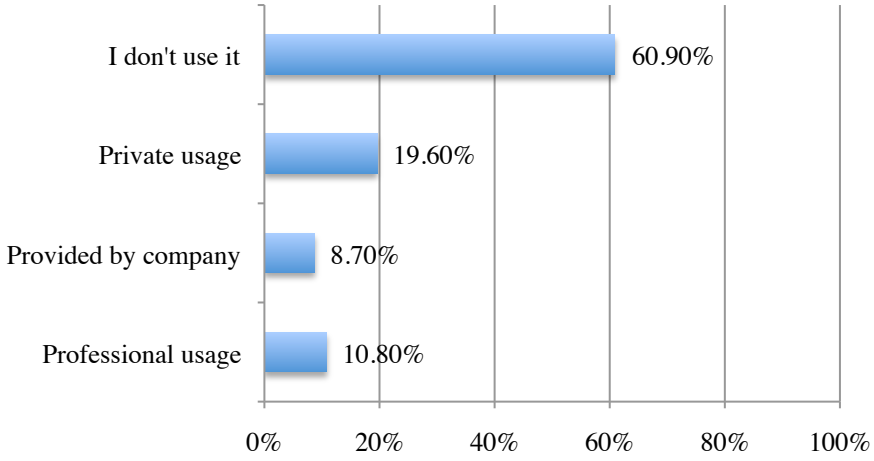
Figure 14: Usage of Task Management

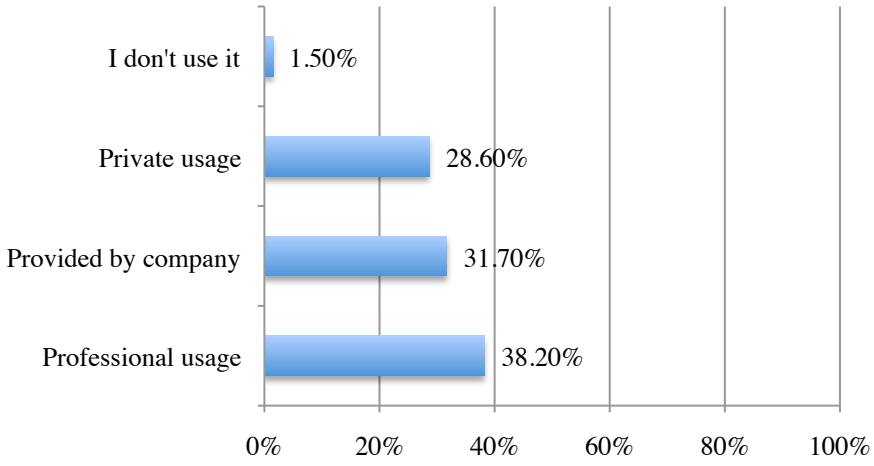
Cloud Computing Storage



N=10

Figure 15: Usage of Cloud Computing Storage

Document Based on a Drive

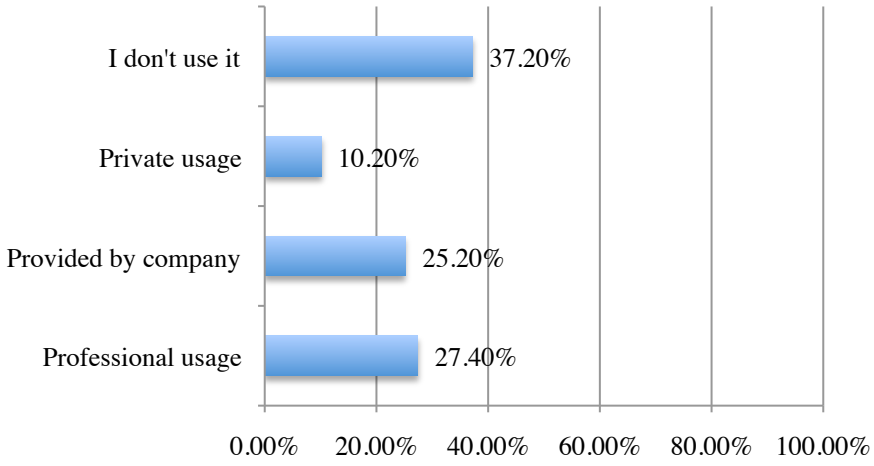


N=76

Figure 16: Usage of Document Based (on a Drive)

Only a very small number of participants don't use a file-based approach. This might be the case in very small companies where there is no company file system in place due to the cost-value ratio. What catches the reader's eye is the relatively low number of companies, which provide a document-based approach with network drives. This number should be much higher and leads to the presumption that participants are confused by the used terminology for this service.

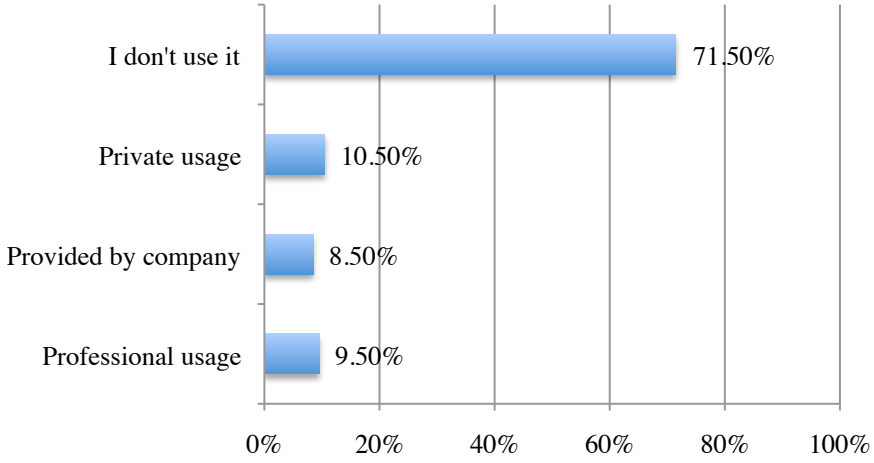
Personal Portal



N=32

Figure 17: Usage of Personal Portal

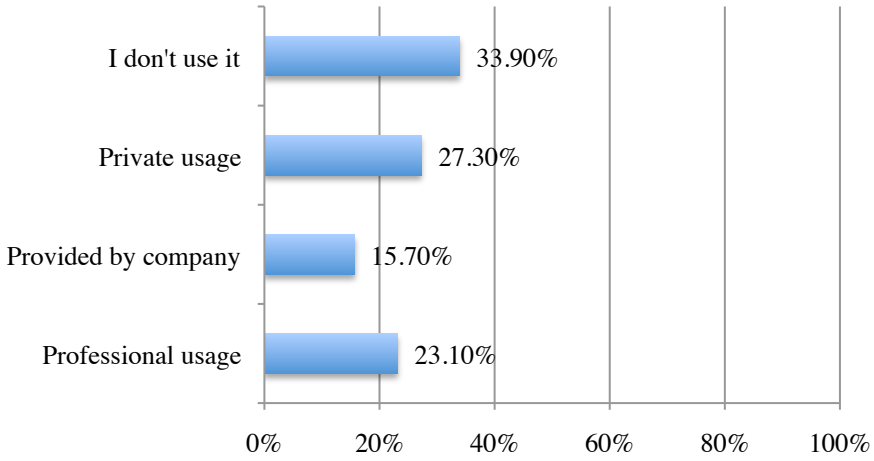
Note Tool



N=9

Figure 18: Usage of Note Tool

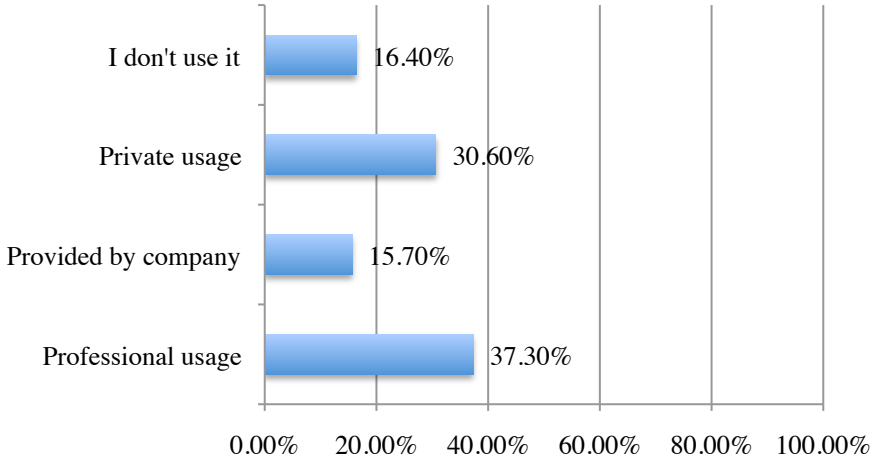
RSS Reader



N=28

Figure 19: Usage of RSS Reader

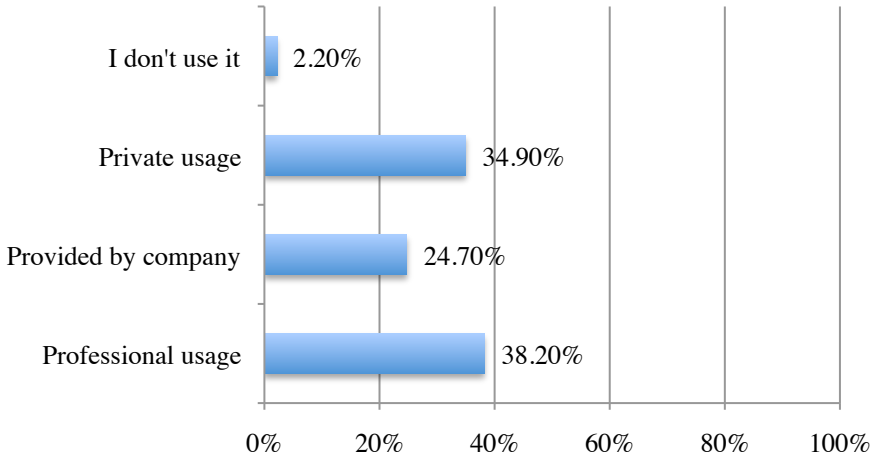
Email Newsletter



N=50

Figure 20: Usage of Email Newsletter

Information Retrieval

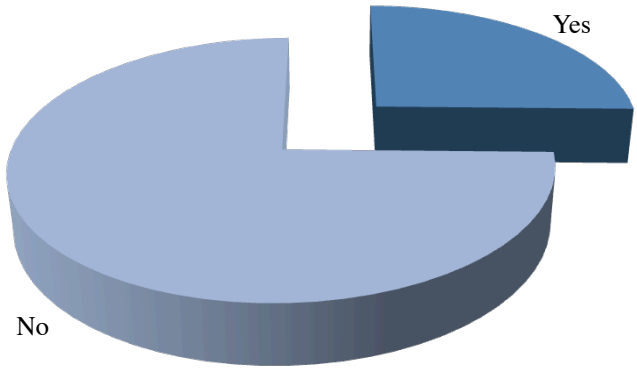


N=71

Figure 21: Usage of Information Retrieval

4.1.2. Additional Services used for Personal Knowledge Management

Since the services listed in the first question was preselected, there is the possibility that other services are also used. Participants were asked whether they use additional services than the ones that were listed in the first question. 25.30 % stated that they use other services, where as 74.70 % answered that they are not using any other additional service.



N=83

Figure 22: Usage of Additional Service

4.1.1. Critical Success Factors of Services

In order to get a better understanding of what manager's think is critical to a service, participants were asked to mention what they believe are the critical success factors of such a service.

Figure 23: Critical Success Factors

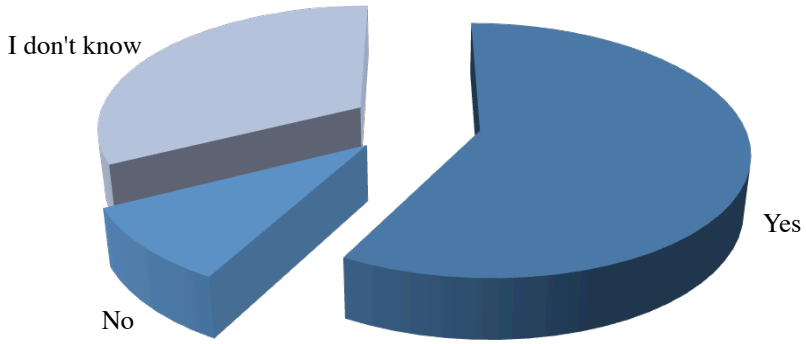
An immense number of factors were given, but the five mostly mentioned are: availability, usability, simplicity, reliability and

accessibility. This is not amazing but corresponds to critical factors of regular software systems. Interestingly security is not among the most crucial aspects.

4.1.2. Adequate Number of Services on the Market

In order to find out whether the market already offers an adequate number of services, the participants were asked if enough services already exist on the market and are available for the support of their personal knowledge management. 57.90 % seem to be satisfied with the choice whereas 9.60 % are not and 32.50 % of the respondents don't know for themselves.

It is a bit awkward that the portion of unsatisfied is so low when taking in to account that the overall level of usage of services is not very high too. A much higher proportion of unsatisfied people were expected.



N=83

Figure 24: Adequate Number of Additional Services

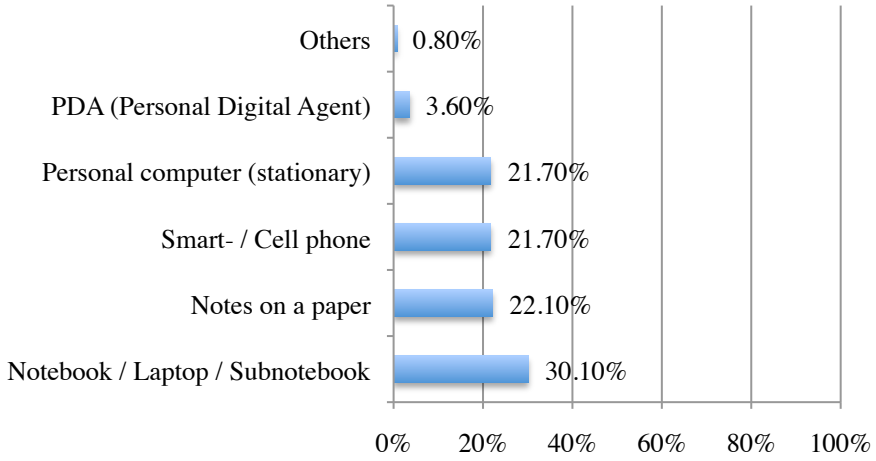
The participants who responded that they are not satisfied with the choice were additionally asked which service they are missing out on in order to find out about lacks. The following answers were given:

- Awareness, basic tools, use cases
- Expert knowledge context-specific to the job
- Search for scientific key words in the Internet (only from serious sources)
- Tool combining and integrating everything in a web interface
- Better and established semantic search
- Topic map tool with links to emails, files and websites
- Subject-specific distribution network
- Simple knowledge management tool for internal usage

It seems fairly clear that semantic aspects is what is missing and leads to the presumption that semantic web could glue this lack.

4.1.3. Channels and Devices used for PKM

Now that we know which services are used and in which environment it lied on the tip of the tongue to ask which channels/devices are currently used for the personal knowledge management. The answers are very much expected.



N=54

Figure 25: Used Channels/Devices for Personal Knowledge Management

The participants who selected “others”, were asked to mention which device/channel not listed in the question they would prefer to use. The following channel/services are mentioned:

- Camera
- Camcorder
- Voice recorder

4.1.4. Reasons for not Using a Service

According to the answers given in the question about the usage of the listed services, participants who answered that they would not use a specific service were asked to state the reason for not using it. The following list shows the (five) mostly mentioned reasons of each service:

Desktop/Personal Wikis
Unknown, too time-consuming, no need, not possible/not allowed in company, haven’t dealt with it so far

N=23

Information Retrieval
Unknown

N=1

Mind Maps
Unknown, quicker with pen and paper, to complex/heavy-weight application, not enough adding value, not supported in company

N=21

WebLink Management
Unknown, no real need, using favourites/bookmarks in browser, browser functionality is sufficient, unknown adding value, storing web links on a drive

N=63

Email Newsletter
No need for more "spam", information overflow, too many unspecific information, not job related, using RSS feeds instead

N=20

Offline WebContent
Unknown, always online, able to go online anytime, no need, links are not accessible offline

N=72

Note Tool
Unknown, using pen and paper, , unknown adding value, no need, using notes of Microsoft Outlook

N=67

RSS Reader
Unknown, unknown adding value, no need for more information, fear of information overflow, not enough specific information

N=40

Task Management
Unknown, no need, using Mind Map, using Microsoft Outlook, using Microsoft Excel

N=8

Cloud Computing Storage
Unknown, no need, security worries, no offline availability, not allowed in company

N=54

Personal Portal
Unknown, no need, unknown adding value, too extensive to build, no offline availability

N=43

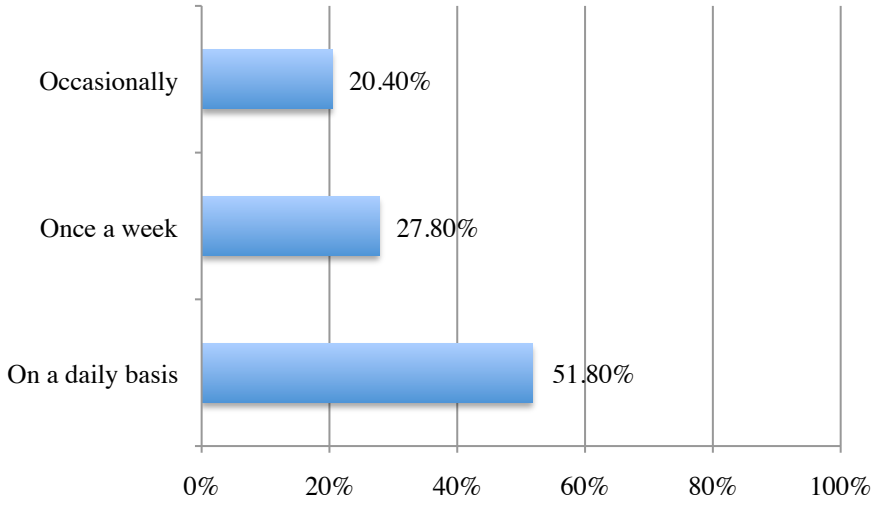
Document Based on a Drive
Unknown, not supported by company, search-engine is sufficient

N=3

4.1.5. In-depth Questions about the Services

To get a better understanding about the usage of the services, participants who answered that they would use a specific service (either personally or privately) were asked to give some in-depth information.

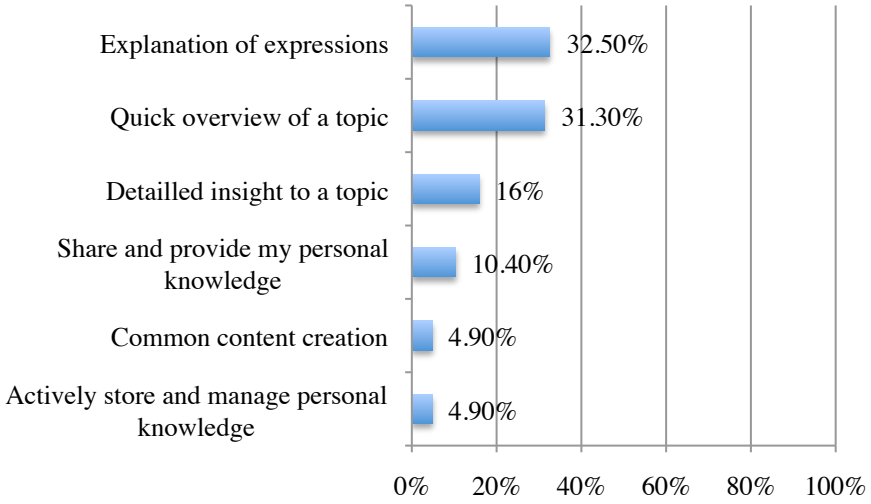
Desktop/personal Wikis
Participants were asked how often they use wikis:



N=54

Figure 26: Frequency of Usage of Wiki

Participants were asked how wikis support their personal knowledge management:



N=47

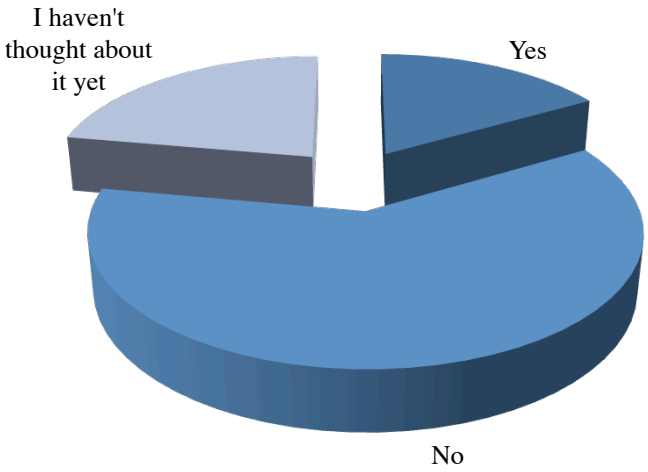
Figure 27: Wiki Support of Personal Knowledge Management

Participants were asked to give remarks (advantages, disadvantages) about wikis. The mostly mentioned advantages are: wide range of topics, many authors possible, fast, comprehensive, convenient, interlinked. And the mostly mentioned disadvantages are: validity, content manipulation (security), extensive to build, not scientific.

Participants were asked to state which existing service providers or tools they use as their wiki solution. The most famous wiki is Wikipedia. Also mentioned were: Confluence[6], Jive[7], and company intranet.

Participants were asked whether they are bothered because most of the content in a wiki is anonymous, if not provided by a company for internal usage. 16.70 % admitted that they are bothered by this fact whereas 61.10 % are not and 22.20 % have not thought about this fact yet.

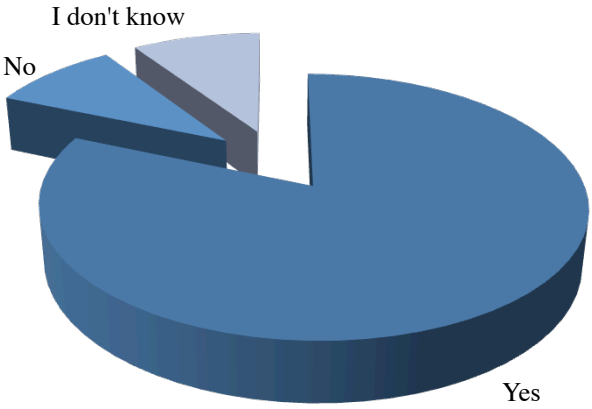
[6] www.atlassian.com/software/confluence
[7] www.jivesoftware.com



N=54

Figure 28: Anonymous Content in Wiki

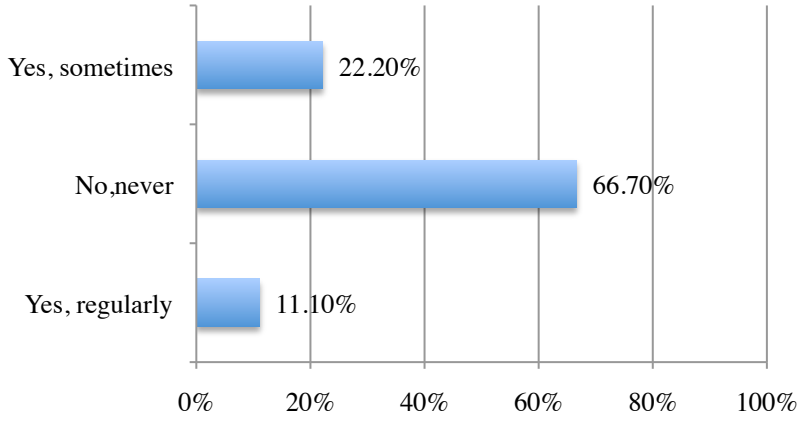
Participants were asked if they would appreciate professional wiki content (from experts), that addresses business aspects of a specific topic. The vast majority a mere 81.40 % would appreciate it, whereas 9.30 % would not and also 9.30 % did not take a position on that.



N=54

Figure 29: Professional Content in Wiki

Participants were asked whether they have ever written or modified a wiki:

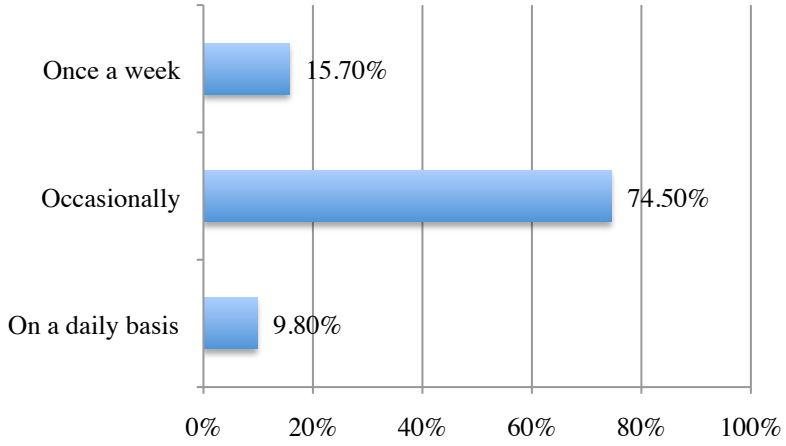


N=54

Figure 30: Writing or Modification of Content of a Wiki

Mind Maps

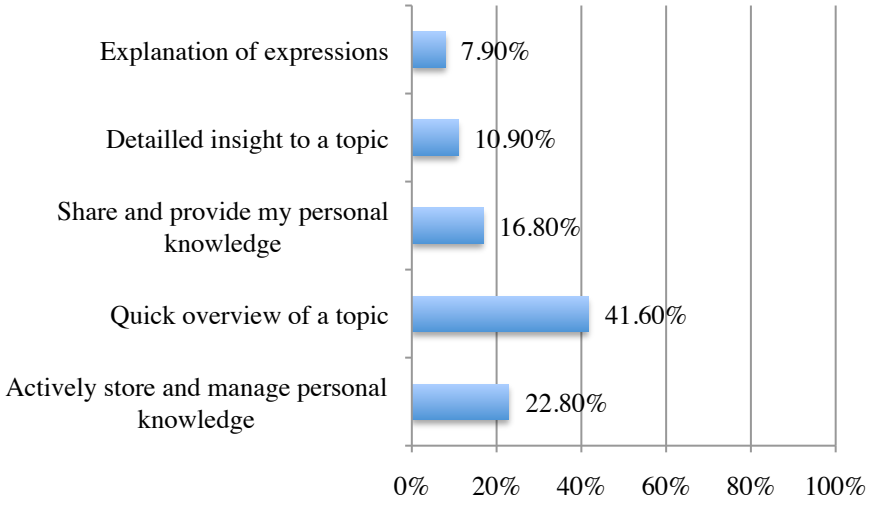
Participants were asked how often they use mind maps:



N=51

Figure 31: Frequency of Usage of Mind Map

Participants were asked how mind maps support their personal knowledge management:



N=8

Figure 32: Mind Map Support of Personal Knowledge Management

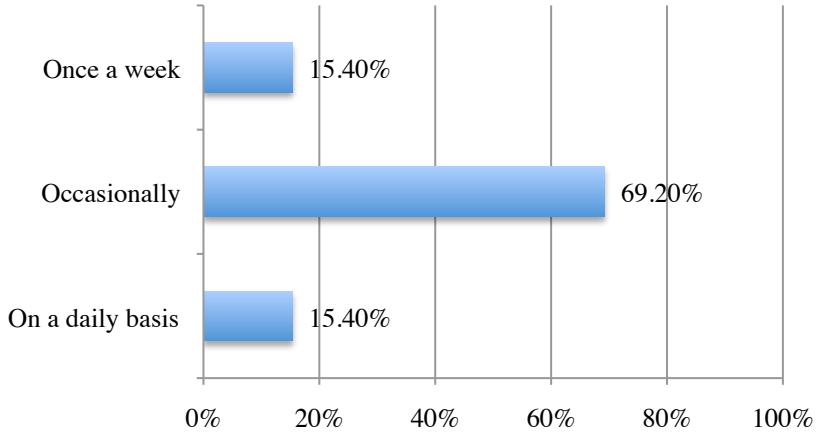
Participants were asked to give remarks (advantages, disadvantages) about mind maps. The mostly mentioned advantages are: simple, fast/efficient, individual structure, easy handling, supports structured thoughts. And the mostly mentioned disadvantages are: confusing when overcharged needs training, proprietary file types.

Participants were asked to state which existing service providers or tools they use as their mind map solution. The following answers were given: MindManager[8], FreeMind[9]. PersonalBrain[10], MindMapper[11].

[8] www.mindjet.com
[9] freemind.sourceforge.net
[10] www.thebrain.com
[11] www.mindmapper.ch

WebLink Management

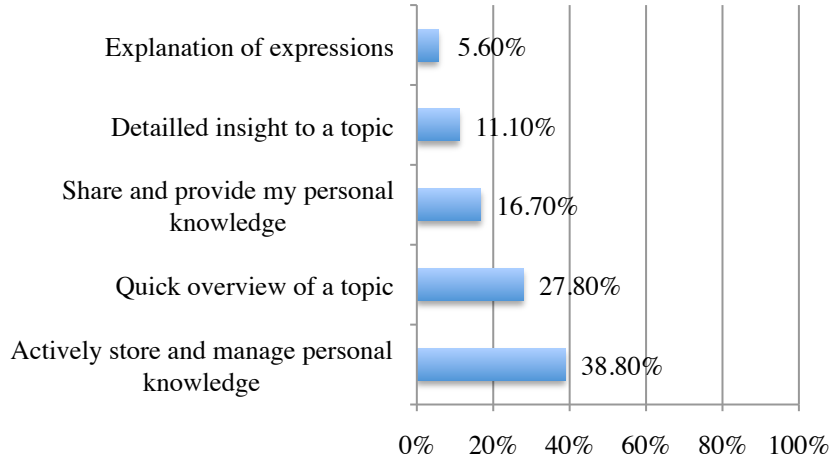
Participants were asked how often they use web link management:



N=13

Figure 33: Frequency of Usage of WebLink Management

Participants were asked how web link management supports their personal knowledge management:



N=3

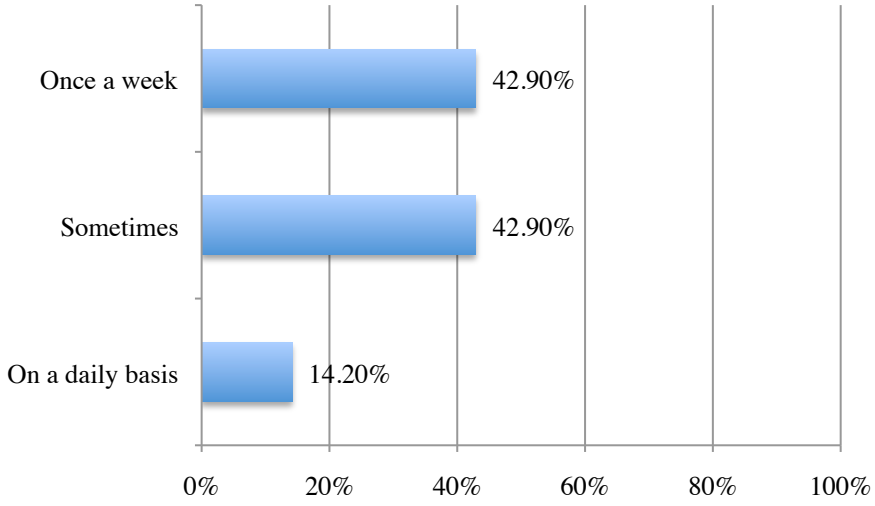
Figure 34: WebLink Management Support of Personal Knowledge Management

Participants were asked to give remarks (advantages, disadvantages) about web link management. The only mentioned advantage is: easy access to content. And the mostly mentioned disadvantage is: can easily be outdated.

Participants were asked to state which existing service providers or tools they use as their web link Management solution. The following answers were given: Delicious[12], Jive[13]

Offline WebContent

Participants were asked how often they use offline web content:

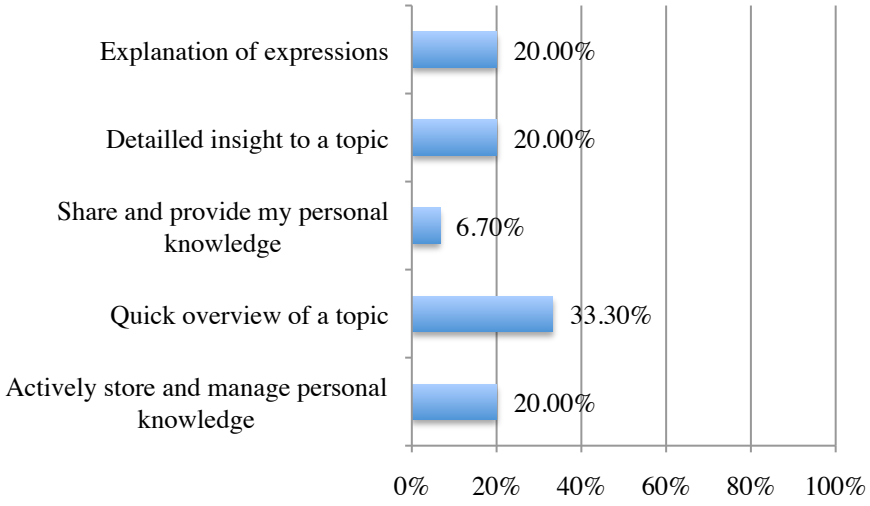


N=7

Figure 35: Frequency of Usage of Offline WebContent

Participants were asked how offline web content supports their personal knowledge management:

[12] www.delicious.com
[13] www.jivesoftware.com



N=3

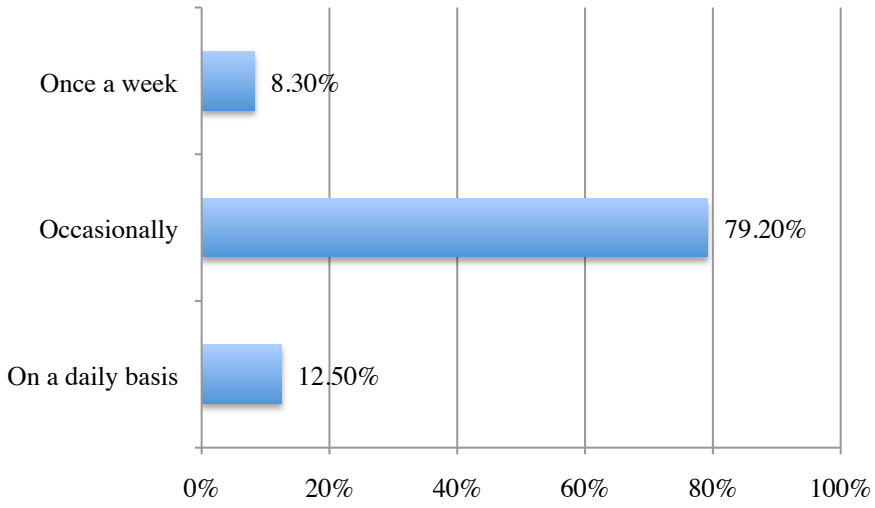
Figure 36: Offline WebContent Support of Personal Knowledge Management

Participants were asked to give remarks (advantages, disadvantages) about offline web content. The only mentioned advantage is: helpful to save informative websites. And the only mentioned disadvantage is: difficult search.

Participants were asked to state which existing service providers or tools they use as their offline web content solution. There was no answer given at all to that question.

Cloud Computing Storage

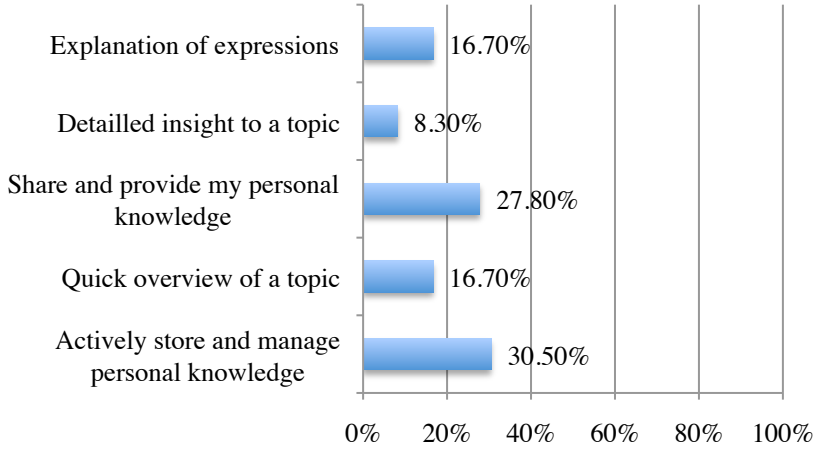
Participants were asked how often they use cloud-computing storage for their personal knowledge management:



N=24

Figure 37: Frequency of Usage of Cloud Computing Storage

Participants were asked how cloud computing storage supports their personal knowledge management:



N=6

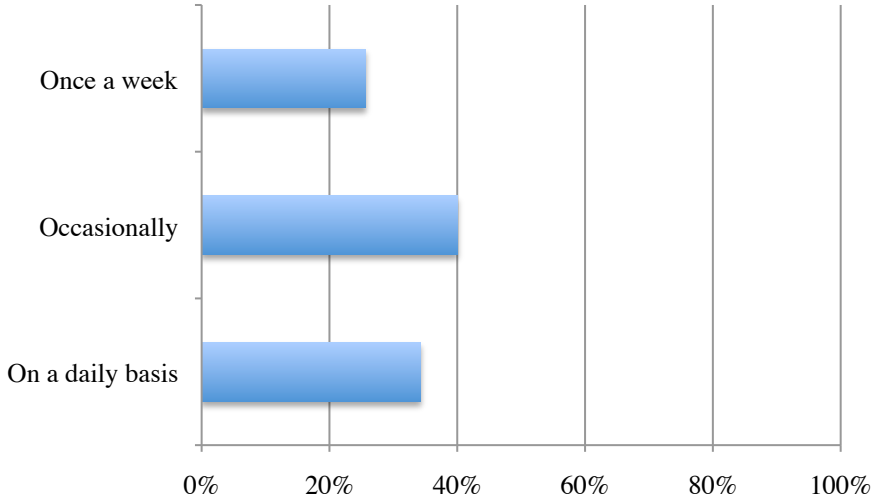
Figure 38: Cloud Computing Storage Support of Personal Knowledge Management

Participants were asked to give remarks (advantages, disadvantages) about cloud computing storage. The mostly mentioned advantages are: outsourced handling, location and system independent access, free offers available, browser based (no software needed). And the mostly mentioned disadvantages are: security worries, data privacy, data abuse.

Participants were asked to state which existing service providers or tools they use as their cloud computing storage solution. The following answers were given: GoogleDocs[14], Dropbox[15], MozyHome[16], Agorum[17], Zope[18]

Personal Portal

Participants were asked how often they use personal portals for their personal knowledge management:

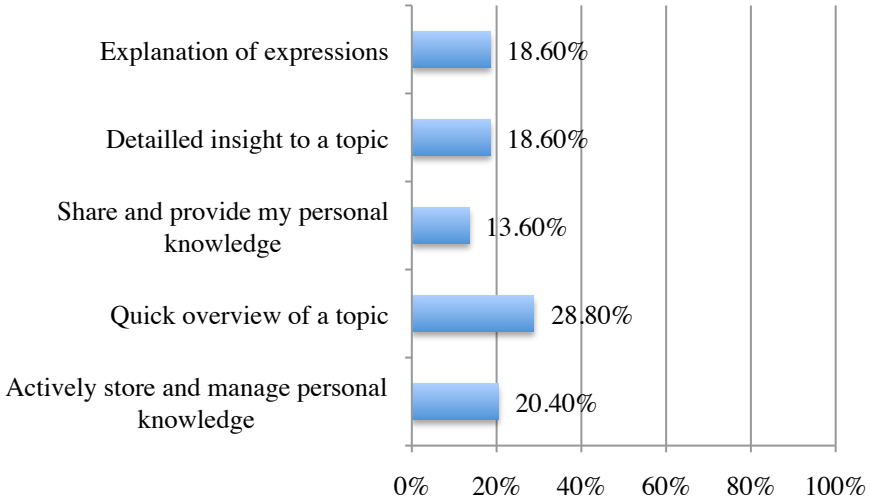


N=35

Figure 39: Frequency of Usage of Personal Portals

[14] docs.google.com
[15] www.dropbox.com
[16] mozy.com/home/free
[17] www.agorum.com
[18] www.zope.com

Participants were asked how personal portals support their personal knowledge management:



N=11

Figure 40: Personal Portal Support of Personal Knowledge Management

Participants were asked to give remarks (advantages, disadvantages) about personal portals. The mostly mentioned advantages are: personalization, common platform (storage, security), ideal for networking. And the mostly mentioned disadvantages are: extensive to keep data up to date, risk of data redundancy, risk of chaotic structuring.

Participants were asked to state which existing service providers or tools they use as their personal portal solution. The following answers were given: Netweaver Portal[19], Oracle Portal[20], Lotus Notes Portal[21], Adarvo ThemeWare[22], iGoogle[23], SharePoint[24] and company intranet.

[19] www.sap.com
[20] www.oracle.com/portal
[21] www.lotusnotesdomino.de
[22] www.adarvo.net
[23] www.google.com/ig
[24] sharepoint.microsoft.com

4.1.6. Other Services

To finalize this section a question to find out about what other services are in use for PKM, an according question was placed. Among the given answers are: books in a shelf, knowledge database, notes on paper, company specific in-house developed software-system for KM and PKM, online discussion forums, Google Wave, online blogs, document management system (DMS), common office documents.

4.2. Knowledge and perception of PKM

4.2.1. Understanding of Personal Knowledge Management

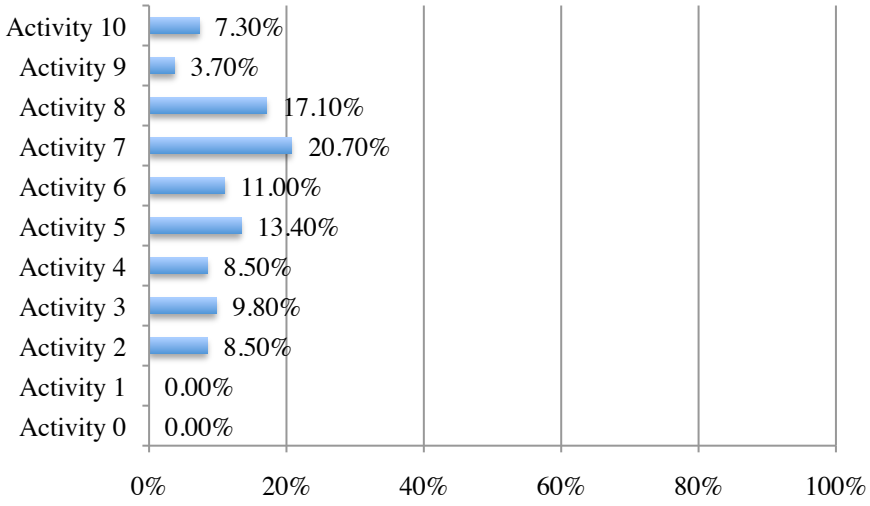
In order to find out, whether the participants all share the same understanding of what PKM is, they were asked to give their person understanding of it. Among the given answers are:

- Methodical approach, considering organization, methods, processes that cover the whole range of PKM (N=13)
- Efficiency in knowledge management and information management (N=5)
- Saving, sharing, finding and re-using knowledge (N=30)
- Extending and updating existing knowledge (N=19)
- Getting an overview about existing knowledge and building knowledge maps (N=10)
- Other (4)

It is interesting that only the first two categories follow a tool-independent overall approach, while all other understandings clearly reduce on specific tools and technologies.

4.2.2. Activity Level in Personal Knowledge Management

A very interesting question about PKM is the level of activity. To get an impression how actively people think they are in PKM, participants were asked how actively on a scale from zero to ten (where zero stands for no activity at all) they manage their personal knowledge:



N=82

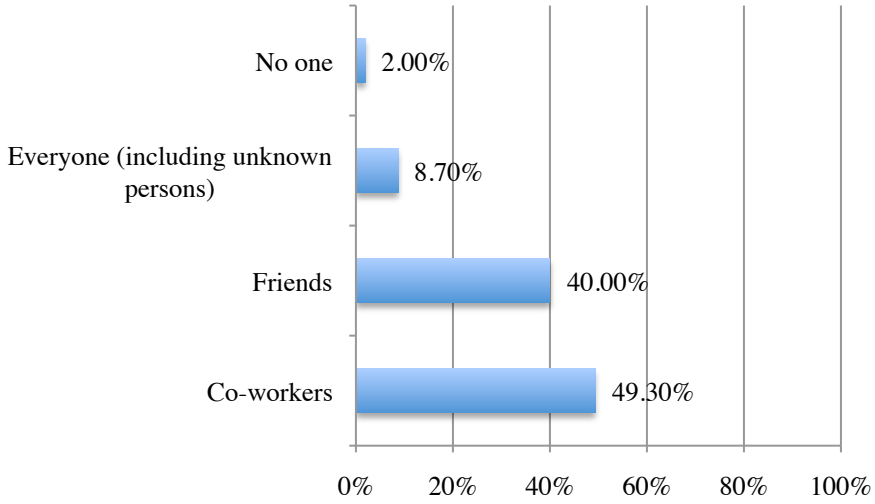
Figure 41: Activity Level in Personal Knowledge Management

It is very astonishing that almost fifty percent are medium to highly active. This result was not expected and also not the fact, that everyone does make personal knowledge management.

4.2.3. Sharing of Personal Knowledge

To find out about the characteristics of sharing personal knowledge, participants were asked with how many other people they currently share their personal knowledge. The answers range from one person up to 300 people, but the majority of the participants share their personal knowledge currently only with between one and thirty people.

Further the participants were asked to state with whom they currently do share or would like to share their personal knowledge.



N=13

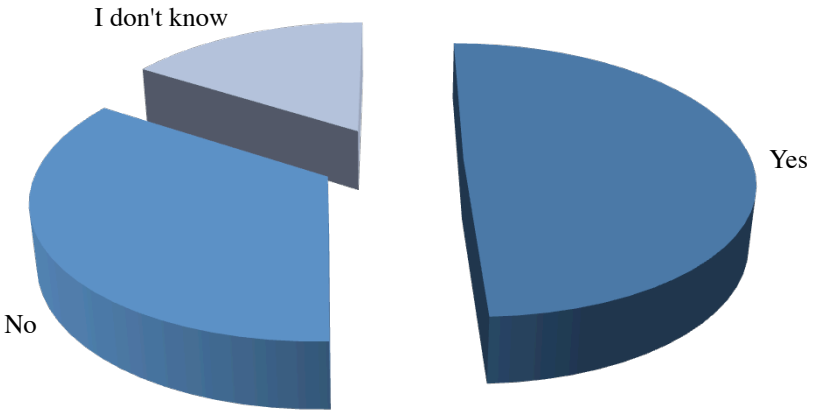
Figure 42: Persons sharing Personal Knowledge with

It is interesting but not very surprising that the vast majority only shares knowledge with a closed and known group of people. People are careful with sharing personal knowledge with unknown persons and thus everyone.

4.3. Company support for PKM

4.3.1. Company-wide Knowledge Management Strategy

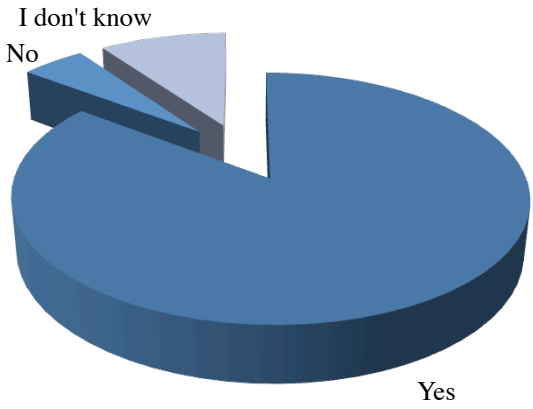
Participants were asked whether the company whey work for have a knowledge management strategy/system (e.g. directive about the storage and management of work and project related data) in place. Almost half of them (49.40 %) said that their company does have a knowledge management strategy/system in place, whereas 34.60 % said no and 16.00 % of the participants answered that they don't know it.



N=81

Figure 43: Company-wide Knowledge Management Strategy

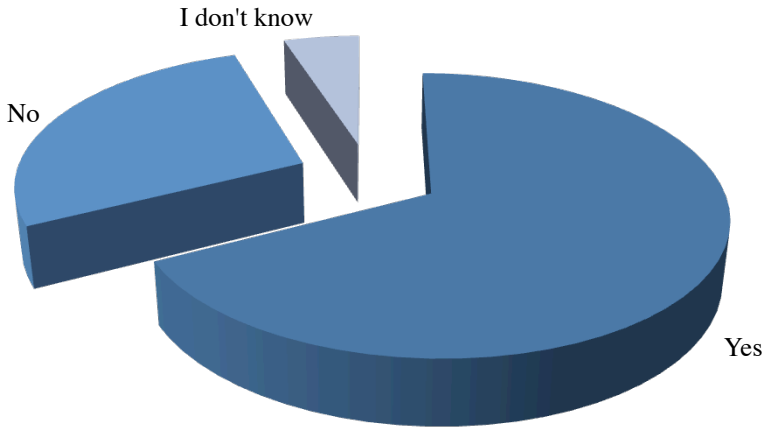
Participants, who stated that there is not a company-wide knowledge management strategy in place, were additionally asked whether they would appreciate if there would be a company-wide knowledge management strategy/system in place. The vast majority (85.30 %) said yes, only 4.90 % said no and 9.80 % said that they don't know.



N=41

Figure 44: Appreciation of Company-wide Knowledge Management Strategy

The portion, which stated that there is a company-wide knowledge management strategy in place, was additionally asked whether this company-wide knowledge management strategy/system includes aspects of PKM. In 67.50 % of the cases it is and in 27.50 % it is not included. 5.00 % of the participants did not know it.



N=40

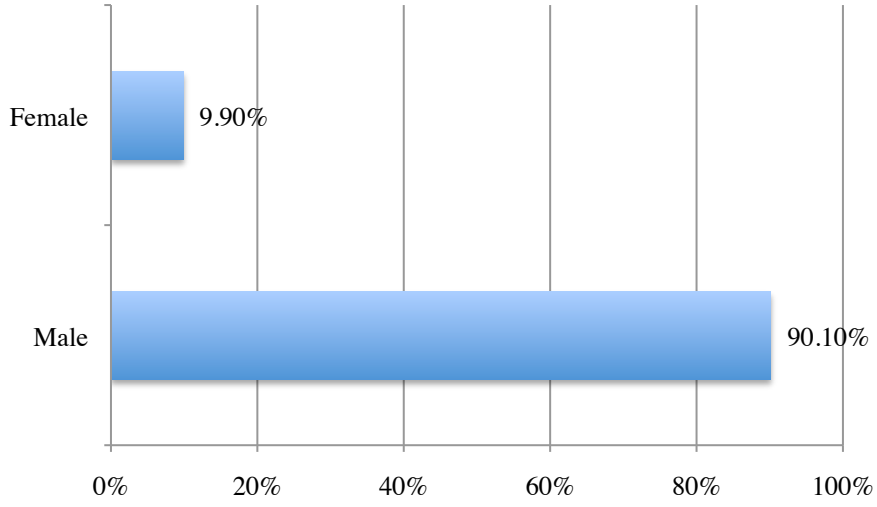
Figure 45: Knowledge Management Strategy including Personal Knowledge Management

This is a very surprising and unexpected result. It is interesting to learn, that in two third of the companies PKM is part of the KM strategy.

4.4. Demographic Data

4.4.1. Gender

90.10 % of the participants were men and 9.90 % female is pretty foreseen and expected result.

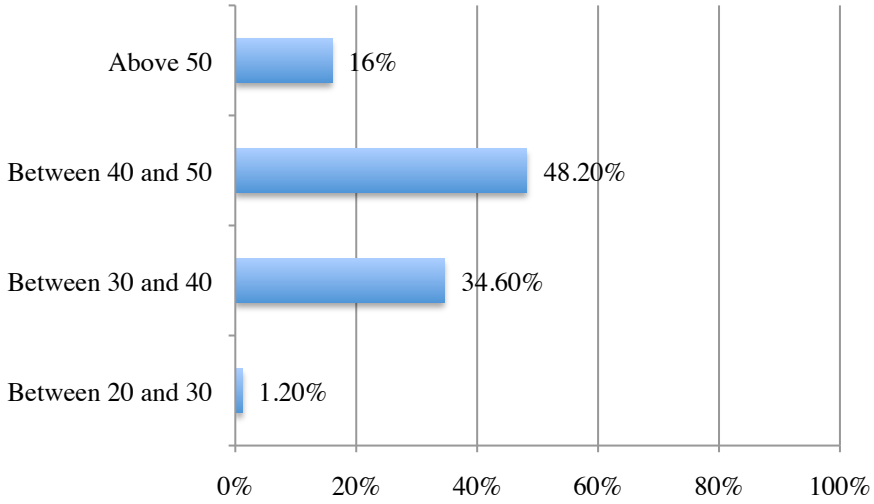


N=81

Figure 46: Gender

4.4.2. Age

Participants were asked to state their age. The results matches pretty well the result of the management level, we reckon.

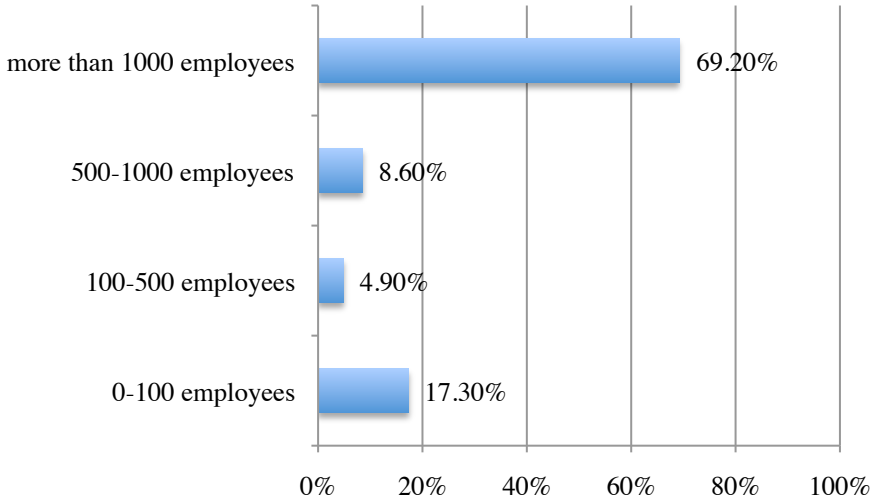


N=81

Figure 47: Age

4.4.3. Company Size

Participants were asked to state how many employees the company they for work current has.



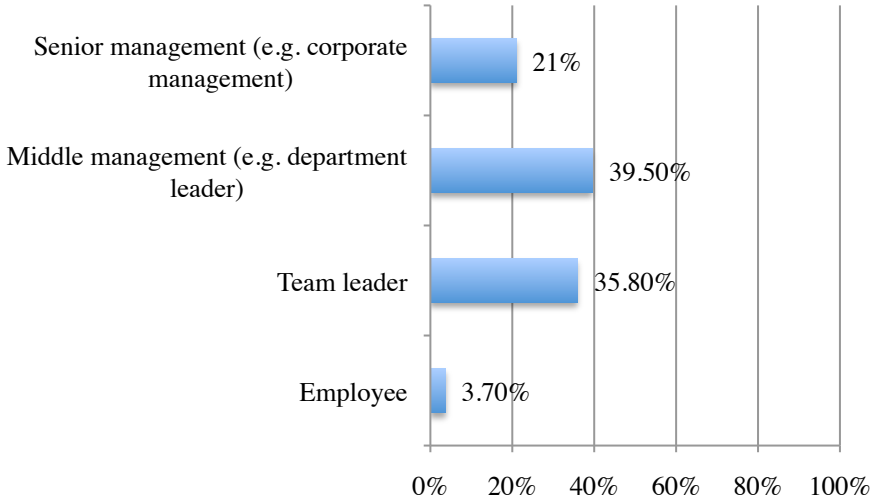
N=81

Figure 48: Company Size

It seems that primary employees of very big companies have participated in the survey. This leads to the assumption, that PKM might be a more business relevant topic that it is for managers of small enterprises.

4.4.4. Management Level

Participants were asked to state which level of management fits their position best.

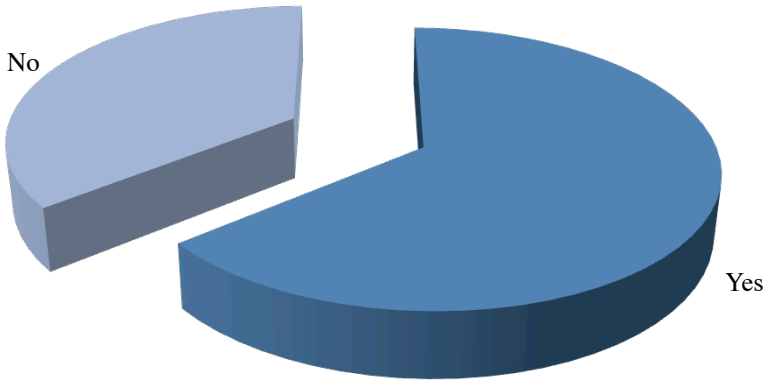


N=81

Figure 49: Management Level

4.5. Interest in Educational Training

In order to find out if there exists interested in educational training in the field of PKM, participants were asked to state if they are interested or not. 64.20 % agreed and 35.80 % said that they are not interested in educational training in the discipline of PKM. This is an interesting result and shows potentials for future work in this domain.



N=81

Figure 50: Interest in Educational Training

5. Interpretation of Results and Conclusion

This chapter treats the overall analysis and the conclusion of the research. In a first step, it answers the research questions based on the survey results of the previous chapter. This leads to the final conclusion and the verification of the thesis that has been derived from the literature review.

5.1. Answers to the Research Questions

Recalling the research questions which are:

- (a) Are manager aware of PKM? Do managers consider PKM important and interesting for their daily work and life?
- (b) Which instruments are used by managers to support PKM? How many tools are used and what technologies are considered for PKM? How satisfied are managers with current PKM instruments?
- (c) What do managers consider important regarding PKM? What tools and technologies must be present in order to provide an added value to managers?

5.1.1. Current Stage of PKM

None of the participants stated that he or she is not managing his or her personal knowledge actively. People are aware of the topic knowledge management and are managing their knowledge. If no KM strategy exists within a company, most of the participants would appreciate to have one, which shows, that people consider it important. Besides the company-wide KM, also PKM is an important topic for managers. The most chosen activity levels are seven and eight. From all participants 37,80 % stated that they manage their knowledge on an activity level of 7 – 8. Including level nine and the portion grows close to 50 %. The mean of the level is 6.

However, based on the survey answers, the definition of PKM covers a wide area, where only a few people tend to use a methodical approach

including the conscious and goal-oriented management and organization of knowledge. Most of the participants reduce PKM directly to tools or functions that they can directly apply and not to specific models or methods. This finding confirms the results of the literature review. Further, some services that were part of the preselected list in the survey are unknown to managers.

According to the survey knowledge is often only shared with co-workers and friends and rarely with more than 30 people. This shows in particular that people tend to keep their knowledge protected and disclosed or only share it with closely related and well-known people. Also, the usage of Web 2.0 technologies is not significantly high.

Tools are used for private and professional purposes equally. Out of 12 tools, 5 tools are used mostly in a private context and 6 tools are used mostly in a professional context. This leads to the following to important results:

- PKM is not only applied on the job, but also for private purposes
- Companies provide the possibility of KM and PKM

In this context, it is interesting that only 49.4 % of the people state that their company supports KM, whereof 67.50 % support PKM in their KM. This clearly refutes our initial assumption that PKM is only rarely embedded in an overall KM strategy in companies.

To sum it up, the most important findings of the survey regarding the first question (a) are:

- Managers are aware of the topic PKM and are managing their knowledge actively
- Managers tend to treat PKM equal to the usage of related tools and PKM methodologies are often not considered
- Most of the companies that have a KM strategy have embedded PKM

5.1.2. Supporting Tools and Technologies

Even though all participants stated that actively perform PKM the usage of related technologies is partially poor. Except task management (which is not closely related to PKM), no tool is being used by more than 40.00 % of the people. At the same time, respondents are using all of the tools in parallel, which indicates that there is no single tool that clearly and strongly supports PKM, rather, a mix of tools and technologies is being used for different purposes. Many of the preselected tools are not used, because they are either unknown, inconvenient or time-consuming (e.g. Wiki, Personal Portals).

Within the survey, we have used the categorization we have built during our literature studies, whereof tools in the following categories are used most frequently:

- Desktop/Personal Wiki,
- MindMap,
- Task Management,
- Document based,
- E-Mail newsletter,
- Information retrieval

The following categories are less frequently used:

- WebLink Management
- Offline WebContent
- Cloud Computing Storage
- Personal Portal
- Note tool
- RSS Reader

The participants have mentioned some categories that have not been included in our survey for example:

- Notes on paper
- People dialogue
- Social medias (e.g. twitter, blog, newsgroup)

The following services are missing in particular:

- Semantic services
- Integrated services combining email, web, files and more

To sum it up, the most important findings of the survey regarding the second question (b) are:

- There is no “killer service” in the area of PKM
- Some technologies are either still not well established or the participants did not relate them with PKM. This holds true especially for web 2.0 related technologies (e.g. Web Link Management).
- Managers tend not to use services because they are (still) too time consuming or inconvenient
- Semantic services and integrated services are missing

5.1.3. Critical Success Factors

Based on the explicit feedback of the participants, the following critical success factors (CSF) are identified:

- Simplicity (as the most frequently mentioned)
- Usability
- Availability
- Actuality
- Quality

In addition to those factors semantic web can be implicitly identified as a very important critical success factor too.

5.2. Thesis Verification

Based on the analysis the thesis is now verified in the following subchapter.

5.2.1. Thesis

Based on our literature review, the following thesis was derived:

Even PKM, the individual management of knowledge, is an upcoming and interesting topic, the current level of usage of PKM is very low. Especially poor is the embedding in any organizational context as well as the methodical and conscious usage of PKM. We assume that significant changes on the technology-side are necessary in order to promote PKM in both, a private and an organizational context.

Based on the answers of the questionnaire, we can reassess our thesis as follows:

The current level of usage is not low, but high. People are willing to manage and share their knowledge (especially among co-workers and friends). However, the PKM-approach is related and reduced to tools and technologies. Methodologies are very rarely used and unknown. Further education is needed in this area.

The embedding of PKM in companies is not poor, but quite strong. Companies that support KM also support PKM and include aspects of PKM in their KM strategy.

Users appreciate the existing tools and technologies. Some tools are still unknown or not well established. Furthermore, tools need to be more easy and efficient. In this regards, semantic web is a very hot topic.

5.2.2. Critical Success Factors and Development of PKM

It is reasonable to say that the complexity in private and professional life will increase during the next couple of years. Furthermore, knowledge has been identified as a critical factor in the private as well in the professional life (see chapter 1). Therefore, the knowledge demand of individuals will increase and knowledge has to be presented in such a way that it is:

- easily accessible and manageable
- structured and interconnected (semantic)

This corresponds to the identified critical success factors (see chapter 5.1.3).

According to the literature research, there will be significant changes in the area of the semantic web and the human computer interface (HCI). The semantic web will become more and more important in different contexts and HCI improvement will lead to intuitive and barrier-free access to knowledge.

The above technologies are very closely related to the critical success factors we have identified for PKM. Therefore, we expect significant improvements and that PKM will become more and more part of our daily private and professional life.

PKM is still very much related to tools and technologies and not to the management and organization of knowledge. Furthermore, according to our survey, tools are still unknown or not well established. In order to manage the knowledge properly, education in the management and organization of knowledge is essential and the related tools must be learned and applied. Thus, education might be an important critical factor for the development of PKM.

5.3. Recommendations

Especially in an organizational context, the following aspects should be considered important with regards to PKM:

- Education and training
- Integration of PKM into KM

6. Limitations

The following limitation applies to this research paper:

- The total sample size of the survey is unclear. Thus, the response rate cannot be determined. It is unclear whether the survey is representative or not.

7. Reflection and Lessons learned

Based on the results of this paper, we can identify the following conclusion regarding our initial motivation.

1. We now consider PKM even more important than before and we believe that it might become an important topic in the future.
2. We gained a very useful overview about PKM, which will help us in our daily life when it comes to the organization and the management of knowledge.
3. We found new tools that might assist us in our own PKM approach.

On the other hand we also identified some issues and problems in the area of PKM. First of all, the term PKM is not well established. While the target and the goal of the research paper could be defined very early, the expression of PKM itself was – at least at the beginning – hard to define and to isolated. Different ideas were used within the team – and also among the survey participants, the idea of PKM was widely spread. We identified that there is not much literature available that covers PKM from a conceptual and organizational point of view.

All of this has led to the effect that the character of the work was changed and the survey part was extended during the research work. Against our expectations, the survey was much more complex and very time consuming. With regards to the survey, we identified the following lessons learned:

- The basic structure should be defined at the beginning
- The intro and the cover information are important
- The first question(s) must invite the participants to go on with the survey (44.00 % of the participants abandoned after the first question)

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9. Appendix I: Questionnaire on SurveyGizmo

9.1. Cover letter

University of Applied Sciences Northwestern Switzerland
School of Business

Olten, May 2010

Survey on „Personal Knowledge Management (PKM) in Organizational Context"

Dear Ladies and Gentlemen

Do you manage your personal knowledge? Is personal knowledge management of high relevance to you both in a personal and organizational context? Do services like Wikis, Weblink Management, Cloud Computing Storage or RSS Reader support your personal knowledge management?

To find answers to the above mentioned questions, we conduct a survey in the subject of "Personal Knowledge Management (PKM) in Organizational Context" as part of our studies *Master of Science in Business Information Systems* at the University of Applied Sciences Northwestern Switzerland". The survey is part of an academic research and does not follow any commercial interests at all.

The survey is carried out online between May 07th and May 21st 2010 and does not take up more than 15 minutes of your time. The survey is conducted strictly confidential and in a completely anonymous manner. This means, that it is assured, that responses cannot be linked with the person entering them.

The survey addresses managers in Switzerland. We are keen to have a high number of participating managers to obtain a representative picture of the current awareness level of PKM, its diffusiveness and application of services. We would appreciate it, if you would share these survey information with your colleagues.

Thanking you in advance for you participation.

Link to the survey: http://www.surveygizmo.com/s3/280843/Personal-Knowledge-Management

In case you are interested in the results and the research paper, please get in touch with us.

Yours faithfully,

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9.2. Introduction

Survey on „Personal Knowledge Management (PKM) in Organizational Context“

Dear Ladies and Gentlemen

Do you manage your personal knowledge? Which relevance has personal knowledge management in a personal and organizational context? Which conveniences offer Wikis, Cloud Computing or Social Bookmarking for your personal knowledge management?

We conduct a survey in the subject of “Personal Knowledge Management (PKM) in Organizational Context” as part of our studies of the Master of Science in Business Information Systems at the University of Applied Sciences Northwestern Switzerland ”. The survey does not follow any commercial interests. It is strictly confidential and completely anonymous manner. This means, that it is assured, that responses cannot be linked with the person entering them.

The survey does not take up more than 15 minutes of your time. It will be conducted online between 07.05.2010 and 21.05.2010.

The survey addresses managers in Switzerland. We are keen to have a high number of participating managers to obtain a representative picture of the current awareness level of PKM, its diffusiveness and application of instruments. We would appreciate it, if you would share these survey information with your colleagues.

Thanking in advance for your participation.

In case you are interested in the results and the research paper, please get in touch with us (email addresses at the end of the survey).

Definition Personal Knowledge Management (PKM):
Knowledge Management (KM) deals with creating and exchanging

knowledge within groups of persons in organisational contexts. The potentials and needs of the individual is often not in the focus of KM efforts, although no-one would deny that the individual as knowledge bearer, -user and -creator is naturally the most essential part of knowledge management. The main goal of PKM is make the individual more productive - and thereby the organisation as a whole. (Voelkel 2009). Therewith, we are focusing on PKM in organisational context.

Reference

VOELKEL, M., 2009. Personal Knowledge Management (PKM) [online]. Available from: http://personalknowledge.org
[Accessed 21 April 2010]

9.3. Questions

1.) Which services are you using for your personal knowledge management?

	Professional usage (used in a job-related context)	Provided by company (service/infrastructure hosted/provided by your company)	Private usage	I don't use it
Desktop/personal Wiki Example: PMWiki, Wikipedia Description: A platform that allows creating and editing web pages and interlinking web pages. Often supports update history and discussions.	[ ]	[ ]	[ ]	[ ]
Mind Map Example: Mind Manager, XMind Description: An approach to represent words arranged around key word.	[ ]	[ ]	[ ]	[ ]
WebLink Management Tool Example: Delicious Description: Social Bookmarking Tool to save, manage and share bookmarks	[ ]	[ ]	[ ]	[ ]
Offline WebContent Example: Read-it-later,	[ ]	[ ]	[ ]	[ ]

LaterLoop Description: Save pages offline for later reading (also on other devices)				
Task Management Example: Outlook (Tasks), JIRA Description: Issue-Tracking-Software and To-Dos	[ ]	[ ]	[ ]	[ ]
Cloud Computing Storage Example: Dropbox, GoogleDocs Description: Internet-Based storage and synchronization of data for usage on several devices	[ ]	[ ]	[ ]	[ ]
Document Based (on a drive) Example: Word, Excel Description: Documents on a local drive or network share, accessible through file system	[ ]	[ ]	[ ]	[ ]
Personal Portal Example: Share Point, Lotus Notes Description: Individual, centralized space to save, manage and share documents, often includes collaborative aspects	[ ]	[ ]	[ ]	[ ]
Note Tool	[ ]	[ ]	[ ]	[ ]

Example: Evernote, OneNote Description: Save, manage and share notes and information				
RSS Reader Example: Firefox, RSS in Outlook, Google RSS Reader, gdRSS Description: Really Simple Syndication, tool go gather feeds from websites	[ ]	[ ]	[ ]	[ ]
Email Newsletter Example: Heise newsletter, C36 daily Description: (Regularly) distributed open letter	[ ]	[ ]	[ ]	[ ]
Information Retrieval Example: Google Search, Desktop Search Description: Searching for information (within documents), e.g. using meta-tags	[ ]	[ ]	[ ]	[ ]

2.) Do you use other services than mentioned above?
( ) Yes
( ) No

3.) Which are the critical success factors of such a service in your opinion?

_____
_____
_____
_____

4.) Do you think that enough services already exist on the market and are available for the support of your personal knowledge management?
( ) Yes
( ) No.
( ) I don’t know

4.1.) What kind of service do you miss?
_____

5.) Which devices/channels do you use to manage your personal knowledge (professional and private usage)?
[ ] Personal computer (stationary)
[ ] Notebook / Laptop / Subnotebook
[ ] Smart-Phone / Cell-Phone
[ ] PDA (Personal Digital Agent)
[ ] Notes on a Paper
[ ] Others

5.1.) Which device/channel not listed above would you prefer to use?
_____

According to your answers before, you don't use any service. Please state the reason for not using them?

6.1.) Why don't you use Desktop/personal Wikis?
_____

6.2.) Why don't you use Information Retrieval?
_____

6.3.) Why don't you use Min Maps?
_____

6.4.) Why don't you use WebLink Management?
_____

6.5.) Why don't you use Email Newsletters?

_____

6.6.) Why don't you use Offline WebContent?

_____

6.7.) Why don't you use a Note Tool?

_____

6.8.) Why don't you use a RSS Reader?

_____

6.9.) Why don't you use Task Management?

_____

6.10.) Why don't you use Cloud Computing Storage?

_____

6.11.) Why don't you use a Personal Portal?

_____

6.12.) Why don't you use a Document Based (on a drive) solution?

_____

According to your answers before, you use at least one of the mentioned services. Please answer some more detailed questions about your usage.

6.13.) How often do you use Wikis?
( ) On a daily basis
( ) Once a week
( ) Occasionally

6.14.) How do Wikis support your personal knowledge management?
[ ] Explanation of expressions
[ ] Quick overview of a topic
[ ] Detailled insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge
[ ] Common content creation

6.15.) Remarks (advantages, disadvantages) about wikis.

_____
_____
_____
_____

6.16.) Which existing service providers or tools do you use as your Wiki solution?

_____
_____
_____
_____

6.17.) Most of the content in a Wiki in is anonymous, if not provided by a company for internal usage. Does this bother you?
( ) Yes
( ) No
( ) I haven't thought about it yet

6.18.) Would you appreciate professional Wiki content (from experts), that addresses business aspects of a specific topic?
( ) Yes
( ) No
( ) I don't know

6.19.) Have you ever written or modified a Wiki article?
( ) Yes, regularly
( ) Yes, sometimes
( ) No, never

6.20.) How often do you use Mind Maps?
( ) On a daily basis
( ) Once a week
( ) Occasionally

6.21.) How do Mind Maps support your personal knowledge management?
[ ] Explanation of expressions

[ ] Quick overview of a topic
[ ] Detailed insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge

6.22.) Remarks (advantages, disadvantages) about Min Maps.

_____
_____
_____
_____

6.23.) Which existing service providers or tools do you use as your Mind Map solution?

_____
_____
_____
_____

6.24.) How often do you use WebLink Management?
( ) On a daily basis
( ) Once a week
( ) Occasionally

6.25.) How does WebLink Management support your personal knowledge management?
[ ] Explanation of expressions
[ ] Quick overview of a topic
[ ] Detailled insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge

6.26.) Remarks (advantages, disadvantages) about WebLink Management.

_____
_____
_____
_____

6.27.) Which existing service providers or tools do you use as your WebLink Management solution?

_____
_____
_____
_____

6.28.) How often do you use Offline WebContent?
( ) On a daily basis
( ) Once a week
( ) Sometimes

6.29.) How does Offline WebContent support your personal knowledge management?
[ ] Explanation of expressions
[ ] Quick overview of a topic
[ ] Detailled insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge

6.30.) Remarks (advantages, disadvantages) about Offline WebContent.

_____
_____
_____
_____

6.31.) Which existing service providers or tools do you use as your Offline WebContent solution?

_____
_____
_____
_____

6.32.) How often do you use Cloud Computing Storages?
( ) On a daily basis
( ) Once a week
( ) Occasionally

6.33.) How does Cloud Computing Storage support your personal knowledge management?
[ ] Explanation of expressions
[ ] Quick overview of a topic
[ ] Detailled insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge

6.34) Remarks (advantages, disadvantages) about Cloud Computing Storage.

_____
_____
_____
_____

6.35.) Which existing service providers or tools do you use as your Cloud Computing Storage solution?

_____
_____
_____
_____

6.36.) How often do you use Personal Portals?
( ) On a daily basis
( ) Once a week
( ) Occasionally

6.37.) How do Personal Portals support your personal knowledge management?
[ ] Explanation of expressions
[ ] Quick overview of a topic
[ ] Detailled insight to a topic
[ ] Actively store and manage personal knowledge
[ ] Share and provide my personal knowledge

6.38.) Remarks (advantages, disadvantages) about Personal Portals.

_____
_____

_____
_____

6.39.) Which existing service providers or tools do you use as your Personal Portal solution?

_____
_____
_____
_____

7.) What other service(s) do you use for your personal knowledge management?

_____
_____
_____
_____

8.) What is your understanding of personal knowledge management?

_____
_____
_____
_____

9.) How actively do you manage your personal knowledge?

( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
0	1	2	3	4	5	6	7	8	9	10

9.1.) With how many other people do you currently share your personal knowledge?

_____

9.2.) With whom do you or would you share your personal knowledge?

[ ] Everyone (including unknown persons)
[ ] Co-workers
[ ] Friends
[ ] No one

10.) Does your company have a knowledge management

strategy/system (e.g. directive about the storage and management of work and project related data) in place?
( ) Yes
( ) No
( ) I don't know

10.1.) Would you appreciate if there was a company-wide knowledge management strategy/system in place?
( ) Yes
( ) No
( ) I don't know

10.2.) Would you appreciate if you were able to manage your personal knowledge within a company-wide knowledge management?
( ) Yes
( ) No
( ) I don't know

10.3.) Why not?
_____

10.4.) Does your company-wide knowledge management strategy/system include aspects of personal knowledge management?
( ) Yes
( ) No
( ) I don't know

11.) What is your gender?
( ) Male
( ) Female

12.) What is your age?
( ) Under 20
( ) Between 20 and 30
( ) Between 30 and 40
( ) Between 40 and 50
( ) Above 50

13.) What is the size of the company you work for?
( ) 0-100 employees
( ) 100-500 employees
( ) 500-1000 employees
( ) more than 1000 employees

14.) Which level does your current position fits best?
( ) Employee
( ) Team leader
( ) Middle management (e.g. department leader)
( ) Senior management (e.g. corporate management)

15.) Would you be interested in education or trainings in the field of personal knowledge management?
( ) Yes
( ) No

9.4. Thanksgiving

Thank You!
Thank you very much for completing the survey.
If you are interested in our work, please drop us an email.
If you have any further questions in regards to this survey, don't hesitate to contact us.

Kind regards,
Marcel Gabi (marcel.gabi@students.fhnw.ch)
Olivier Bally (olivier.bally@students.fhnw.ch)
Daniel Walther (daniel.walther@students.fhnw.ch)