4th World Conference on Business, Economics and Management, WCBEM

Sustainable Knowledge Management Shown In The Example of a Company Operating On The Telecommunications Market

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Abstract

Modern organizations are being strongly pressured to increase agility and competitiveness, operate on the global market, and engage in alliances. One key success factor for these organizations is the human factor. Human resource and knowledge managers, line managers and team leaders are ultimately responsible for the effective and efficient operation of the organization. They are collectively responsible for the evolution of the organization in order to meet new challenges. These responsibilities can only be born if the these managers have the appropriate knowledge in their respective fields of expertise and know how to share this knowledge sustainable among each other, and have an effective awareness of the need for a knowledge sharing network within the organization. In this study, we develop a social media based knowledge management system for a company which operates in the telecommunications market, serving a special niche market. Managers from similar disciplines contribute to the project in sharing their knowledge on social media, mainly Google Plus. We develop structures for a sustainable knowledge management environment for companies in the example of managers, all of who have expertise in management or information technology. Applying social media for managing knowledge could turn these managers into knowledge leaders in their organizations. The results of the forthcoming analysis will show the advantages and potential for improvement, for using social media knowledge bases for knowledge exchange.

Keywords: Knowledge Management; Social Media, Google Plus, Knowledge Sharing

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1. Introduction

One trend that is strongly changing the characteristics of information management is globalization. The driving forces are different and cover the deciding factors derived from business goals, characteristics of products, and changes in information management. The deciding factors connected to information management are motivated by growth, access to wider markets, and the availability/price of the resources required. The productivity of the traditional plan-oriented development has been objected and alternative approaches are provided. In addition to traditional information management, different kinds of service-based solutions are overwhelming the market. In spite of the fast-growing tendency toward globally distributed collaborative multicultural organizations in information engineering, there are not so many reports that are publicly available. We are a part of the information society in which information and communication technology is coming closer and closer to the people who are not necessarily experts in information and communication technology. Irrespective of this fact, they are members of the information society that has to fulfill their needs. The available data and software solutions as main products of information engineering have to be user friendly and have to consider the cross cultural issues and dialog, which are important particularly in multicultural societies and companies. To avoid the lack of understanding we have to be aware about the importance of culture in society, particularly in the information engineering in which mobility and multiculturalism (cross cultural communication) are parts of our everyday life. Cultural models are used to recognize the common differences between different cultures. The most commonly used models are Hofstede's model and Lewis's model. The first one is based on analyses of the differences according to five behavioral factors, and the second one is based on the types of reactivity and interaction insensitivity. The stereotypes that are specified by these models help to recognize the differences in multicultural and cross cultural context, but yet do not explain all the behavioural differences that are in the focus of information engineering.

2. Knowledge management and value creation

Knowledge management is what company management tells one needs to know, based on what they think is important. Social media is how one's peers show what they think is important, based on their experience. Knowledge Management reflects a hierarchical view of knowledge to match the hierarchical view of the organization, and it is channeled and gathered into a knowledge base where it is distributed through a predefined set of channels, processes, and protocols. For social media there is no predefined index, no pre-qualified knowledge creators, no knowledge managers, and ostensibly little to no structure (Bradley and McDonald 2011). If a company is aware of its knowledge management processes, it can follow a sustainable knowledge management approach. But having a knowledge management system is not enough. What happens when we face a less-than-ideal situation in our knowledge based daily business? We have four main components within a knowledge management process,

- raw knowledge generation
- knowledge refinement
- articulation of knowledge need
- knowledge feedback

reflecting the needs of three types of stakeholders,

- knowledge originators
- knowledge adaptors
- knowledge users

What makes this difficult is that there are many failure points in every single process step for all groups of stakeholders. Ponomareff (2010) points out four of them:

- poor knowledge usability: 'When knowledge doesn't map to usage patterns of the frontline, usage declines and results in poor knowledge adherence as staff look for other ways to find an answer'
- lack of knowledge related feedback: 'When the frontline fails to understand the value of knowledge or doesn't feel involved in the process, it doesn't give much feedback on improving knowledge – meaning the organization doesn't know where the knowledge gaps and improvement opportunities are'

- poor knowledge generation channels: 'The flow of knowledge across the organization is through ad hoc channels that are only used reactively, resulting in poor knowledge flow as important information just isn't communicated or is communicated after the fact'
- unclear knowledge improvement priorities: 'When organizations approach knowledge improvement in an ad hoc way they base knowledge improvement on their best guess of what is right answer, instead of using knowledge-related metrics and end-user feedback'.

How can companies gain value from social media? Bradley and Mc Donald (2011) emphasize the term 'mass collaboration', which consists of 'social media technology, a compelling purpose and a focus on forming communities:

- Social media technology provides the conduit and means for people to share their knowledge, insight, and experience on their terms. It also provides a way for the individual to see and evaluate that knowledge based on the judgment of others.
- Purpose is the reason people participate and contribute their ideas, experience, and knowledge. They participate personally in social media because they value and identify with the purpose. They do so because they want to, rather than being told to as part of their job
- Communities are self-forming in social media. Knowledge management (KM) communities imply a hierarchical view of knowledge and are often assigned by job classification or encouraged based on work duties. Social media allows communities to emerge as a property of the purpose and the participation in using the tools. This lack of structure creates the space for active and innovative communities.

Creating mass collaboration involves more than building technology and telling people to participate. It necessitates a vision, strategy, and management actions that we will discuss in subsequent posts. The point here is that while they may seem similar, social media and KM are not the same. Recognizing the differences is a crucial step toward getting value out of both of them as well as avoiding a struggle of one over the other' (Bradley and Mc Donald 2011).

3. Drafting a Social Media Based Knowledge Management System

Social Media use accessible and scalable communication technologies and focus on social interaction. Social media begun influencing companies in most industries and have changed their customer related communications flows as well as internal ones (Erkollar, Oberer 2011). Social Media are the collection of strategies, practices and tools for communicating, creating and sharing content and for discussing online; whereas social media technologies take on many different forms: social networks are sites which allow people or companies to create their own web pages and connect with others or share content; blogs are online journals with entries appearing with the most recent first; wikis allow people to add content to or edit information in these wikis, acting as a communal document or database; Forums are areas for online discussion, often around specific topics or interests; podcasts are audio or video files what are available by subscription, through different services; micro blogging is a combination of social networking and bite-sized blogging, where mainly short updates are distributed and shared online; content communities (Mayfield, 2008). Social media resources could allow businesses to conduct their core competences and processes differently. Social media have become a key factor for influencing customer preferences and behavior (Kane, Fishman 2009; Kurkela 2011). Social Media have become a key factor for influencing customer preferences and behavior, but for companies there is little guidance for incorporating social media in information and communication strategies using process routines and structures. Often there is a lack of acceptance of the importance of social media for a company's marketing and sales efforts (Levebre 2007; Mohmed, Rahman 2010; Rehmani, Khan 2011). Considering the knowledge management process and knowledge stakeholders, in companies operating the telecommunication sector we have a complex system: raw knowledge is generated by nearly every employee (knowledge quality depends on employees expertise, task and experience), and most of them do not follow a common rule as to how to generate knowledge in a unique company wide approach; knowledge refinement is somehow done by someone; articulation of knowledge need is unstructured or not measurable, and knowledge feedback partly available. Regarding knowledge stakeholders, all employees can hold all three knowledge stakeholder roles at the same time: being a knowledge originator, a knowledge adaptor, as well as a knowledge user.

What makes it complex is that there is mostly no defined process as to how to share knowledge within the whole organization, within departments, but also knowledge sharing for employees with different areas of expertise, such as an engineer shares some knowledge about a topic with someone from finance or marketing, assuming that the topic is of interest for them as well. Assuming single 1:1 employee relationship or 1:n employee relationship it may work, sending to some colleagues information on selected topics. But what about a n:m relationship, which means many employees share their content, or filtered content, with all or selected employees within the organization. In this study, we do not include the aspect that content could be shared between organizations: We focus on an organization inside-view: internal employees share knowledge with other internal ones. In this study, we develop a social media focused knowledge management system for company operating the telecommunications industry. Employees from different department with contribute to the project in sharing their knowledge on social media, mainly Google Plus. We develop structures for a sustainable knowledge management environment for companies, in the example of a company in the telecommunications sector. The project we started in 2014, designed in three main phases, introduced in table 1.

Table 1. Project phases.

Project phases	Description
Pilot 1	development and implementation of a social media focused knowledge base for employees in the area of IT and process management
Pilot 2	development of a company internal knowledge base (for employees in the area of business, IT, operations management and finance)
KB Run	run of a social media focused knowledge base for internal employees and external partners (mainly consulters), with a scheduled go live in 2016, after the evaluation (and improvement) of the two pilot projects.

Before the first pilot was started, an internal analysis showed that currently there is a knowledge base available in the company. A team of two process managers is responsible for elaborating traditional knowledge management techniques and for applying them for the whole organization. The process managers use the company internal intranet to share knowledge with employees. The implemented knowledge flow was a one-directional one (information was provided on the intranet for employees, no direct feedback or interaction possibilities for employees). Mainly work instructions, work arounds and process flow summaries were distributed on the intranet. The process team uses an Intranet application for process team – department and process team – employee and knowledge sharing (one-directional); and email transfer for a bi-directional communication between process team and employees. Selected educators use mobile applications to get in touch with each other. There was no knowledge base process implemented. In a first step, before working on the project itself, the process team increased the employees' knowledge on knowledge management in general, the knowledge management process with all respective process steps, and emphasized the need for a knowledge base. For the first pilot project, most employees from the IT department and process team agreed to contribute to the project. In a first step in cooperation with the new established knowledge management (KM) Team, a draft of the basic knowledge management process was developed, emphasizing that all contributing employees may hold all stakeholder roles. In a second step, the process team in cooperation with the KM-team introduced Google Plus to all participating employees. There was a need for that, since the project team agreed on using social media to support the already implemented knowledge base, and among social media Google Plus offered according to the project team, a good solution. A summary of the pre-Pilot phase is given in Table 2. Table 3 shows the Google Plus domains focused on in the project. Table 4 summarizes the guidelines defined for designing the social media based knowledge management system.

Table 2. Pre-Pilot Phase.

Pre-Pilot phase	Description
Pre-Pilot 1	Internal analysis on the need for a social media based knowledge base
Pre-Pilot 2	Knowledge management audits
Pre-Pilot 3	Design of an updated knowledge management process for the company
Pre-Pilot 4	Introduction to Google Plus
Pre-Pilot 5	Pre-Pilot testing

Table 3. Google Plus domains.

Domain	Description (Venosdale 2011, Levis 2011, Google 2011, Smith 2011)
Circles	contacts that you can group by using different criteria for grouping, such as interests and types of contact. Circles follow a relationship-based approach. Contacts can be added to the circle by drag and drop. The benefit is that you can manage your appearance on the Web, enabling you to not show all the content to all followers but rather to a selected circle. As an educator, you can use Google Plus to add a circle for any knowledge topic and add your colleagues to that circle.
Sparks	offers the possibility to enter keywords and shows a list of results matching these keywords, showing besides the title of the article or contribution a short excerpt from the content as well, making it easier for users to select contributions that are relevant for their search. Sparks can be stored and the user can get updates on the stored keyword, in case new contributions are available. An important feature is that the results of such sparks can also be shared with circles or selected people. This feature could be used in class for searching and sharing course relevant content.
Hangouts	can be generated and used as an instant videoconferencing tool with circles, or selected contacts in circles. Hangouts offer video conferencing with multiple users; small groups can interact on video. This feature can be used by educators to discuss topics, trends, and new approaches with colleagues. Sparks is a customized way of searching and sharing and follows an interest-based approach.
Huddle	offers group chat possibilities. It is 'a group messaging experience that lets everyone inside the circle know what's going on, right this second'. For educators, integrating this feature could offer benefits for knowledge transfer

Table 4. System design (draft).

Step	Description
Forming the pilot team	The pilot team consists of process managers, employees of IT and Network management departments
Definition of team based knowledge base competences	
Raw knowledge	what kind of raw knowledge should be considered for inclusion
Who	Which team is responsible for what kind of knowledge
Team themes	the focused theme that every team will follow
Team trainings	teams trainings on editorial guidelines, the type of writing and editing to be put in place
Knowledge refinement	responsibilities for knowledge refinement
Cross referencing	responsibilities for including cross references to match topic relevant for different expert areas, or teams.
Nomination of a knowledge base	Responsibilities: managing circles and knowledge base related topics on social media, control who is permitted to contribute, and what and how they may

manager	contribute, source reliable, relevant knowledge, while weeding out outdated, irrelevant, and incomplete information; he has to organize and categorize this information to make it easy for the educators' community to find and use it

4. Conclusions and further steps to be taken

New social technologies are transforming the way educators share information. As with traditional knowledge management systems, social networks also collect and organize most data, documents, presentations, photos, videos, audio recordings, etc. This information forms the basis of an organization's core knowledgebase. Social media networks provide a way to unleash this wisdom so that educators can share knowledge, and update and enrich core content. This creates a dynamic, living knowledgebase, where educators can access reliable information and enhance the value of the knowledge base. Successful social media focused knowledge bases produce measurable productivity benefits and create environments that not only manage and retain crucial knowledge capital, but also spawn collaboration and innovation necessary for success. Social media based knowledge management systems can be used as the central organizing element to collect and share information; and help to increase productivity and efficiency. Employees can focus their time on their own core competencies and the business objective at hand, rather than wasting time searching for and validating information.

In the Pre-Pilot phase a knowledge professional was nominated at the backbone of the knowledge base and a knowledge management strategy defined, which is mainly focused on the integration of social media tools in the knowledge base landscape of the company. Google Plus activities were integrated in the existing company wide landscape and established an end-to-end knowledge management process. Next steps to be taken are summarized in table 5.

Table 5. Next steps to be taken.

Step	Description
Consolidation of information silos	'Most companies have many information silos scattered across departments. Content is contained in multiple systems and might be disorganized and unmanaged. This can make it difficult and time-consuming for employees to find what they're looking for. Social Knowledge Networks, however, can be used to consolidate data from existing content management systems into one, organized knowledgebase. This provides employees one place to find information, speeding and easing information discovery' (Green 2009)
Preservation of knowledge assets	As people retire or work remotely, there is an increased need to capture their knowledge while they're at your organization.

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