

How Social Software Shifts Existing Paradigms in Corporate Knowledge Management and Learning

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Abstract. With the rise of the web 2.0, so-called social software applications have come to affect private and professional information behavior in a manner, which yet has to be thoroughly understood. The digital social networks resulting from user participation and interaction in such, most often privately used web applications, however, are already considered to be promising catalysts of corporate knowledge management and learning processes. This paper aims at addressing this topic from an academic as well as practical perspective. On the one hand it discusses traditional and latest developments in academia. On the other hand it showcases approaches to using concepts of web 2.0 within a global management consulting, technology services and outsourcing company in order to depict scenarios of the corporate use of digital social networks and user generated content. As a basis for this, traditional approaches to knowledge management and learning are reviewed and the validity of their hitherto diverging perspectives is analyzed. Finally, it is argued that in order to effectively introduce bottom-up concepts and tools of the web 2.0 into organizations and to secure their sustainable use, a shift of traditional knowledge management- and learning-paradigms towards a new, holistic perspective is required and should be based on four key dimensions.

Keywords: social software, collaboration, knowledge management, learning, talent management, web 2.0, technology-enhanced learning

1. Setting the Scene

Digital social networks and user generated content are the driving force of today's participative web [1]. The underlying concepts promote user participation and the distribution of user generated content based on the paradigm of the web 2.0 – serving as a platform, harnessing collective intelligence, and offering rich user experiences [2; 3]. How these phenomena affect the professional workplace environment or how they might even be successfully transferred to corporate contexts has been subject matter

of considerations in practice as well as in academia [4; 5; 6; 7]. Therein, aligning web 2.0 concepts with corporate knowledge management (KM) and learning processes is often considered to enable the cultivation of a collaborative corporate culture, to provide bite-sized information at the point of need, and to enable rapid knowledge transfer. Thus it might leverage efficiency and effectiveness as well as creativity and innovation of workforces. In general, effective KM and learning are seen as corporate success factors for creating and sustaining competitive advantage and continued business success [8]. Following these arguments, various ideas have been evolved on how to integrate the concepts of the web 2.0 into existing KM and learning approaches. The different perspectives of these two disciplines, however, have remained.

In order to understand the value and importance of the concepts for organizational KM and learning, one needs to take a closer look at the characteristics of today's workplace environments and industries. This paper is concerned with the domain of management consulting, technology services and outsourcing. It is heavily dependent upon the concepts of organizational knowledge management and learning. As part of the tertiary sector, the core products of this industry are knowledge-intensive services. The work in this field is specifically characterized by a dynamic environment of ever-changing tasks, roles, and topics. Furthermore, increasingly high attrition rates and job rotations on a global level require the effective sharing of experiences, skills, and knowledge within companies of this sector.

This paper aims at showcasing scenarios of learning and knowledge management in a case study in order to develop an adequate perspective when introducing concepts of web 2.0 into organizations, which aim at enabling a collaborative corporate culture. In order to do so it is useful to combine latest academic research findings as well as first, even preliminary, observations from implementations of these concepts in corporate settings. In a first step, Chapter 2 reviews traditional academic and professional approaches to KM and learning in the corporate workplace. Furthermore, the characteristics of social software and web 2.0 are presented. Chapter 3 will then reveal practical observations based on Accenture's approaches and initiatives for the corporate use of web 2.0 concepts. This will be done in order to take a closer look at usage scenarios and possible implementations of the concepts presented before. Based on an analysis of corporate tools for knowledge and learning management in the context of traditional KM and learning paradigms, the final chapter will make an argument for a new perspective on individual and organizational competence development based on four key dimensions. Today's organizations will have to follow this paradigm shift caused by the concepts of digital social networks and user generated content in order to successfully provide workplaces to their employees, which fit their need and enable them to perform adequately.

2. Traditional Paradigms and Latest Developments

From a scientific as well as practical perspective, two traditional paradigms have coined the fields of KM and learning.

On the one hand, there is the focus on knowledge itself and its management. Within the traditional academic discourse knowledge was defined as contextualized

information enabling an individual to take different actions [9; 8; 10]. A variety of taxonomies for classifying knowledge has been presented in this context [11; 12]. While Nonaka and Takeuchi [10] differentiate tacit from explicit knowledge, Spender [13] proposes a differentiation between explicit, implicit, individual, and collective knowledge. The concept of managing knowledge is – just like knowledge itself – defined in varying ways. Most common definitions, however, agree on considering strategic, organizational, and technological issues. Within this article we follow the definition of Chatti et al., who define KM as a “collection of the following processes: create, transform, organize, store, disseminate, share, deliver and use knowledge” [14]. Accordingly the process of KM is centered on the people creating, sharing, and making use of the knowledge to enhance learning and performance in organizations [15]. In order to support these processes and for enabling the storage of explicit knowledge, an organization can make use of a variety of IT systems. Even though the key issues of learning and KM have been, and still are, the object of significant effort both in academic and corporate contexts, one can state that these IT systems so far have failed to live up to their promise of facilitating the dissemination and integration of knowledge [16; 17].

On the other hand, there is the perspective on the individual employee as a learner. Within this article we will focus on the parts of learning arrangements that are supported by technology (eLearning) [18]. Based on classic learning theories, such as behaviorism, cognitivism, instructional design, and constructivism a variety of approaches to using technology for the enhancement of the individual (or even collective) learning process has been developed. Initial attempts to support the learning process by information technology lead to basic applications of computer-based trainings [e.g. 19; 20]. These were based on cognitive learning theory and focused on learning in interaction with multimedia. The next step was to transfer these applications to the asynchronous and globally accessible medium of the Internet. Accordingly, web-based trainings were developed, which included first elements of a learner’s interaction with co-learners [e.g. 21; 22]. Blended learning approaches – most commonly combining instructor-led/classroom-based training elements with computer-/web-based learning applications – were found to be most effective in more complex learning situations and became a very noticeable field of research and corporate practice. Nevertheless, common learning approaches revealed a lack of interaction and communication between the participants, which lead to the approach of technology-enhanced learning (TEL). This concept puts the learning process up front and considers technologies as supporting means. Key aspects of TEL are individualization of learning content and processes, integration with context (e.g. business processes and day-to-day living situations), and interdisciplinarity of the learning approach [15].

Reviewing the traditional approaches to KM and learning some interfaces between these two disciplines become obvious. It seems that the disciplines of KM and eLearning/TEL are partly overlapping. Chatti et al. point out, that “KM methods and techniques are being adopted in learning environments.” [14; citing 17] This becomes even more obvious when analyzing the concept of workplace learning (WPL). WPL incorporates central elements of KM, such as knowledge creation, acquisition and application processes [23]. WPL can best be described as learning activities, which are aligned with professional activities and work processes. Most approaches of work-

place-learning, however, lack the integration of cooperation approaches and information as well as knowledge management.

Furthermore, the fields of KM and learning are – both in academia and in companies – often still approached from different perspectives, kept separate in many organizations, and the management of the underlying processes is often conducted with different approaches/concepts and (incompatible) technology infrastructures [24]. Yet, considering the latest (academic) developments in regards to the above mentioned approaches one realizes that these paradigms are shifting. Especially web 2.0 concepts – in the form of social software – are applied to both, KM and learning [6; 25; 26]. Social software, allowing employees to collaborate seamlessly and exchange information easily, can be seen as a connecting element. They might enable a broadening of the overlapping area already described in former approaches, especially when discussing learning 2.0 [7] and social learning approaches [27].

Before we follow this train of thought, however, it is essential to understand the nature of the core concepts of web 2.0. Within the past years a new set of web applications evolved and seems to have significantly changed the way information is distributed. Sites like Wikipedia, Blogger, Wordpress, Twitter, del.icio.us, Flickr, YouTube, Facebook, MySpace, Orkut, LinkedIn, etc. appeared and soon stood at the very top of the rankings of sites with the most page views around the globe¹. These applications are not so much characterized by innovative technologies, but by a common principle. They broke the prevalent paradigm of the Internet as a web of computers, which connects machines and forms an informative web generated by mostly professional information suppliers. It shifted towards a participative web [1] by setting the focus on using the web as a platform with the aim of enabling users to interact, share, and collaborate with each other. Taking this perspective into consideration, the importance of the user and his/her activities in collaborating, connecting, and exchanging information with others emerges as central element of the concept of web 2.0.

This leads us to the term *social software*, which can be considered part of the overall concept of web 2.0, although this descriptive name for the new class of applications already existed since the “Social Software Summit” in New York in 2002 [7; 28]. While first attempts to specify this term only mention the aspect of interpersonal connectivity (which can be considered a characteristic of many IT applications), more recent scientific opinions, especially within the field of information science, have come to the following definition: “Social software (or web) consists of web based applications, which support users in exchanging information, building and nurturing relationships, communicating and collaborating in a social or collective context, as well as the resulting data, and the relationships between people using these applications” [29, p. 28]. Figure 1 displays the concept of social software in a functional scheme. The circle surrounding and including the various types of software represents the communicative function, which all of these tools have in common.

¹ According to Alexa YouTube (Rank 3), MySpace (6), Wikipedia (7), Facebook (8), Blogger (9), Orkut (11) were ranked within the most visited sites globally (Alexa, 2008).

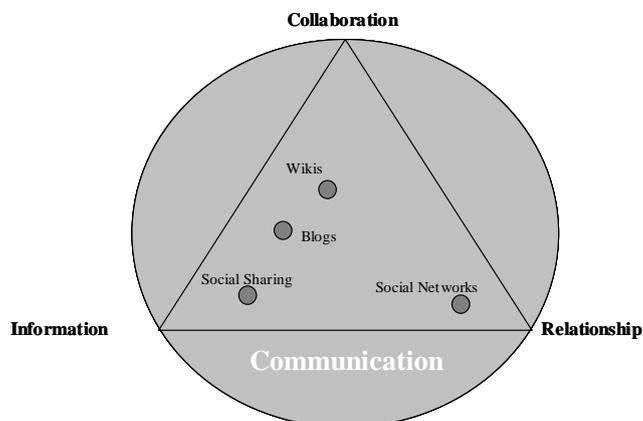


Fig. 1. Social Software Scheme [28]

The mentioned four types of applications (wikis, blogs, social sharing, and social network) however, do not only serve a communicative function. As the definition above points out, communication enables the exchange of information, the collaboration, and the building and nurturing of relationships, which – as a result – constitute digital social networks. Within the triangle of these three functions, the four types of social software can be placed according to their main affiliation. Furthermore, not only the various applications play important roles for the concept of social software but also the data mentioned in this definition, which results from the interactions within the described fields of activity. As these applications spotlight the user and only serve as a platform for his/her activities, the information provided by such services seems to be of a different quality. It is user generated content that decides over popularity and success of the here described family of web applications. User Created [or Generated] Content thereby is defined as “content made publicly available over the Internet, which reflects a certain amount of creative effort, and which is created outside of professional routines and practices“ [1, p. 9].

The information provided by and created with social software creates the phenomenon of blurred lines between producers and consumers (described by Toffler 1980 as prosumers). This change of traditional roles in the information architecture brings about opportunities and challenges. On the one hand data produced in non-professional routines is available at large and without the barriers of economic interest. On the other hand it might lack the quality of professional services or even be misused. Regardless of concerns regarding the quantity and quality of this content, it can be stated, that the information exchanged within social software applications is of a social nature. It is produced, corrected, shared, rated, and recommended by users. Internet portals like digg or qype, which are based on user created recommendations and ratings for news or restaurants, reveal the full power of such information. Information created in professional routines would neither be able to reach the degree of coverage nor the extent of credibility.

Altogether the rise of the web 2.0 and its user generated content has developed a dynamic environment within the Internet itself and within all services providing cor-

porations dependent on the information provided by the World Wide Web. Furthermore, the described principles of the Internet may also be transferred to the realm of corporate approaches to KM and learning. As an example the following chapter presents a case study of approaches to using digital social networks within Accenture's corporate KM and learning processes.

3. Case Study: Scenarios of Social Software in Corporate Knowledge and Learning Management at Accenture

With more than 186,000 employees and annual revenues of \$23.4 billion in fiscal year 2008 Accenture Ltd. is one of the largest, global management consulting, technology services, and outsourcing companies [30]. As insinuated above, the ability and motivation to transfer knowledge from one project to another is of central relevance for the success of services, such as consulting, system integration, and outsourcing [31]. For consultancies like Accenture – as for all kind of companies providing knowledge intensive services – it is essential to enable employees to seamlessly find, acquire, and use information within their daily work processes/activities as well as to cooperate with each other easily and immediately. Furthermore, the rapidly changing work environment and role-specific requirements ask for talent management approaches that enable self-organized competence development and thus a flexible workforce.

Regarding their workforce, the consulting industry faces specific challenges due to a wide range of individual competencies and educational backgrounds. Since the common job profile of a management consultant is of a rather methodical and analytical type, each newly hired employee needs to go through a certain core training, which brings all employees up to one common level of consulting skills regardless of their previous experience and abilities. Accordingly, Accenture invested over \$900 million in training and professional development in 2008 and provided 12 million hours in educating to its employees [32]. In addition to local and central instructor-led/classroom-based training activities, the employees are introduced to such existing knowledge networks, tools, and communities in order to combine the initial learning approach with continuous KM activities. This is done in a blended approach of online learning and virtual communities as well as face-to-face community meetings and classroom trainings.

Next to these traditional training approaches, Accenture has a strong focus on KM activities. These include a knowledge exchange platform, discussion forums, and communities of practice, to mention but a few. Most recent efforts, accordingly, are concerned with the introduction of web 2.0 applications into these activities in order to enable the enhancement of collaboration. The internal initiatives aim at supporting four levels of corporate collaboration: connecting, teaming, networking, and sharing. The combination of the three formerly (at least) loosely coupled areas of collaboration, learning, and KM form digital social networks and can be seen as a powerful concept of enabling companies to exchange information and build up knowledge. Accenture's approach of a so-named High Performance Workspace – as an interface to access the evolving digital social networks – will be illustrated in the following.

It is characterized by a next-generation workplace portal deeply designed around an employee's role, which enables collaboration, KM, and learning in daily business. This approach is illustrated below and will be described in more detail in the following.

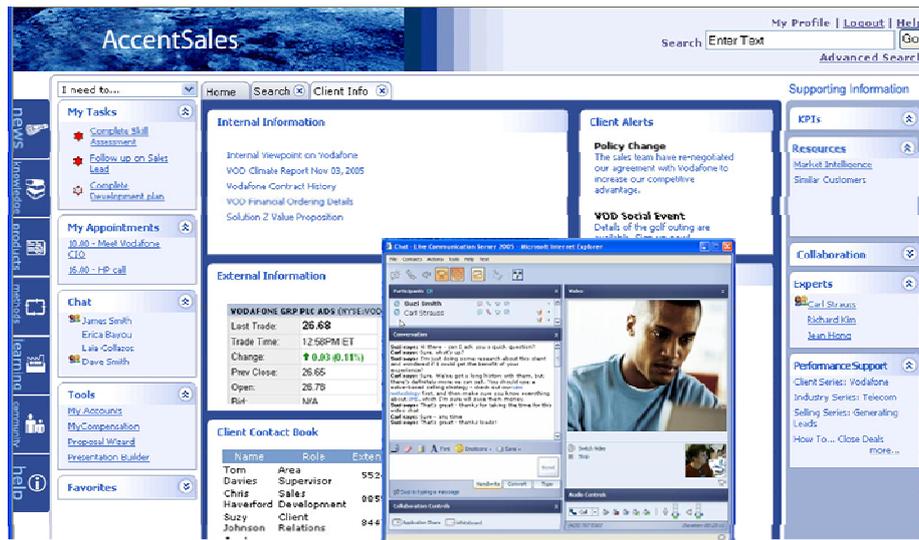


Fig. 2. Screenshot of the Accenture High Performance Workspace

First of all, the concept of the High Performance Workspace provides the employee with basic task-supporting information elements by supporting his/her work with personalized and task-related information such as operative key performance indicators, client information, a list of tasks, appointments, and available tools. These elements are not necessarily considered part of KM or learning, they rather represent the personal information management required to perform one's tasks. Traditional elements of KM and learning may be seen on the left, where respective links to the knowledge exchange database and a learning management system (LMS) are displayed. These resources are always at hand to provide the employee access to task-, domain-, or client-related credentials and learning modules. The concepts of digital social networks and user generated content are introduced by additional features of the High Performance Workspace. As with the definition of social software, these elements may be classified into four types: Wikis, blogs, social sharing, and social networks.

The foundation of these newly introduced elements of the workspace is represented by the Expert toolbox. This tool is part of the concept of digital social networks. Connecting the employee with experts relevant to his current task, domain, or client, enables him/her to gather highly context-sensitive, situational and relevant information. A click on the respective colleague leads the employee to a social network platform called *PeoplePages*. Here the employee may retrieve background information on the expert mentioned on the High Performance Workspace and gather insights regarding his/her previous project experience, interests, skills, and personal network. On the

profile page of his/her colleagues, he/she is also able to read his colleagues' blog entries. This element of social software is also included into this platform and therefore adds the elements of digital social networks and user generated content in a meaningful manner. The employee is thus revealed a network of content and colleagues, who may be contacted immediately and function as subject matter experts, coaches, or contact points for the discussion and clarification of open questions. This way both purposes are served: managing knowledge within the organization and enabling individual learning processes. Similar approaches might also lead to a more intensive participation in vibrant communities of knowledge sharing and learning [27].

An additional web 2.0 element introduced into the High Performance Workspace at Accenture is considered with the aspects of social sharing and collaboration. This is represented by two applications aiming at the dissemination of user generated content, the *Accenture Encyclopedia* and the *Media Exchange*. These two platforms enable the employee to either access content generated by colleagues or to contribute own content relevant to other colleagues in similar task-, domain-, or client-contexts. As Figure 3 shows, the *Media Exchange* is a YouTube-like platform for user contributions in rich media formats.

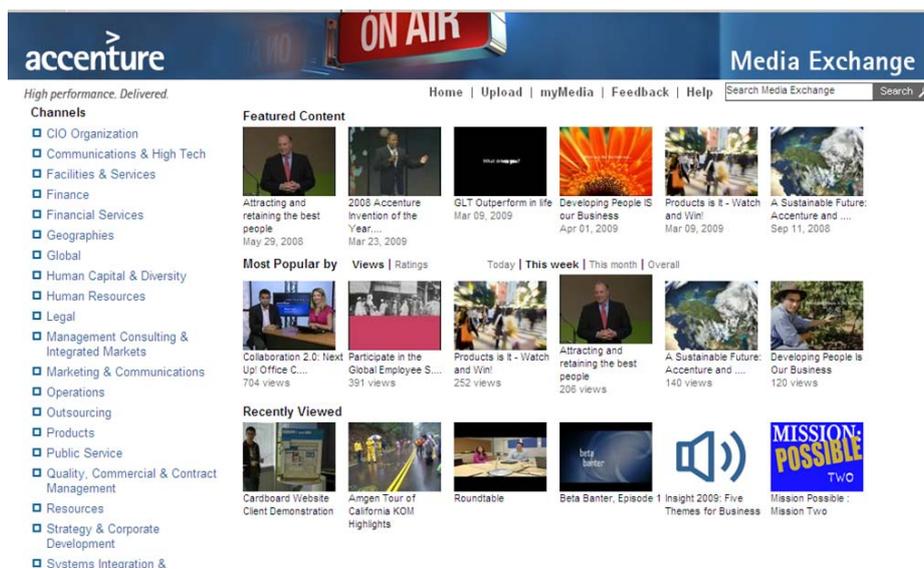


Fig. 3. Screenshot of the Accenture Media Exchange

With the allusion to similar web platforms, this tool allows employees to transfer their experience with such applications from the private realm to corporate practice. This also applies to the Wiki functionality within the *Accenture Encyclopedia*, a collection of user contributions to a firm-wide glossary of clients, projects, and functional expertise.

Next to the mentioned web 2.0 concepts, further tools have been introduced into the Accenture High Performance Workspace. Employees, for example, may share their internal and external bookmarks on task-, domain-, and client-related resources. Based on their tags, entire folksonomies are created by sheer user participation.

Within the Accenture High Performance Workspace and across all internal resources, employees now have the possibility to review, recommend, and rate items of the knowledge exchange database, the learning management system, or even user generated resources.

This diversity of user generated content reveals the full power of employee collaboration for KM and learning processes within a global management consulting, technology services, and outsourcing company. The employee now is not only dependent upon the information provided to him by the employer or captured and classified in traditional learning and KM approaches. He/she rather has access to the dynamic, personal, and experience-based information, created by his colleagues in a digital social network weaved by the above mentioned concepts of web 2.0 and the underlying social software applications.

4. Learnings of User Generated Content in Knowledge Management and Learning: Calling for One Holistic Perspective

After having reviewed traditional and latest developments in academia as well as practice, we would like to pick up the train of thought of Chapter 2 and close this article with an analysis of the impact of the here described move towards the use of digital social networks for corporate KM and learning processes. The previous chapters have illustrated that this development confronts traditional approaches to KM and learning with a paradigm shift. As the creative power of the user generated content and digital social networks unfold by means of the above mentioned web 2.0 concepts, the lines between KM and learning are blurred. Is a blog entry reflecting the learnings from a project or a classroom training an element of learning since it supports the reflective function of the cognitive learning paradigm or is it rather an element of KM since the employee shares experience with his peers? The same considerations apply to many of the items contributed by employees in other such tools (e.g. Wiki entries on a client, Reviews of a WBT, etc.). This is fostered by the fact, that people do make extensive use of social software in private and increasingly in professional settings, too. Especially technical-savvy users do demand for tools supporting them in a comprehensive manner on their workplace. They ask for tools and concepts already used within their private everyday life.

While technically easy to implement, companies are faced with problems to incorporate these web 2.0 concepts from an organizational perspective. Major problems of this process have been discussed within several articles. For instance, Leyking et al. suggest an approach of integrated WPL, applying learning and knowledge instruments to a workplace setting, which should be based on premises of individualized, integrated, and interdisciplinary KM and learning technology. This covers the integration of knowledge acquisition and learning into the day-to-day environment of the employees, the support of interaction/collaboration and the information exchange, and the integration of enterprise systems with learning 2.0 systems. They conclude that the integration of KM and learning activities into work processes can be enabled by uniting formerly isolated functions of KM systems, learning applications, and further

enterprise systems. [15] Chatti et al. characterize KM and learning processes as two sides of the same coin and state that KM and learning approaches “need to recognize the social aspect of learning and knowledge and as a consequence place a strong emphasis on knowledge networking and community building to leverage, create, sustain and share knowledge in a collaborative way, through participation, dialogue, discussion, observation and imitation.” [24]

Chatti et al.’s image of the two sides of the same coin would mean a complete overlay of KM and learning processes. The introduction of web 2.0 concepts into corporate KM and learning approaches, however, does not apply to all elements of the traditional activities of these fields. It is the user generated content, which is added to existing concepts or part of new innovative tools, that brings these two perspectives closer together. The focus of these scientific concepts – as also the activities at Accenture reveal – rather concentrates on providing innovative platforms in order to enable collaboration and thus unfold the power of user generated content. Figure 4 accordingly presents a scheme of our understanding of a more holistic perspective focused on the concept of collaboration.

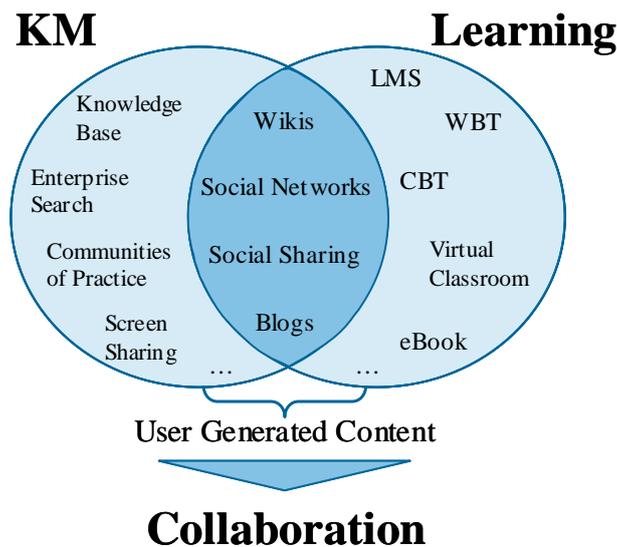


Fig. 4. Collaboration as interface between KM and Learning

When applying this scheme for corporations and by incorporating the mentioned concepts of web 2.0 – most often to foster the collaboration between employees – in professional settings, one of their main potentials becomes obvious: Since the content created within these concepts is generated by users, and because it is rated and maybe also filtered by the users, they are more likely to produce useful and successful results from an organizational as well as from an individual perspective. It also becomes apparent that within both – KM and learning – the employees are driven by personal

needs and interests, resulting in much higher knowledge retention/transfer rates and learning success.

Having analyzed the shifting overlap between traditional KM and learning perspectives when introducing bottom-up concepts of the web 2.0 into corporate organizations, we therefore consider the following 4 dimensions to be most critical for success:

- **Organization:** Do not approach the introduction of web 2.0 concepts from a KM or learning perspective only! Create an organizational interface between existing KM and learning departments, which is considered with any kind of initiative touching the concepts of user generated content and digital social networks.
- **User Experience:** Do not approach the introduction of web 2.0 concepts without considering the targeted workforce and the habitual usage behavior of the employees! Analyze existing usage patterns from private settings in order to leverage the full potential of collaboration.
- **Culture:** Do not approach the introduction of web 2.0 concepts from a technical perspective only! It is essential to realize that the here presented concepts are all based on the idea of bottom-up generation of content and digital social networks. The success of these is not based on technical solutions but a collaborative corporate culture.
- **Consistency:** Do not approach the introduction of web 2.0 concepts for every possible purpose while leaving behind existing successful elements of KM and learning! While to some extent – especially when using social software – KM and learning will merge or at least move closer, other usage scenarios will still remain to be of unique interest of one of the two realms. It is essential to use a comprehensive perspective when establishing corporate instruments for enabling the creation and sharing of user generated content. But it is also necessary to provide one-stop-shops for employees to access both areas and use the desired methods and tools in adequate, comprehensive (technical) environments.

Based on the here presented observations in academia and practice, it can be concluded that both – KM and learning concepts – offer suitable fields of application for digital social networks and user generated content. Therefore they should be integrated into a coherent “high performance workspace” approach, which should in addition be enhanced by tools offering opportunities to create, share and make use of user generated content. In summary, the challenge is to begin using a more holistic perspective when adding web 2.0 concepts to corporate KM and learning processes.

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