A Simulation Game Approach Towards Establishing Knowledge Management in Organizations

Heimo H. Adelsberger, Markus Bick
Information Systems for Production and Operations Management
University of Essen, Germany
{h.adelsberger|bick}@wi-inf.uni-essen.de

Mario Heller
Educational Institute of the German Trade Unions Council (DGB)
Duesseldorf, Germany
Mario.Heller@dgb-bildungswerk.de

Abstract: During the past decade knowledge management is emerging as one of the most important and widespread management issues. The knowledge contained in people’s heads and organizational structures is seen as a valuable asset that needs to be developed and leveraged. Unfortunately, efficient and effective knowledge management still is the exception. As a result of several surveys certain barriers against an efficient knowledge management can be identified, e.g., lack of knowledge management skill and lack of understanding knowledge management and its benefits. Obviously, it takes time to learn new methods and techniques and to apply them until they become embedded. Therefore, we point out the need for an adequate didactical method. We present a computer supported simulation game approach, which supports the implementation of a holistic knowledge management.

Introduction

Knowledge management implementation processes are being accompanied by several barriers. Within its Knowledge Management Research Report 1998, KPMG Management Consulting identified certain barriers to an efficient implementation of knowledge management (see KPMG, 1998). The main barriers are lack of skill in knowledge management (49%) and lack of understanding knowledge management and its benefits (40%). Obviously, it takes time to learn new methods and techniques and apply them until they become embedded.

Knowledge management, like every new business topic, is a new learning area for employees engaged in this issue (see also Erlach et al., 2000). Teaching knowledge management is complex and multi-faceted, not only focusing specific methods or tools, it requires well-elaborated strategies for efficient education.

In this paper we will demonstrate the particular applicability of computer supported simulation games in the field of knowledge management. We will introduce our simulation game approach, which focuses on the implementation of a holistic knowledge management in organizations. Also, we will reveal potential obstacles and pitfalls, as well as discover the functionality of knowledge management tools. Subsequently, we present an example of a knowledge management training concept, utilizing the simulation game. We conclude with a summary of the relevant results and an overview of further opportunities.

Establishing Sharing Cultures in Organizations (ESCiO)

Thus, before discussing the actual simulation game approach, we will briefly introduce the ESCiO tool. The research project Establishing Sharing Cultures in Organizations faces knowledge management obstacles and barriers on different levels. Within an interdisciplinary approach, recent insights from the fields of research in information systems, humanities, and social sciences are being brought together. This project helps laying the foundations for creat-

1 The project Establishing Sharing Cultures in Organizations is funded by the German Federal Ministry of Education and Research. For further information see http://www.dl2001.de.
ing a culture of sharing knowledge (Sharing Culture in Organizations) and moreover establishing this culture in the long run. We intend to support this complex management task by developing the ESCiO tool.

The core of the ESCiO tool architecture (see Figure 1) are the building blocks of knowledge management (Probst & Romhardt, 2000), which offer the opportunity to structure the knowledge management processes to logical phases. Furthermore, they suggest effective points for interventions and provide a tested framework for diagnosing the sources of knowledge problems.

Consequently, the ESCiO tool provides the opportunity to approach the highly complex domain of knowledge management from four different perspectives, i.e., Barriers, IT-Tools, Human Resources Management, and Case Studies. Within the tool these perspectives are attached to the building blocks of knowledge management. Thus, enabling the user to learn respectively gather information according to these perspectives with regard to specific knowledge management processes, e.g., knowledge identification, knowledge acquisition, knowledge distribution, etc. However, the ESCiO tool is just a means to support the simulation game run by activating the simulation game participants' learning process(es).

The ESCiO Simulation Game Approach

In most cases simulation games are determined by several factors (see further Hoegsdal, 1996), e.g., number of participants, target group, requirements, etc. Hence, in order not to extend the scope of this paper we will focus on the following important determinants: Target Group, Number of Participants, Simulation Game Model, and Scenario.

Target Group and Number of Participants: The simulation game was designed to be adaptable for different user groups and varying numbers of participants. No previous knowledge or special technical skills are required to take part in the game. However, at least basic knowledge about the use of a computer and a web-based user interface, i.e., web-browser, is helpful. The main target groups of the simulation game are people who have never got in touch with the highly complex domain of knowledge management before. This includes besides all management levels key account managers as well as graduate students. Evidently, the game is open for all kinds of people interested in the field of knowledge management. Accordingly, the number of participants can vary from six to approximately twenty participants. Traditionally, simulation games are being performed in groups. Therefore, the participants of the simulation game are divided into groups with three to five persons in each group.

Simulation Game Model: Simulation games are commonly being played as a three-phase process, involving briefing, activity, and debriefing. As described in (Adelsberger et al., 1999). Referring to Kolb’s experiential learning cycle the simulation game follows this simulation game model. The simulation game starts with the briefing. The participants are generally introduced into the game, the rules and the scenario. Subsequently, the actual simula-
Integration of the ESCiO Simulation Game in a Training Concept

Putting theoretical findings into practice is exactly what is demanded of knowledge managers. Training them for this purpose was a task given to the Educational Institute of the German Trade Unions Council (DGB) and which gave us opportunity to make use of the benefits of the ESCiO-tool. The basic concept developed for a training program was based on a two-fold strategy: At first the participants were trained to use strategies and tools for knowledge management in order to optimize their individual work-processes. To achieve this goal, the participants were forced to look at their daily practices as practices of a “knowledge worker”. Once having done so, they are able to apply the strategies and tools for knowledge management they have been made familiar with onto their own environment. In effect, this preliminary exercise helps them not only to gain time in the future by organizing their work more effectively, but also to develop methodological competencies, advanced professionalism and to reduce unnecessary, redundant work and stress. But what we were primarily and successfully aiming at is, that in doing so, from now on the participants are not only able to see the use of knowledge management but are also convincingly able to explain it to anyone who asks them. We are convinced, that only after this goal has been achieved the participants can and will successfully contribute to the establishment of knowledge management in their organization (see Heller, 2002). It is this first step, that has to be made, before the second, namely learning how to implement knowledge management in organizations, makes sense. Therefore the participants were then forced to transfer their experiences with regard to personal knowledge management onto an organizational level, particularly that of their own businesses or organizations.

On the premise that we were not able to use more than four days of training, we consequently split the training into two parts: Two days on personal knowledge management and two days on organizational knowledge management. Between those two parts a break of fourteen days was introduced. Within those two weeks the participants were given access to a web based learning environment, including amongst other resources, the ESCiO Simulation Game. By using the ESCiO tool and thus exploring the effects and possibilities of knowledge management in this period, the participants were able not only to apply their new experiences but also to start the transfer onto an organizational level. This of course helped to start the second part of the training on a much more advanced level than it would have been possible without using the ESCiO tool.

To sum it up, using a simulation game like ESCiO is a unique way to optimize the consultation processes of our participants (i.e., management, staff members, shop stewards, representatives of workers’ councils) with regard to the
Complex and highly intransparent mechanisms of knowledge management in organizations. The classical way, namely to source the future advisers and consultants with prepared answers would not work. Training them to reproduce statements or key experiences is not enough to help those who ask them questions about what the implementation of knowledge management means, what consequences it triggers and what changes it will require of any individual actor. To fulfill this highly complex task (among their many other tasks) properly they have to develop an intellectual flexibility and the ability to reflect on the issue of knowledge management from various perspectives which both can only be trained effectively and with sustainable effects through simulation games like the ESCiO tool.

As a result, using the ESCiO tool allowed us a) to use the available time for training more effectively and b) to optimize the output of our trainings. Given the restraints of the target group for the trainings described, using the ESCiO tool has actually proofed to be a condition sine qua non for achieving the goals of our training concept within the limited time and given resources.

Conclusion and Further Research

In this paper we focused on a simulation game approach for the highly complex domain of knowledge management. We underline that a simulation game approach is an appropriate teaching method for knowledge management issues. Evidently, improving the understanding of strategies and concepts of knowledge management as well as the handling of knowledge management systems significantly. Moreover, we presented how the ESCiO simulation game can be embedded in a training concept, combining traditional and recent didactical methods.

The central component of the simulation game is the ESCiO tool. Utilizing this system we enable the simulation game participants to solve practical knowledge management problems. Furthermore, non-cognitive skills like teamwork, communication skills, and complex thinking are promoted implicitly. The presented approach will bridge the traditional gaps between theoretical knowledge and practical experiences.

Based on our experiences, we are now planning to apply the simulation game in a broader context. The target groups are multinational staff-members within international companies. Therefore, we derive higher demands regarding the training concept. Here of course, various new research topics concerning organizational and national cultures as well as management and communication styles will arise.

References


