Failure of Knowledge Management Systems in the Financial Services Industry

Research-in-Progress

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Abstract

The success of information systems (IS) and especially knowledge management systems (KMS) is defined through the acceptance and usage of them. Directly after the implementation the initial success of such systems starts with a relatively good acceptance and usage. When the first hype is over the problems of the systems become evident and the acceptance and usage dwindles. But what kinds of problems lead to the decreasing acceptance and finally to the rejection of the system? Our research in progress approach is intended to investigate those reasons for changes in the beliefs, attitudes and satisfaction of KMS users. Therefore one longitudinal case study is conducted in the financial services industry. The main objective is to elucidate inhibitors and enablers of KMS usage over time. The first period of investigation will be conducted before the implementation of a new KMS replacing an old one implemented in 1999 which has been identified as a major reason for a declining job satisfaction within the organization observed. The second period of investigation is directly after the implementation and the third one after at least one year thereafter. Within our research-in-progress article we describe the theoretical background and research setting of our approach and present first results of the first data collection period.

Keywords: knowledge management, knowledge management system, failure, longitudinal case study,

Introduction

Knowledge management (KM) within organizations has been widely discussed in information systems (IS) research (Sambamurthy and Subramani 2005). Firms doing well in KM usually perform well, while others, who cannot effectively manage the flow of knowledge and information, have a poorer performance. Managers have realized that the right allocation of knowledge and information throughout the organization is an important task to ensure that a firm stays innovative and competitive (Darroch 2005). As the research on KM shows there are some companies doing well in administering KM, but there are also some which are not able to establish an adequate knowledge and information flow, which generates an adequate quality of the knowledge and information.

In order to explain these phenomenon, there are several research approaches explaining that the use of knowledge management systems (KMS) supports the knowledge sharing behaviors in organizations and that these systems enable effective and efficient knowledge sharing (Garud and Kumaraswamy 2005). Therefore, research investigating the organizational and the individual adoption decision to use KMS is well-established in information systems (IS) research to explain the success of KMS. Based on general theories and models of individual acceptance, research provides theoretical and empirical evidence for factors explaining the initial usage decision of these systems. In addition to these theories IS research provides evidence for continuous intention to use an IS (Bhattacherjee 2001) and for usage behaviors in
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Moreover, IS research explains the beliefs and attitudes towards an information that might change over time (Bhattacherjee and Premkumar 2004).

Beside these theoretical discussions of individual behaviors related to IS and the benefits of KMS we observed the case of a KMS failure. Within the organization a KMS has been implemented in 1999 and being a great success at that time. However, over time the attitudes and beliefs towards the system changed until now. Currently, the system is still running, however, it is not supporting anymore the knowledge sharing behaviors in the organization as employees use different ways to share and acquire relevant knowledge and information. From 1999 to 2011 employees’ perception of the system changed from being enthusiastic in 1999 to being frustrated in 2011. As a consequence a new KMS is going to be implemented at the end of Q1 in 2012, which gives us the chance to acquire (1) the current situation right before the implementation and with attitudes and the satisfaction concerning the old system, (2) the situation right after the implementation and (3) the situation at a later date after the implementation to identify drivers and inhibitors of KMS usage and their change over time.

Observing this scenario and reviewing relevant literature of KM and IS usage, the objective of this paper is to investigate why a successful KMS used for many years changed to be a failure and what are drivers and inhibitors of KMS usage. Therefore, the questions we want to answer are:

**What are drivers and inhibitors of KMS usage?**

**Why and how do perceptions of KMS change over time?**

As a base for our work we use the IS continuous model as well as the Model of Attitude Change to identify the reasons why successful KMS can be a failure after a while and employees’ attitudes towards the system change. The scenario described enables us to investigate in period one the changed perceptions of an KMS legacy system and in period two and three drivers and inhibitors of the newly implemented KMS and whether they will change over time.

Therefore the article is structured as followed: In the next chapter we want to clarify the differences of knowledge and information in the context of our article and discuss the relevance of KMS. Furthermore the used models are introduced. In section 3 we describe our research method. In section 4 first results are presented. The article concludes with a discussion about the results and implications for theory and practice.

**Research Background**

Our approach is based on theories and models on knowledge and information, knowledge and information management systems as well as IS usage which will be introduced in the following sections.

**Knowledge and Information Management**

**Definitions**

Knowledge and information has been discussed in a vast amount of literature and many different views on it have been generated (Alavi and Leidner 2001; Holsapple and Joshi 2002; Joshi et al. 2007; Kettinger and Li 2010; McQueen 1998; Nonaka 1994; Zack 1999; just to mention a few). These theoretical approaches differentiate between knowledge and information. That's why different definitions for both concepts have emerged (Alavi and Leidner 2001; Kettinger and Li 2010). Knowledge can be divided into two types: (1) tacit knowledge and (2) explicit knowledge (Nonaka 1994). In our work we want to concentrate on the management of explicit knowledge, which can be formulated and stored in an IS. One reason for this is that it comes closer to the notion of information and vice versa. Therefore knowledge can be defined “as a justified belief that increases an entity's capacity for effective action.” (Nonaka 1994). We use a special perspective different to the classical one as we assume for our explanatory approach that “knowledge is an object to be stored and manipulated [and retrieved]” (McQueen 1998; Zack 1999). Knowledge is therefore produced by persons and can be stored in respective IS. In addition, information is defined as “data in a contextual environment which helps give shape, and make sense of the raw numbers and text” (McQueen 1998). Similar to our view of knowledge information is represented by objects and can therefore also be operated in and via IS. Therefore it is not so much important in our approach whether we talk about knowledge or information. For us, it is important what makes either
knowledge or information not available or not available in expected quality (Wang and Strong 1996) to users in the way they can and are willing to use it.

**Knowledge Management**

“Knowledge management [...] refers to a systemic and organizationally specified process for acquiring, organizing and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective and productive in their work.” (Alavi and Leidner 1999).

Figure 1 shows the KM processes suggested by Alavi and Leidner (2001). The first step is knowledge creation, followed by knowledge storage and retrieval as well as knowledge transfer and terminated by knowledge application. The process is supported by groupware, communication tools and intranet systems. For our research, mostly the knowledge storage/retrieval and transfer steps are of interest because we do not want explore the knowledge creating process or how knowledge is applied in the company. We want to focus on the use of an intranet system in order to support the knowledge storage, retrieval and transfer tasks.

In relation to knowledge management and the described process a lot of research approaches investigate knowledge sharing behaviors in organization (Gee-Woo Bock et al. 2005) and identified several antecedents explaining initial and continuous knowledge sharing behavior of individuals (e.g. He and Wei 2009). Furthermore, these approaches refer to KMS as a supporting IS for these tasks (McLure Wasko and Faraj 2005) which are explained in the following section.

**Knowledge Management Systems**

“Knowledge management systems (KMS) refer to a class of IS applied to managing organizational knowledge. That is, they are IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application.” (Alavi and Leidner 2001).

The major task of KMS is to capture and integrate knowledge and information within the company (Grant 1996). Knowledge and information has to be treated alike so objects of both can be shared and retrieved by employees of organizations.

For the adoption of KMS prior research provides several explanations including perceived ease of use, perceived usefulness among others (see for example Damodaran and Olphert 2000; Money and Turner 2004; Garud and Kumaraswamy 2005). Also for the usage of these system different antecedents like perceived task-technology fit, personal outcome expectations, performance-related outcome expectations, KMS self-efficacy, KMS characteristics have been observed (Lin and Huang 2008).

**Information Systems Usage**

The adoption and use of IS is a well-established area of IS-research providing evidence of enablers and inhibitors of an individual’s intention to use an IS (Davis et al. 1989; Venkatesh et al. 2003; Venkatesh et al. 2007; Venkatesh and Bala 2008). These model and theories have provided different explanations why individuals adopt an IS. One classification of these antecedents is provided by the dual-factor model of IT-
usage as it classifies the antecedents of to be either enablers or inhibitors of the system usage (Cenfetelli 2004). Inhibitors are factors that have only a negative influence on the intention to use if they are perceived by the individual. Non-existence of these factors has according to the dual-factor model no influence on an individual's intention to use. Examples of these constructs are for example perceived threats (Lapointe and Rivard 2005). In contrast enablers are factors that have positive as well as negative influence on the intention to use (Cenfetelli 2004). Examples are perceived ease of use and perceived usefulness (Davis et al. 1989). A discussion and overview of different antecedents being either enablers or inhibitors of the initial intention to use an IS are provided by Petter et al. (2007).

Beside these works on the initial intention to use an IT innovation IS research also focus on resulting usage behaviors (Burton-Jones and Straub 2006) and the intentions to continue to use an IS (Bhattacherjee 2001). In addition, changes in beliefs and attitudes while using an IS has been investigated by IS research as well (Bhattacherjee and Premkumar 2004). The proposed IT continuous model (Bhattacherjee 2001) and the Model of Attitude Change (Bhattacherjee 2004) posits that with an changing environment beliefs about, attitude towards, disconfirmation of expected beliefs, and satisfaction with a system might also change over time. These changes can result in a different behavior in using or not using IS anymore depending on the modified beliefs and attitudes.

**Research Model and Method**

**Research Model**

Our research model for investigating inhibitors and enables of KMS usage is based on the IS continuance model (Bhattacherjee 2001) as well as the post-adoption model of attitude change (Bhattacherjee 2004). The intention of our approach is to identify those inhibitors and enablers perceived during the use of KMS that might change beliefs about, satisfaction with and attitude towards a KMS. Figure 2 illustrates the basic research model of our approach. Based on the functionality of a KMS and surrounding conditions the perceived performance and the expectancy of the employees concerning the KMS may or may not be confirmed. This (dis-)confirmation has impact on the satisfaction and the beliefs about the KMS. Both changes have an impact on the attitude towards KMS, which together with beliefs influence the intention continuant use a system. We now pose that there are inhibitors and enablers that influence the satisfaction, beliefs, and attitudes concerning KMS to the point that the continuous intention to use it changes over time.

With the method described in the following section we are intended to identify inhibitors and enablers of employees in the organization observed in order to explain in a first step, why the legacy system turns from a successful one to failed KMS.
**Research Method**

According to Fishbein and Ajzen (1975) an investigation of beliefs and attitudes towards a behavior in question has to be done following a two-step process which includes in a first step an expectancy formulation of beliefs. In order to identify relevant salient beliefs about the behavior in questions the beliefs have to be elicited from target users from each specific context. In a second step, the strength of each of these beliefs about the behavior is assessed and is weighted multiplicatively by the value assigned by the individual to that attribute of the behavior. Within our approach presented in this research in progress article we will focus on the first step and we will identify salient modified beliefs for the continuance usage behavior regarding KMS. Therefore we chose an organization reporting a currently and significantly failed KMS and that currently preparing to implement a new KMS in order to raise the quality of information to be allocated.

We will use the suggestions by Dubé and Paré (2003) combined with the method suggested by Yin (2009) in order to elicit data about enablers and inhibitors of continuant usage intention of KMS users. As mentioned above we want to conduct a longitudinal case study and compare the gathered data to show the influence of specific events on the users’ attitude towards the changing KMS. The first case study addresses the perceived dissatisfaction of the employees and aims at finding out the reasons for a dwindling intention to use the systems. Some first results of this step are discussed below. The second case study addresses users’ attitude, satisfaction, and intention to use the system concerning the new KMS before and right after the implementation. The last case study is planned to be conducted at least six months or one year after the implementation to gather data about the intention to use the KMS and reasons for possibly changing beliefs, attitudes and intentions, after some time has elapsed. The main elucidation technique is going to be semi-structured interviews with clerks, sales, and managers through all hierarchical levels. Additionally, documentation is used to elucidate changes in the quality of information.

**Current Situation and First Results**

The organization that is in the particular state of having dissatisfied employees, implementing a new KMS and allowing the elucidation of data is a German financial services provider with approximately 900 employees and total assets of 3.2 billion euro. All in all, there are four hierarchical levels, beginning from bank clerks and customer service to top management. The history and the design of the system, which was implemented in 1999, and the current development will be described in this section and is illustrated by Figure 3.

Since 1999 the bank has used a static intranet system to support its employees with relevant knowledge and information. This system is a web application and delivers rudimentary functionality to represent websites and provide links to included documents. There is no personalization within the system that enables dedicated access to data or the possibility to restrict access to certain pieces of information. In addition to IT-limitations, there is no organization wide implementation of routines that manage the information flow within the organization. Each department has developed its own process and generates information as demanded or required by other departments. The consequence is that there exist many processes for information delivery. All in all, the organization lacks of routines and a KMS that secure a required amount of quality of information. In order to adjust to the situation, users complement the intranet by email and paper-based information sharing. In addition, employees call quite frequently colleagues of other departments in order to receive information they need to perform their daily tasks. Since 1999, the system has not changed and has not adapted to the current requirements and the ever increasing amount of information (Eppler and Mengis 2004; Jones et al. 2004). But the environment surrounding the KMS has changed through extra organizational events like the implementation of the Basel II guidelines and periodically changing legal requirements. Radical intra organizational changes also occurred through the merger with another financial service provider in 2000 or the introduction of a new core banking system in 2008. All these events changed the requirements of the KMS, which were not implemented. Based on first interviews with different employees the drivers and especially inhibitors for the changing attitude and usage behavior regarding the legacy KMS can be categorized according to four dimensions: process (e.g. missing organizational embeddedness of the KMS after several organizational changes), information (e.g. preparation of information based on standards defined in 1998), organization...
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(e.g. implementation of new core banking system and missing information support of the KMS), and system (e.g. no changes to the technology since 1999 and no integration of technological innovations of KMS).

The organization is now reacting to upcoming employees' dissatisfaction with the allocation and retrieval of information and is therefore starting to implement a new KMS which is planned to be online at the end of Q2 2012. In order to not solely address the IT the organization also implements routines that ensure a homogeneous allocation of information.

References


