

Guidelines for Deploying a Knowledge Management System

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INTRODUCTION

Despite the current upsurge of the knowledge management discipline (KM) and the benefits that this discipline offers organizations, there are still substantial deficiencies in this field. In this respect, the KM schemes of most organizations are *ad hoc* initiatives, set up to meet a specific internal need. Similarly, many organizations have taken a mistaken view of KM, deploying a software tool, and expecting employees to be motivated more or less by design to share knowledge. In actual fact, however, KM has to be undertaken by means of an all-embracing process through which the knowledge that is in the organization is discovered and used correctly. However, those organizations that are aware of the need to enact such a process to effectively incorporate KM into their business activities come up against what is really the most important and worrying obstacle: there is no commonly accepted approach to guide the deployment of a knowledge management system (KMS) in an organization (Rubenstein-Montano, Liebowitz, Buchwalter, McCaw, Newman, & Rebeck, 2001). This state of affairs is due to the fact that there are a great many proposals for setting up this class of systems; none of which, however, are detailed enough to be directly applicable.

With the aim of helping to overcome these deficiencies, we have developed an approach, based on existing methods, which gives a detailed definition of *what to do* to develop a KMS and *how to do it*. The big advantage of this approach is that the mechanisms—techniques, technologies, and tools—needed to do this are already available. However, if these mechanisms are selected and combined in the wrong way, the project can turn out to be a failure. Therefore, it is necessary to know

how to select and combine them properly. With this aim, our proposal includes a comparative analysis of the best mechanisms for each activity of which it is composed, establishing a series of guidelines for their use. The proposal is designed to help the people responsible for developing a KMS in an organization to make the initiative as big a success as possible.

The new proposal for deploying a KMS in an organization is detailed in the next section of this paper. Finally, the third section sets out the key conclusions.

PROPOSAL

With the aim of determining what phases are needed to develop and deploy a KMS in an organization, we analysed the major proposals that are for this purpose (Beckman, 1997; Daniel et al., 1997; Junnarkar, 1997; Liebowitz & Beckman, 1998; Maté, Paradelo, Pazos, Rodríguez-Patón, & Silva, 2002; Tiwana, 2000; Wiig, de Hoog, & Van der Spek, 1997). This study revealed that there is tacit agreement that such a proposal should have to include at least the phases of knowledge acquisition, knowledge assimilation, and creation of a collaborative environment (Andrade, Ares, García, Rodríguez, & Suárez, 2003a). Having identified these phases, the different mechanisms—techniques, technologies, and tools—which are considered suitable for developing a KMS, need to be classified depending on which phase they focus. Nevertheless, a technique, technology, or tool does not necessarily have to fit into just one phase, but can often cover two or more phases. Therefore, we have followed the procedure of classifying each mechanism within the phase that best fits its purpose. In the following, we address each of these phases in

detail, presenting the different mechanisms classified in each one.

Knowledge Acquisition

This phase involves gathering whatever relevant knowledge there is in the organizational environment.

In this respect, organizational knowledge acquisition has been defined according to two fully inter-related levels of abstraction: the strategic level and the subject area level. The first level aims to gather knowledge giving a broad overview of the state of the organization. Consequently, this analysis outputs a number of organizational functions that need to be worked on. These functions are called *subject areas*, and they are subject to a second level of abstraction. The knowledge acquisition and elicitation techniques have, therefore, been catalogued according to these two levels, and they have been compared according to this same division.

Knowledge Acquisition at the Strategic Level

The leading techniques for achieving the objectives pursued at this level of abstraction are: *SWOT analysis* and *bottlenecks analysis* (Wiig et al., 1997). However, the two techniques were designed for different goals. Indeed, *SWOT analysis* is aimed at gaining an overview of the state of the organization, showing up strengths, weaknesses, opportunities, and threats for the company. *Bottlenecks analysis*, on the other hand, focuses specifically on searching for bottlenecks, overlooking such important aspects as, for example, any strengths and opportunities for improving business functions that are not directly related to the bottlenecks. Therefore, *SWOT analysis* is a technique with a broader scope.

Therefore, we recommend the use of *SWOT analysis* as the key technique for gathering knowledge at the strategic level and acquiring knowledge about the biggest possible ratio of organizational issues, leaving *Bottlenecks analysis* for specific situations in which the organization intends to focus its attention on the possibility of there being bottlenecks.

Accordingly, *SWOT analysis* gathers a lot of organizational knowledge. *Opportunities* and *strengths* can be used to discover business functions about which knowledge should be acquired to capitalize upon them. This will make them candidate *subject areas*. On the

other hand, *weaknesses* and *threats* give a vital clue about the business functions that need to be worked on with a view to change, and they too are therefore candidate *subject areas*.

Additionally, the knowledge gathered from the *SWOT analysis* may shed light upon organizational situations that represent possible bottlenecks. In this case, these situations should be subjected to a *bottlenecks analysis*, with the aim of examining whether they really are bottlenecks.

An important point to be taken into account is that both *SWOT* and *bottlenecks analysis* can be supported by another two supplementary techniques: *group sessions* and *questionnaire-based knowledge surveys (QBKS)* (Wiig, 1995). Group sessions improve activities like knowledge analysis, viewpoints sharing, or decision making. QBKS allows a wide-ranging group of people to find out what opinions there are on a particular subject.

Knowledge Acquisition at the Subject Areas Level

The strategic analysis shows up a series of business functions that need to be worked on. These functions are, therefore, candidate subject areas. However, a thorough analysis and modification of each and every one of these is often prohibitive. Therefore, we propose using the *critical knowledge functions analysis (CKFA)* (Wiig, 1995) to study the situations uncovered by the findings at the strategic level. The input for this technique is the set of functions that are candidate subject areas, and it determines how critical these functions are for the organization. This can be used to determine the most important functions, each of which will be further analysed by means of special-purpose subject areas techniques.

The method used to gather knowledge about a function at the subject areas level depends on the type of knowledge source. In this respect, we have made a distinction between human and non-human sources and analysed the primary mechanisms for gathering the knowledge they possess. These mechanisms are shown in Table 1. Note that techniques applicable to human sources can be further divided into two major groups depending on their purpose:

- **Main Techniques:** These are techniques that elicit extensive and thorough knowledge about a particular subject area from these type of sources.

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