# Agile Knowledge Management

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## INTRODUCTION

This article is based on the assumption that Knowledge Management (KM) is a vital part of any project. Based on this working assumption, the purpose of this article is to introduce the term *Agile Knowledge Management* (AKM) by illustrating how the *Agile Software Development* (ASD) approach is suitable for the introduction of KM processes.

The ASD approach emerged over the past decade in response to the unique problems that characterize software development processes (Highsmith, 2002). In general, ASD emphasizes customer needs, communication among team members, short releases and heavy testing throughout the entire development process. These ideas are implemented quite variedly by the different ASD development methods.

Knowledge Management (KM) and Agile Software Development (ASD) are two organizational processes that face common barriers when introduced and applied. This article suggests that because the field of KM presents a less disciplined approach compared with ASD, it is logical that KM practitioners should learn how ASD has coped with very similar barriers. We further illustrate how it is but natural to emphasize the concept of *Agile Knowledge Management* (AKM) in order to improve KM processes, because ASD already encompasses the organizational and cultural infrastructure needed for KM.

The pairing of KM and ASD is not new; a connection between the two concepts has been acknowledged by various researchers. For related discussions, see, for example, Dove (1999) and Holz, Melnik and Schaaf (2003). This connection, however, is not surprising because both disciplines deal with organizational culture and change management.

In what follows, we further highlight the connection between the two fields. First, we show that the two processes, KM and ASD, face the same barriers when introduced into an organization. We also include some suggestions for coping with such barriers. Second, we highlight the way in which KM is already embedded into ASD processes. Thus, in order to improve KM in such processes, it should be made more explicit. Accordingly, we introduce an *agile* KM manifesto.

## BACKGROUND

In today's competitive global market, companies are required to manage their intellectual resources as well as their financial ones. KM is therefore recognized as a legitimate management practice that helps organizations distribute the right knowledge to the right people at the right time (Van der Spek & Carter, 2003). Furthermore, KM is considered to be the main source of competitive edge for companies when facing new opportunities, time-to-market demands and frequent changes in their technological and business environments. At the same time, however, research reveals that some organizations do not apply systematic KM processes and support, but rather rely mostly on common sense. Barriers, such as competition instead of collaboration, cultural differences, the pressures of daily challenges, lack of communication tools and places to meet, stubbornness of people or lack of discipline within the company, might interfere (Van der Spek & Carter, 2003). In addition, cultural and job security issues prevent managers from investing in KM initiatives (Drucker, 1998).

Similarly, the main barrier when introducing ASD into software organizations is the need to cope with the conceptual change, mainly the organizational cultural change, that ASD brings with it. Following are two illustrations of the conceptual change required when applying the ASD approach.

First, cooperation should replace the knowledge-is-power perception. ASD introduces a management paradigm that encourages collaboration, communication and the *whole team* concept. At the same time, however, the software development culture, which has evolved over the years, sometimes encourages opposite values and manners, as expressed, for example, by the concealing of information and the isolating of people in cubicles. Second, in ASD processes, a change is required also in the customer's conception and involvement, as well as in customer-developers relations. ASD requires intensive and frequent communication with the customer. Clearly, this is a significant difference compared with the common level of interaction with the customer as practiced today in many software organizations.

Studies reveal that the introduction of KM and ASD processes increases productivity, shortens time-to-market and results in higher product quality (see, for example, Bennet & Bennet, 2003; Reifer, 2002). Yet, as mentioned above, it

is but logical that practitioners feel insecure when required to undergo such change. What is needed then in many cases is a realization that the new paradigm, whether it is KM or ASD, in fact constitutes a new and different infrastructure within it concerns can be addressed.

It is in this spirit that we further illustrate the close relationship between the two processes by presenting nine arguments that are often raised when KM and ASD processes are introduced. For each argument, we present one frequently-heard statement for KM and ASD, and suggest an approach for overcoming the said argument. This presentation format reflects both the similarity in the resistance to the two processes, as well as the similar way in which this resistance can be addressed in both cases.

***I. "It is not needed at all"***

KM: "Someone in the organization is already taking care of the KM process."
ASD: "Our organization already has a very well-defined development process that works just fine."
Possible response: "Can you please elaborate on the benefits and weaknesses of your current process?" In many cases, an attempt to answer this question reveals the problems that exist.

***II. "Time does not permit"***

KM: "I must deliver the project on time and I'm behind schedule. I can't devote any time to knowledge sharing." OR: "Do I have to invest any more work in order to manage knowledge?"
ASD: "I must deliver the project on time and I'm behind schedule. I can't devote any time to testing." OR: "How much extra time is needed in order to collect the metrics? Is it worth investing?"
Possible response: "What are the main reasons for the gaps between the project planning and the actual progress?" In many cases, it is found that the reasons given here further highlight the importance of some elements of KM and ASD processes.

***III. "The current tools work very well"***

KM: "We have tools for KM, such as WSS, which hosts many discussion forums."
ASD: "We already have a mechanism for sharing our metrics using an online tool that is accessible to all; why should we sit together in one lab/informative workspace?"
Possible response: "In your opinion, how frequently do people use or open this tool?" This question highlights the spirit of the first principle of the Agile Manifesto (see Table 1); namely, that we should address the people, not the tools. In other words, tools are useless unless they are simple and accessible and their use is integrated naturally into the work process itself.

***IV. "We can't change the status of documentation"***

KM: "We have documents that reflect the project knowledge."
ASD: "How can we develop software without comprehensive documentation? After all, the customer asks for it."
Possible response: "Based on your experience, are the documents always compiled along with the actual projects? Also, can you please estimate how often, if at all, the documentation is read?" In many cases, this question leads practitioners to realize the gap that exists between the perceived image and reality. Specifically, it highlights the fact that the documents produced in many typical processes are not the ones truly required (some do not reflect reality at all; others are never read). Rethinking the role of documentation reveals that documentation should not be skipped, but rather carried out in a way that allows for timely and relevant knowledge and information maintenance.

***V. "I have had very bad experience with all these buzzwords"***

KM: "KM is prosaic, what it is actually?" OR: "Has any business already implemented it? How do you even start a KM project?"
ASD: "There are so many buzzwords in software development. You must convince me that this is not just another one." OR: "It sounds good on paper as a theory. Does it really work?"
Possible response: "You can try to initiate a small scale KM/ASD project and observe its benefits. Also, you can read testimonies that will enable you to move from the abstract to the concrete." In both KM and ASD, experience shows that these processes work well in practice. In the ASD arena, this is manifested by the fact that more and more software houses are starting to work according to the agile software development paradigm[1]; in the case of KM, it is reflected by the increasing numbers of KM initiatives in organizations and the designation of a specific person to manage the organization's KM processes (Van der Spek & Carter, 2003).

***VI. "The current working environment provides the mentioned benefits"***

KM: "If I need information, I just go to the right person and ask him or her."
ASD: "It's impossible to sit together in one lab. It's too noisy. If I need to ask something, I just go to the right person and ask."
Possible response: "Can you describe what happens when