Land Forces Academy Review
Vol. XXIII, No 4(92), 2018

KNOWLEDGE MANAGEMENT CONTRIBUTIONS IN PROJECT MANAGEMENT

Diana Elena RANF
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania
ranf.diana@armyacademy.ro

Ramona HERMAN
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania
herman.ramona@armyacademy.ro

ABSTRACT

The two concepts, knowledge management and project management have been steadily developing in recent years, with the current effort being the creation of a synergic effect from the two. The article demonstrates the need for a structured framework to group and facilitate the reuse of information and the generation of new knowledge in project management. In this context, knowledge management meets these requirements, providing a tool for improving project management practices. The article contains a review of the advantages and benefits that developers can get by adopting and implementing a project management strategy. An important contribution of the article is to develop a way to apply knowledge management in project management. This starts from the idea that a knowledge management cycle consists of four stages, which can also be applied in project management, and the knowledge passing through these stages goes through a filter, improves and generates a new knowledge.

KEYWORDS: management, knowledge, innovation, project management

1. Introduction

According to some studies, there are attempts to implement a management methodology based on the knowledge of different organizations in various fields, to strengthen their position in the market by increasing the reaction speed in relation to the action of certain factors. The difference is through easy access to knowledge by capturing good practices (Ranf, 2018).

Thus, knowledge-based management is an instrument that meets "the need to capture good practices" or a project department responsible for improving management processes, as well as the methods used in the projects (Jennex, 2005).

The competitive and increasingly turbulent market environment requires the improvement of project management methods and practices. Because literature is already abounding in information, books and project management articles, companies need to identify their own way of improving their practice in the field.

Also, in order to maintain their competitive advantage, organizations are still looking for ways to differentiate themselves from their main competitors. One way to get this advantage is to develop a **knowledge-based management strategy**.

DOI: 10.2478/raft-2018-0036

2. Developing a Knowledge-Based Management Implementation Model in Project Management

A knowledge-based management strategy clarifies how the organization generates, exploits, maintain and transfers critical knowledge in its activities. Developing such a strategy is very important for organizations that apply **project management** (Jennex, 2005).

In order to be competitive, in order to achieve business strategies and fulfill the company's purposes, organizations need to acquire both internal and external knowledge from outside the organization. A knowledge management strategy would support organizations to obtain such information. **Lifelong learning** allows organizations to react to changes that occur in the business environment.

A knowledge-based management strategy is adopted by organizations to improve the way they develop, store and use the organization's knowledge. Both tacit and explicit knowledge is important in creating and reusing knowledge. **Organizational memory** forms the **knowledge resources**, which is owned by an organization.

An organization that is in constant change must evolve and learn continually. **Learning is defined** as the acquisition of knowledge or the ability to articulate a conceptual understanding of an experience. Learning is the process of continuous improvement and innovation.

Learning organizations are organizations in which people are open to change, learn to adapt permanently, and knowledge and practices are continually improved through a continuous process of thinking as well as through the exchange of ideas with the external environment.

For an organization to learn, knowledge must be created, shared and reused. The learning process consists of the following stages: acquisition of knowledge, sharing of knowledge and use of knowledge.

Organizational knowledge has been defined as the knowledge of the organization that can be kept through employees, files, physical objects and incorporated into procedures and organizational culture.

Organizations working on projects or that are **organized on projects** are the **environment conducive** to **knowledge management** through the staff involved in project management, its interaction in various projects and project phases, resulting in **tacit and explicit knowledge**.

Explicit knowledge (Caroline de Brun, 2005) is information that once transformed into knowledge can be selected and written in different documents, registers or databases.

Implied knowledge (silent) is the everyone's knowledge, they have a subjective character and incorporate each other's intuition. This type of knowledge is very difficult to share because it is stored within each person. Access to tacit knowledge may be more difficult. In fact, most people are unaware of the knowledge they possess or their value to others (Stoica, 2005).

In a project driven organization, **learning is important** because it helps project managers develop skills in project management, as well as in knowledge management that can be translated into successful projects. Learning in and through projects has become a necessity.

Reusing knowledge can help the organization **avoid mistakes** that have been made in the past. Effective project management is a key element of successful business. However, if the organization's knowledge is not effectively managed over the life of the project, valuable intellectual capital is lost, which causes extra work for lost managers and opportunities.

Figure no. 1 contains an image of how the organization can put knowledge-based management into practice. As shown in the figure, the data refer to different elements, which when processed and modeled are changed into information.

As soon as information integrates into activities, it is changed into knowledge. When knowledge is learned and integrated into individual and organizational processes, the value of organizational and individual knowledge increases (Irani, 2005).

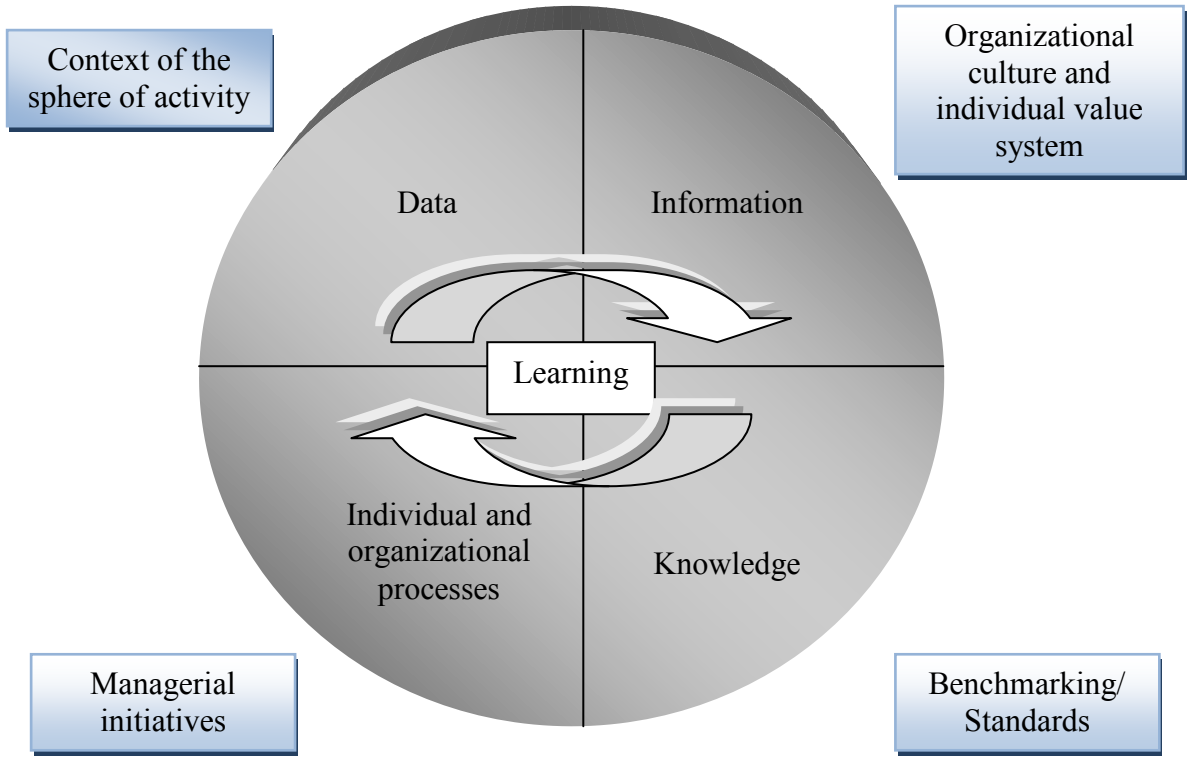

Figure no. 1: A conceptual look at knowledge (after Irani, Zahir, 2005)

To be **useful** to an organization's **knowledge**, it must have a **context.** Organizational culture will have a special role in propagating or restricting information. The way in which knowledge is integrated is linked to everyone's vision. The type of management practiced in the organization will also affect the created and spread of knowledge in the organization.

Box 1 Example of the benefits of applying knowledge management to organizations that develop projects

In order to maintain its competitive edge, a project developer has created a knowledge management strategy, implementing new techniques in daily activities. One of the advantages of this organizational change has been highlighted with the decision to run a project that aims to develop a new product. The project manager is preoccupied with testing the product that his team builds to identify possible problems and errors.

Once the results are identified, the project manager also decides to consult the organization's available databases (the ,,lessons learned") and discovers that a similar product has been tested in another project, resulting in the same errors faced by his team. Stored knowledge helps the manager to quickly identify solutions to address identified problems, ensuring the success of the project.

Analyzing the situation presented in box 1, it can be concluded that the information stored, once taken and reused, is **changed into knowledge**. Once knowledge is acquired, they will contribute to the future projects developed by the organization through a system of good practices that can be accessed by the project teams.

If the **organization actively promotes the procurement, transformation, and dissemination of lessons learned, project teams will be better informed** about different issues. This vision, combined with a culture and a favorable organizational climate, has a synergic effect giving rise to management leadership that can produce effects on how knowledge is shared across the organization.

In order to benefit from these advantages, we need to identify (Figure no. 2) how to apply knowledge management in project management. **The knowledge management process** consists of **four stages**, which can also be applied in project management. Knowledge is identified, captured, shared with partners and stakeholders of the project, applied in the project and combined with other existing knowledge, then from the mistakes and problems encountered, other new knowledge is born, which will be stored for reuse in other projects, which in turn go through the whole knowledge cycle.

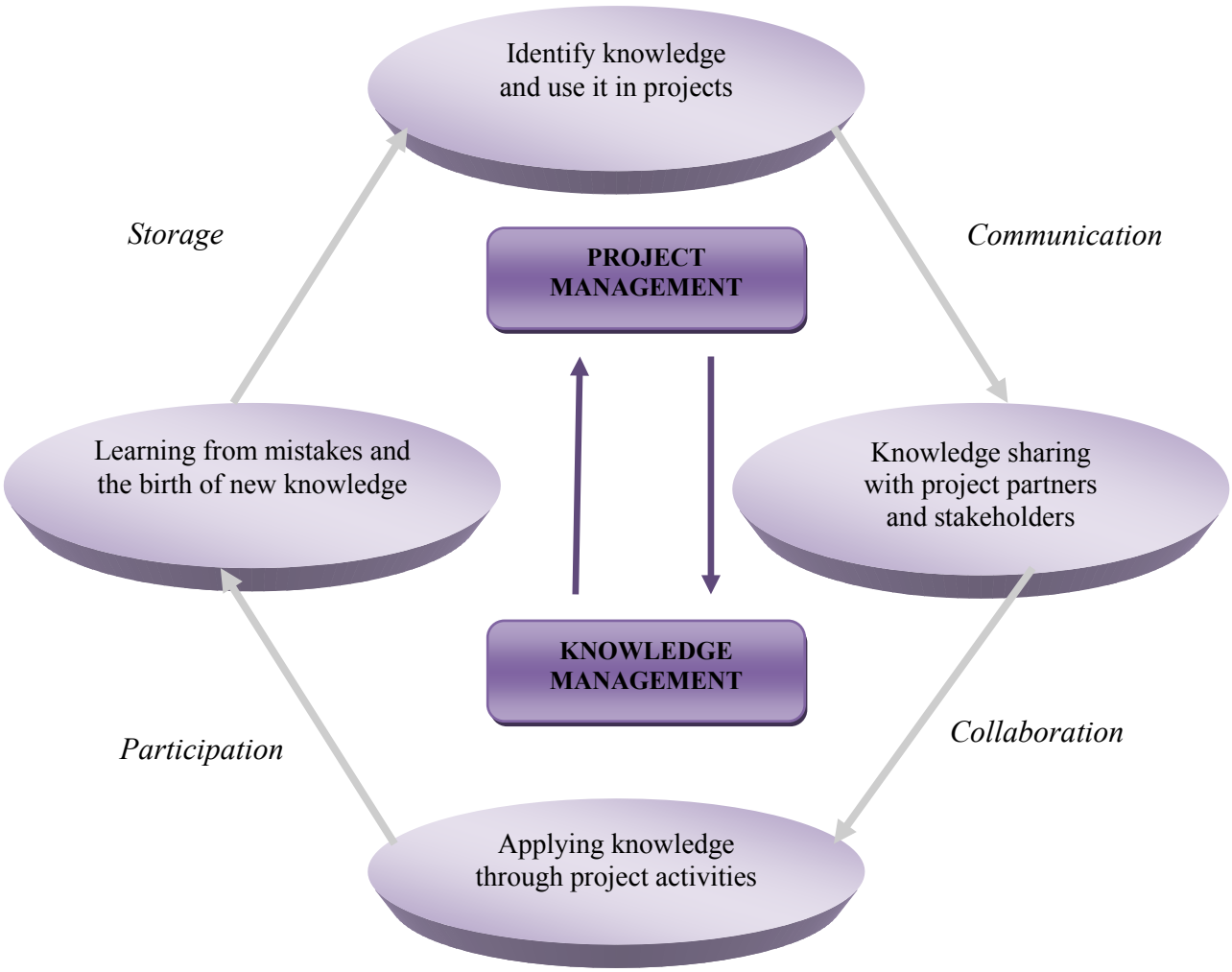

Figure no. 2: The Knowledge Management Cycle in Project Management

New knowledge must be **redistributed** to project managers for reuse in new developed projects. There are **two main ways** to distribute knowledge in a project-based organization (Turner, 2007):

- through project management **procedures**;
- through the project management **community**, namely project developers, beneficiaries, and all stakeholders who, through contact with projects, become knowledge carriers in the field.

But it has been shown that there is a **loss of learning at every step of the process**. T. Kooke-Davies has identified a 25% loss of information at every step, which means that less than a third of the new good ideas that a project-based organization generates will actually be used in new projects. The best ways to overcome this problem are:

- review projects to become mandatory;
- project management office to become responsible for correlating results from reviews;
- using the intranet to store and distribute new ideas;
- the project management community must work effectively.

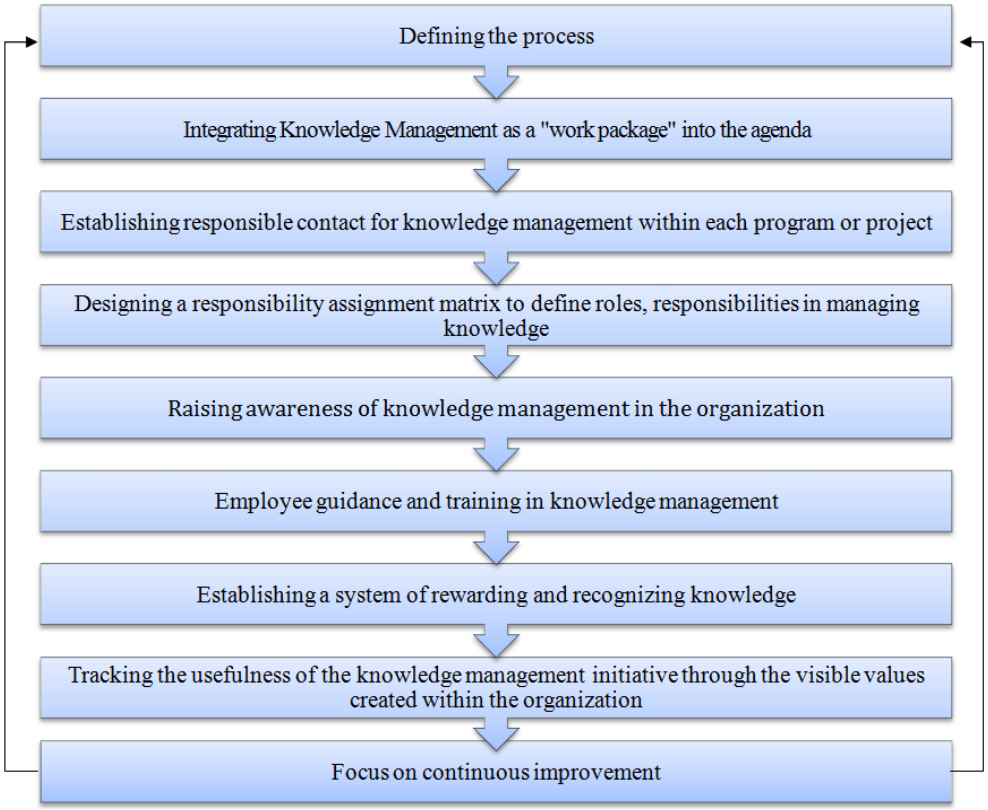

Figure no. 3: Key Points for a Successful Implementation of Knowledge Management in Project Management (Levin, Ginger, 2010)

A study (Sokhanvara, 2014) on how to run the knowledge management process in the management of projects carried out by a research institute has demonstrated that the stages of knowledge creation and capture are the most important, while the transfer of knowledge and its reuse is not as important as the first two processes. Thus, once developed within the organization's preoccupation with knowledge management, emphasis should be placed on the processes of capturing and creating knowledge, and especially on their integration into organizational culture.

Managing knowledge is a process whose success depends on how people can integrate the best knowledge to turn them

into competencies. Successful integration of knowledge leads to successful programs and projects (Levin, 2010). For an easier implementation of the methodology, Ginger Levin identified nine key points for a successful KM implementation in program and project management (Figure no. 3).

3. Conclusions

The daily practice of organizations of any type, size or field of activity denotes certain knowledge gaps: either we are confronted with too little information or too much and we are not able to select the relevant information for the issues we face.

The implementation of a knowledge management model addresses such a problem: it gives us the possibility to select them, the logic of grouping them, and keeping only the useful ones.

A contribution of this article is the design of a model that highlights how the knowledge management cycle works within project management, as well as the benefits of using such a strategy. A limit of this knowledge management concept, which is still at the beginning of the road, is that it does not yet provide a clear methodology to be followed by organizations that want to implement it.

But organizations working on projects or which are organized on projects are the environment conducive to knowledge management through the staff involved in project management, their interaction in various projects and project phases. If the organization actively promotes the capture, analysis, and dissemination of lessons learned, project teams will be better informed about different issues.

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