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Project success analysis framework: A knowledge-based approach in project management

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Abstract

One of the major issues for knowledge management in a project environment is the poor project success analysis and the lack of proper documentation on the results of the previous projects. In this research, we investigate in which way project success analysis, presented as a framework, can improve knowledge management in project environment. An empirical research was conducted in order to define the contribution of project success analysis framework to knowledge management in project environment. The data was gathered from 103 project managers in different industries in Serbia during 2013. Research results have confirmed that project success analysis, presented through the definition of critical success factors, key performance indicators and performance-measuring process has a very positive influence on knowledge acquisition and transfer in project environment. This paper presents an integrated framework for project success analysis as a new knowledge-based approach in project management.
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1. Introduction

An increasing number of organizations are implementing their business operations through projects (Kerzner, 2001). By definition, projects are temporary organizations, limited by a certain scope, and implemented within a certain amount of time (PMI, 2004). Due to an organization's fragmentation into project teams, knowledge management and retention becomes necessary (Disterer, 2002; Gann and Salter, 2000; Hanisch et al., 2009; Kang, 2007). Studies have proven that most employees (85%) working on a project gather new knowledge, both explicitly, as well as implicitly, through experience (Turner et al., 2000). Learning in project environment becomes so important for the organization that even the success of a project is determined according to the following two dimensions: project performance and project learning (Arthur et al., 2001). Continuous learning and development is considered to be the highest level an organization can reach in terms of project management maturity. Without summarizing the lessons learned in this process, an organization can even backslide to a lower level in project management (Williams, 2007). Nevertheless, the general conclusion is that only a small number of project-oriented organizations manage to implement systems for identifying and transferring knowledge from past to future projects (Bou and Sauquet, 2004; Disterer, 2002; Hanisch et al., 2009; Kang, 2007). The same authors stress

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numerous challenges of knowledge management in project environment, such as: the lack of procedures and routines for data gathering, the lack of reports and other documentation on the results of the previous projects, and inconsistent documentation that does not always fit the needs of projects.

Certain authors believe that information regarding a project can also be gathered through analysis and monitoring of project results emphasizing the need for collecting information on project success and project performances in order to establish a knowledge base that would enhance the process of managing future projects (Hanisch et al., 2009; Love et al., 2005; Williams, 2007; Yun et al., 2011). After reviewing literature from the area of project management, we can easily detect the trend of defining project management success, determining the factors and criteria of success (mostly summarized in Ika, 2009), measuring the achieved project performance (Bryde, 2005; Keeble et al., 2003; Kerzner, 2011; Kujala et al., 2009; Pillai et al., 2002; Qureshi et al., 2009; Wasioyo, 2010) and analyzing the maturity of an organization in the process of reporting on a completed project (Von Zedtwitz, 2002; Williams, 2007).

It is for that reason that the authors' initial research question was: can the information relevant for a previous project be gathered in a systematic manner, by analyzing and measuring the achieved results, and can this method of project analysis enhance the acquisition and transfer of knowledge from past projects. In the continuation, this paper focuses on the key challenges of knowledge management in project environment and stresses the importance of some of the key challenges.

2. Literature review

2.1. Project knowledge management — benefits and challenges

Knowledge management in project environment is an insufficiently explored topic in project management. Namely, the studies conducted so far mostly relate to individual cases or industries (Bresnen et al., 2005), specific project types (Fong, 2003) and case studies (Koskinen, 2004). Over the last couple of years, the scientific community published papers referring to the influence of knowledge management on project performances. Kulkarni et al. (2007) developed their own theory about knowledge management model on the hypothesis that a higher quality of knowledge, i.e. content of the available knowledge, has a positive influence on knowledge transfer. Lessons learned from projects can lead to far-reaching changes in an organization's strategic focus (Brady and Davies, 2004). The mix of knowledge and expertise developed within project teams positively influences an organization's long-term success (Ordanini et al., 2008), creating knowledge about the values the project results should generate; organizational change knowledge, i.e. knowledge about "solutions" used, about technology and possible changes that might influence the project or are necessary in order to implement project results; and technical design knowledge relating to a specific area the project is implemented (Reich et al., 2012). The positive influence of knowledge management on project performances was confirmed

in studies by Faraj and Sproull (2000), Kotnour (2000), Lee and Choi (2003), Barber and Warn (2005), and Quigley et al. (2007). The influence of learning processes on project performances is also present in quality management and operational management studies, where authors often rely on tools such as Six Sigma (Arumugam, et al., 2013; Edmondson et al., 2003). One of the latest studies from the field of project management underlines the importance of managing the project-based knowledge in order to create added value for clients (Reich et al., 2012).

Numerous studies have pointed to evident faults in the process of information gathering during a project realization and their synthesis into a form that would enable learning and the transfer of knowledge to other projects and the entire organization. In most cases the challenges of knowledge management in project environment are as follows:

— The lack of routines and other appropriate learning mechanisms, as well as the availability of the previously learned lessons and reports from the previous projects (Hanisch et al., 2009).

— Documenting project operations, i.e. recording their organizational processes, rarely fail to fully reflect the course of procedures and activities, which is why their purposefulness is doubtful (Bou and Sauquet, 2004).

— The lack of efficient and effective forecasts, insufficient communication and exchange of information, inadequate use of the previous experience and lessons learned (Desouza and Evaristo, 2006; Huang and Newell, 2003; Koskinen, 2004).

— The uniqueness of projects and their long life cycle; therefore, a long time interval passes before lessons are retrieved, while projects' temporary nature requires new team meetings for each project (Desouza and Evaristo, 2006).

— Action-and-task orientation of project-intensive organizational structure (i.e. temporary organization), where project team members are not geared for learning. Individuals become more able and experienced; nevertheless, there is often no mechanism or motivation for that knowledge to be shared within the company (Williams, 2007).

— A contradiction between short-term goals of projects and long-term goals of organizational learning, where knowledge management depends on the degree of projectization of the company, i.e. on the level of a firm's project maturity (Bresnen et al., 2004).

Regardless of the mentioned challenges, learning from projects represents a unique opportunity for gathering new knowledge and exchanging experiences between teams in an organization (Sense, 2003, Jovanović et al., 2009). Nevertheless, from the previously stated arguments, we can clearly conclude that there is a serious lack of a method for systematic project knowledge accumulation which prevents organizations to properly transfer the knowledge. Knowledge management in an organization implies both explicit and tacit knowledge, i.e. there are methods for passing on knowledge through people