COMPARATIVE ANALYSIS COMPETENCIES IN TRADITIONAL AND AGILE PROJECT MANAGEMENT APPROACHES

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Abstract: In order for the project to be successfully implemented, each individual involved in the project must possess appropriate competencies and skills. Competencies/skills have a great influence when assembling the project team itself and when deciding on the inclusion of new members in the existing project team. In particular, the competencies and skills of the project manager have an impact on the successful realization of the project's goals. The members of the project team must possess certain competencies/skills in order to successfully cooperate with each other and to successfully implement the tasks assigned to them. The main goal of this research paper is a comparative review and analysis of competencies/skills in traditional and agile project management approaches. Also, the paper highlights the roles, responsibilities and powers of each team member, both in the traditional and in the agile approach.

Key words: agile project management, competencies/skills, traditional project management

1 INTRODUCTION

Every individual involved in the project, be it a project manager, sponsor, member of the project team, must possess knowledge, skills and competences in order to successfully implement the project. Competencies represent an individual's underlying characteristic that is causally related to effective job performance. Skills/competencies have a great impact when assembling a project team and when including new members in an existing project team. Also, the success of project

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implementation largely depends on the competencies and skills of the project manager and other members of the project team. The members of the project team must possess certain competencies/skills in order to successfully cooperate with each other and to successfully implement the tasks assigned to them. New project management approaches require new skills/competencies (Kostić, 2017).

Traditional project management is a linear and sequential approach that is applied in the simplest situations when the project is short, when the goals and requirements of the users/clients are clear, if the initial requirements and goals of the project will not change to a large extent during the project implementation. Traditional projects are quite predictable and uncomplicated, they are implemented in a stable environment and are characterized by a very low rate of change in requirements (Wysocki, 2009). Also, these projects do not require a large involvement of end users in the implementation of the project (Fernandez, Fernandez, 2008).

Agile management as a new project management approach was developed to overcome the basic shortcomings of traditional project management such as: rigidity, non-responsiveness to changes and detailed planning. An agile project management approach is adequate in complex and uncertain situations when changes are frequent and unpredictable and when it is not possible to carry out precise assessments, early predictions and design solutions at the beginning. Unlike traditional projects, in agile projects the connection between the organization and the client is very strong and clients often change their requirements and expectations (in the sense of requiring additional functionalities) during the implementation of the project (Hass, 2007; Wysocki, 2009).

Both approaches to project management require the possession of certain skills/competencies. The purpose of the paper is to present key competencies which have particular importance in achieving project success both in the traditional and in the agile approach to project management. The paper provides a comparative overview of key competencies/skills in both approaches to project management.

2 SKILLS/COMPETENCIES IN TRADITIONAL PROJECT MANAGEMENT APPROACH

Traditional project management is a linear and sequential approach that is applied in the simplest situations when the project is short, when the goals and requirements of the users/clients are clear, if the initial requirements and goals of the project will not change to a large extent during the project implementation and when it is necessary to results are achieved within the defined time, scope and budget. According to the traditional understanding, any project that was completed on time, within the budget, with a high quality result was considered successful (Müller, Turner, 2007).

In the traditional approach, the project manager has a key role. He manages the implementation of the project in order to complete the project in the most efficient way. The basic and most important task of the project manager is to ensure that the project is realized in accordance with the available resources (in the planned time and with the planned costs). The project manager is simultaneously a leader, entrepreneur, resource allocator, integrator, negotiator (Cockburn, Highsmith, 2001; Colomo-Palacios et al., 2013). He leads the project team, coordinates the activities of all members of the project team and directs their activities in order to successfully implement the project (Hoda et al., 2013).

Edum-Fotve McCaffer (2000) believes that the most important skills and competencies of a project manager are: technical skills, time management,

presentation and written expression skills, decision-making ability, negotiation skills, task delegation skills, teamwork, computer skills, meeting management, stress management and problem solving skills. Pant and Baroudi (2007) list the following as the most important skills and competencies: communication skills, interpersonal skills, technical competencies, cognitive abilities, flexibility, ability to make decisions, ability to solve problems, reliability. Tohidi and Jabbari (2012) believe that the most important skills of a project manager are the motivation of team members, human resource management, leadership, correct attitude towards the environment, correct attitude towards co-workers. According to Madter et al. (2012), the most important skills of a project manager are: ability to work in a team, ability to manage people, self-confidence, problem-solving orientation, communication ability, interpersonal skills, conflict management and change management. Kerzner points out leadership abilities, ambition, creativity, flexibility and adaptability, personal commitment, vision, creating trust, ability to persuade, ability to make decisions, ability to identify problems, ability to organize work to subordinates as the main competences. El-Sabaa (2001) lists as the most important skills of project manager: human skill (mobilizing, communication, delegating authority, political sensitivity, high self-esteem, and enthusiasm), conceptual and organizational skill (planning, organizing, strong goal orientation, ability to see the project as a whole, ability to visualize the relationship of the project to the industry and the community, and strong problem orientation), technical skill (special knowledge in use of tools and techniques; project knowledge; understanding methods, processes, and procedures; technology required; and skills in use of computer).

The project sponsor is a person from top management or an organization that is responsible for the smooth implementation of the project. It ensures the financing of the project and provides the necessary material resources and protects the project from adverse influences and problems. He is the supervisor of the project manager. The sponsor helps the members of the project team in achieving the goals, but is not in charge of solving problems on the project. It points out project limitations, provides necessary advice and warns of any changes should they occur. Based on the analysis of the tasks performed by the sponsors, it can be concluded that they must possess the following skills: communication skills, flexibility, ability to negotiate, ability to manage changes, etc (Tohidi, Jabbari, 2012).

The members of the project team are directly involved in the implementation of the project. They must possess a full range of skills and competencies in order to effectively carry out the tasks assigned to them. A review of literature sources found that the most important skills and competencies that project team members must possess are: technical skills and competencies, communication skills, collaboration skills with other members of the project team, the ability to negotiate with other members of the project team, orientation to the efficient execution of tasks, the ability to continuous learning and improvement, etc (Chipulu et al., 2012). Also, members of the project team must be characterized by sociability, politeness, patience, compassion towards other members of the project team, the ability to communicate assertively and the ability to self-control (Colomo-Palacios et al., 2013). The most important personal qualities that project team members should possess are: professionalism, reliability, perseverance and consistency, ambition, flexibility, thoroughness in work and attention to details. Project team members must have good communication skills in order to maintain a harmonious relationship within the team (Tohidi, Jabbari, 2012).

3   SKILLS/COMPETENCIES IN AGILE PROJECT MANAGEMENT APPROACH

Agile approach to project management involves a permanent and active role of all actors involved in the implementation of the project (client, development team, stakeholders etc.). All actors involved in the implementation of the project must continuously communicate and exchange information in order to successfully implement the project. This approach focuses in particular on empowering and encouraging self-organized multi-functional teams to give their maximum contribution during project implementation (Augustine, 2005; Denning, 2015; Ismail, Mansor, 2018).

Unlike the traditional project manager, agile manager is less implemented by control and monitoring of the members of the development team. People orientation and focus on the overall picture of the project and its connection with the environment are the most essential skills of agile project managers. The Agile project manager focuses especially on the project team and takes over the role of mentors facilitator and intermediaries. Effective project managers should be good communicators. He provides support to team members and encourages cooperation and interaction within the team. It focuses especially on promoting teamwork and harmonious relationship between project team members. He leads, motivates and directs members of the project team to successfully implement the project. Agile project manager provides assistance to team members to make their tasks as efficiently and achieve the best possible effectiveness. It is more oriented to people and interactions between them, but on the plan. Also, agile project manager must possess the ability to adapt to changes, the ability to handle adverse, tiring and stressful issues and situations, must be comfortable and open with new ideas and approaches (Liikamaa, 2015).

Based on the analysis of scientific research papers, the most important skills and competencies of agile project manager are: organizational skills, orientation to results and continuous improvement, organization of meetings, communication skills, orientation to problems that may occur, analytical thinking and reasoning, critical thinking, knowledge and understanding of the organization environment (supplier, customers), the skill of flexible analysis of the situation, the observation of emergency situations, understanding of uncertain, complex and abstract situations, management of changes and effective problem solving (Banerjee, 2016; Sutling, 2014) (Table 1.). The most importatnt personal qualities of agile project managers are: leadership capabilities, emotional intelligence, professionalism, empathy and understanding, innovation, confidence, ability, efficient decision-making, harism and positive attitude, self-consciousness, flexibility, tacticality, reliability, ethical behavior (Sutling, 2014).

Two new roles appear in the agile approach to project management are Scrum Master and Product Owner. The tasks and roles of Product Owner and Scrum Masters are complementary because Product Owner is in charge of defining what needs to be done, and Scrum Master is in charge of finding the way it can be done (Schwaber, Sutherland, 2012). The Product Owner represents the interests of the client and its most important task is to manage the expectations and requirements of customers/clients (Fisher, 2011). Also, Product Owner is responsible for achieving results.

The Scrum Master is a mediator between the Product Owner and members of the development team. On the one hand, he helps the development team to overcome difficulties and on the other hand, it provides recommendations and suggestions to the product owner to bring the product's most efficient way to meet customer requirements (Deemer et al., 2012). With all that in mind, it can be concluded that the powers of Scrum Master are limited in relation to the authority of the traditional project manager (Adkins, 2015). He has no authority to control the members of the project team during

the performing of tasks. Scrum Master performs facilitation and coaching team (Thomas, Mengel, 2008). In order to successfully direct and lead the project team Scrum Master must possess good negotiating and communication skills (Cheng et al., 2005). Also, Scrum Master must be honest and correct to associates and must not have hidden intentions (Rubin, 2012), must possess a harism and be a positive and extrovert person.

The review of the literature can be concluded that the most important skills and competencies which must members of the agile project teams own are: communication skills, taking up in performing tasks, orientation on rules, orientation to problems, critical and abstract thinking, sociability, empathy, politeness, patience, ability of acertive communication and the ability of self-control (Rubin, 2012). Also, members of the project team must have the ability of self-development and ability to contain learning and improvement (Clarke, 2010). The most significant personal qualities that must have members of the project team are: professionalism, innovation, creativity, perseverance, consistency, enthusiasm, proactgiveness, reliability, flexibility, honesty etc. (Table 1.).

4 COMPARATIVE REVIEW AND ANALYSIS COMPETENCIES IN TRADITIONAL AND AGILE PROJECT MANAGEMENT

Table 1. provides a comparative overview of the most important skills/competencies in the traditional and agile approach to project management. The table represents the systematization of skills/competencies from twenty scientific research papers in this field.

Table 1. *Comparative overview of skills/competencies in traditional and agile approaches to project management*

Skills/ competencies	A traditional approach	An agile approach	Skills/ competencies	A traditional approach	An agile approach
personal characteristics			coordination skills of team members		✓
leadership skills		✓	managing group dynamics		✓
emotional intelligence		✓	motivation of team members		✓
innovation and creativity		✓	stress management		✓
perseverance and consistency	✓	✓	conflict management		✓
enthusiasm	✓	✓	teaching/mentoring skills		✓
ability to make decisions	✓	✓	**task-oriented skills/competencies**		
proactiveness		✓	focusing on tasks	✓	
flexibility		✓	taking the initiative in the execution of tasks		✓
communication skills	✓	✓	ability to delegate tasks	✓	
organizational/managerial skills/competencies			orientation to problems that may arise		✓
managing teams		✓	rule orientation	✓	
orientation to results	✓	✓	critical thinking		✓
negotiation skills with co-workers		✓	the ability to think logically and reason		✓
organization of meetings		✓	**skills related to self-development and**		

Skills/ competencies	A traditional approach	An agile approach	Skills/ competencies	A traditional approach	An agile approach
			development of associates		
analysis of the organizational structure	✓		*the ability of self-development*		✓
knowledge of organizational culture		✓	*self-development of competencies among associates*		✓
technical project management skills/competencies			*ability for continuous learning and improvement*		✓
understanding the goals and requirements of the project	✓		*performance evaluation*		✓
technical expertise	✓		**contextual skills/ competencies**		
specialized knowledge related to the application of project management tools and techniques	✓		*knowledge of the process*	✓	
knowledge of standards	✓		*knowledge and understanding of the organization's environment (suppliers, customers)*		✓
human resource management skills	✓		*customer/ stakeholder orientation*		✓
cost and financial management on the project	✓		*ability to negotiate with stakeholders*		✓
management of material resources	✓		*marketing and sales skills*	✓	
quality management	✓		**skills that enable system stabilization during crisis**		
project risk management	✓		*the ability to proactively analyze problems*		✓
documentation management	✓		*crisis situation management*		✓
time management	✓		*understand complex situation*		✓
people-oriented skills/competencies			*change management*		✓
analytical thinking		✓			

Particularly important skills in the traditional project management approach are: focus on the technical aspects of the project, rule orientation, understanding the goals and requirements of the project, technical expertise and possession of specialized knowledge related to the application of project management tools and techniques, delegation of tasks to associates. In contrast to traditional project management, in agile project management the most important skills/competencies that the project manager and other members of the project team must possess are: knowledge and understanding of the organization's environment, leadership skills, ability to think critically, the ability of self-development, ability to resolve conflicts, inclination towards teamwork. Also, openness, creativity, flexibility, enthusiasm, emotional intelligence etc are very important.

5   CONCLUSION

In order for contemporary organizations to ensure their survival in a turbulent environment, it is necessary to undertake strategic changes and overcome all the challenges they face. Organizations achieve these goals through the implementation of projects. The successful implementation of projects is largely determined by the skills/competencies of every individual involved in the project, be it a project manager or member of the project team.

In this paper literature review and analysis of key competencies is given. The table presents a systematic literature review of main competencies/skills that project managers and other members of the project team involved in project implementation must possess. These skills/competencies are taken into account when assembling the project team and when deciding whether to include new members in the existing project team.

By analyzing the table, it can be concluded that certain skills/competencies are of particular importance in the traditional and some in the agile approach to project management. Thus, skills such as focus on the technical aspects of the project, rule orientation, understanding the goals and requirements of the project, technical expertise and possession of specialized knowledge related to the application of project management tools and techniques, delegation of tasks to associates are characteristic of traditional project management and skills/competencies such as knowledge and understanding of the organization's environment, leadership skills, ability to think critically, the ability of self-development, ability to resolve conflicts, inclination towards teamwork, the ability to think logically and reason, openness, creativity, flexibility, enthusiasm, emotional intelligence etc. agile project manager and other members of the project team must possess an agile approach to project management. Some skills/competencies (such as orientation to results, ability to make decisions and communication skills etc.) are represented in both project management approaches.

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