

Combining Agile and Traditional Project Management as a Better Approach to Project Implementation

Ivana Marinovic Matovic

PhD, Glenfield, Belgrade, Serbia, ivana.m.matovic@gmail.com

ABSTRACT: The project management concept has changed significantly since its initial emergence, and is still evolving. With constant process of changes in the characteristics of projects, standardization, and software and application development, new project management approaches have also developed. Combining an agile and traditional methodology became the best way of management for many projects. PMI² methodology has significantly contributed to this, as example of project management best practice. The paper deals with the analysis of success in project management based on the application of different project methodologies.

KEYWORDS: Project management, traditional methodology, agile methodology, PMI² methodology

Introduction

Successful project implementation in an environment where technology is constantly advancing, and where the life cycle of products and services is constantly decreasing, is an increasing challenge. The projects that need to be realized are less and less clearly defined, and the realization of the project and the final result must be adjusted constantly, using opportunities and reducing possible threats (Hilson 2002). Accordingly, project management is becoming increasingly complex and increasingly challenging (San Cristobal et al. 2019).

With changes in the characteristics of projects, management approaches have also developed. Traditional approaches, although widely used in the beginning, are not always the best solution. The development of information technologies and the rapid development of software have led to the emergence of agile approaches, but they are not suitable for every project either. Many projects by their nature require different management approaches throughout the project life cycle. Therefore, a combination of traditional and agile management approach, agile and non-agile teams, can be a better solution for more effective and efficient project management.

Importance and types of project management

The project management methodology must be in accordance with the project (Ungureanu & Ungureanu 2014). If this is not the case, then there is a high probability that the project will fail (Mentis 2015). At the beginning of the development of project management concept, it was considered that one methodology was adequate for all projects (Seymour & Hussein 2014). Further developing of the project management is necessary, needed to be done through theoretical and empirical research (Seymour & Hussein 2014).

Project types, and accordingly the appropriate project management methodology, are based on two project characteristics: objectives and solutions (Chin et al. 2012). In relation to the defined characteristics, each type of project corresponds to a certain project management methodology (Wysocki 2009):

- Traditional Project Management (TPM)
- Agile project management (APM)

- Extreme Project Management (xPM)
- Emertxe project management (MPx)

If there are clear objectives and clear way of reaching them, then traditional project management is the best methodology. But since there are different projects, with unclear objectives, or unclear ways of reaching them, each project requires different approach (Burgan & Burgan 2014). If objectives are clear, but not the way to reach them, then agile methodology is applied. Today, even 71% of organizations use agile methodology, for all or some of their projects (Project Management Institute 2017). The success of agile methodology is based on its advantages when it comes to projects where it is not known how to achieve the set goals. Extreme project management methodology is applied under conditions of rapid change and uncertainty (DeCarlo 2004). Emertxe project management methodology is an approach that is applied to projects with known ways to achieve objectives, but unknown project objectives (Toljaga-Nikolic et al. 2017).

Combining agile and traditional project management

Combining an agile and traditional methodology is a more adequate way of management for many projects (Linke 2019). Combining can be organized so that the first part of the project is realized by an agile approach, while in the second part a traditional approach is used (Shankarmani et al. 2012). An example of such a combination can be found in software development projects (Yang et al. 2016) where the first part of project is development, where the agile approach is used as a better solution, while the second part of the project provides training for people to use software, and can be planned and implemented by traditional project management methodology. In case it is possible to plan and monitor the project implementation using the traditional methodology, but for the implementation of activities it is necessary to use an agile approach, it is possible to use the simultaneous application of agile and traditional project management methodology (Yang et al. 2016). Sometimes most of the project can be managed using a traditional project management methodology, while only one part of the project needs to be implemented with an agile approach. In some projects, agile methodology is for the most part the best approach, however, part of the project, which e.g. is given to subcontractors, it is best to implement a traditional methodology because there is no uncertainty regarding the planning and implementation of their activities.

The need to combine an agile and traditional approach to project management is already recognized in certain methodologies. The methodology that is particularly interesting for analysis is the methodology for project management of the European Commission - PM² (European Commission 2018). The goal of the methodology is to help project managers and organizations to manage projects more successfully (Kourounakis 2017). During the creation of the methodology, special attention was paid to the environment and needs of the institutions of European Union, i.e. the specifics of projects that are implemented under their jurisdiction (Kourounakis 2017).

PM² contains elements of a wide range of best practices in project management. It is based on IPMA-ICB, PMBOK, Prince2, CMMI and the experiences of EU institutions (European Commission, 2018). It was first introduced in 2008, and the pilot implementation was in 2009 (European Commission 2018). The introduction of the agile approach started in 2014 (Agile@EC), and the first certification in EU started in 2016 (Pantouvakis 2017).

The PM² methodology provides (European Commission 2018, 1):

- a project governance structure
- process guidelines
- artefact templates
- guidelines for using artefacts
- a set of effective mindsets

The agile approach in the PM² methodology is incorporated in all parts of the original traditional project management framework (management, life cycle, processes, artifacts) thus creating a basis for better project management and organizational agility (European Commission, 2018). The agile project team is incorporated in organizational model of project management in accordance with the PM² methodology, in addition to the classically organized project team (Szreder et al. 2019).

In a narrow agile project team, the role of team coordinator is to facilitate and coach the team (Shastri et al. 2017). He should create and maintain conditions that will enable the team to focus on achieving specific goals. The product owner should represent the interests of stakeholders (client and end users) in order to better identify and set work priorities (Shastri et al. 2017). The owner of the architecture is responsible for the creation and development of solutions and takes care of past and future activities related to the outcome of the project (Shastri et al. 2017). Members of the agile project team are in charge of developing solutions in accordance with the identified needs of stakeholders (Shastri et al. 2017). The team includes people with different knowledge and skills, and therefore it is necessary to have the ability to work with people of other specialties.

Projects implemented using the PM² methodology contain five process groups (defined with the development of a traditional approach to project management), regardless of the fact that the project is implemented using a combination of traditional and agile methodology (Boehm & Turner 2005). The application of an agile methodology implies that there is a greater overlap between process groups, i.e. a less pronounced sequential character typical of the traditional project management methodology (Abrahamsson et al. 2002).

When combining the traditional and agile project management methodology, the iteration of the agile methodology is the time period for which the narrow agile project team needs to deliver a specific project result that is functional enough to be used (Gustavsson 2016). Artifacts provide support for the application of the methodology and are designed to record and document information in terms of management methodology, specific activities, key events, problems and progress reporting. Artifacts are grouped into three categories: agile artifacts, coordination and reporting artifacts, and management artifacts (Wagenaar et al. 2015).

Conclusions

We are witnesses that the practice of project management has changed significantly since the initial emergence of project management concept. Early approaches to project management were based on pre-defined goals, previously defined activities, known steps in implementation, i.e. project management where the environment and method of implementation did not change significantly during project implementation. In the meantime, different approaches have been developed in accordance with the types of projects, but also in accordance with changes in business and environment. Today's working and business environment require that we define project management flexibly and adapted to dynamic internal and external changes.

Today, we increasingly have an overview of projects through combined life cycles that define the implementation process much more realistically and enable a better approach to project implementation. Combined life cycles involve creating a mix of multiple project management methodologies, i.e. combining methodologies in accordance with the project characteristics and changes during the life cycle. The European Commission has recognized the need to combine a traditional and agile approach and has developed a PM² methodology to provide organizations and project managers with a tool for more successful project implementation. This is just one of the methodologies that contain a combination of several management approaches, and in the coming period it is expected that the number of hybrid methodologies will increase with the development of project management concept.

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