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DOI <https://doi.org/10.26661/2414-0287-2019-3-43-25>**MODERN PROJECTS MANAGEMENT METHODS: THEIR ADVANTAGES AND DISADVANTAGES****Severina S.V.**

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Scrum, Agile, Lean, Kanban, traditional management method, project management methods.

The article deals with modern project management methods. The article describes a traditional approach to project management, as well as flexible project management techniques among which are “Scrum,” “Agile,” “Lean” and “Kanban.” The scheme of managerial decision making is presented for each of the following approaches. The implementation of the project in each of the approaches occurs in stages. A schematic representation of this process allows you to evaluate the feasibility of project implementation according to the industry and criteria of your project (resources, duration, and correctness of execution of the processes or all of these parameters). The traditional approach to project management is the most obvious method that enhances the level of project management. It involves dividing it into stages with sequential implementation. Traditional management involves the following stages: project initiation, planning, development, implementation and testing, monitoring and project completion. Now, projects are becoming more complex, customer requests are changing at an increasing rate, and responsiveness to change is more important than adhering to a plan. It is in these circumstances that the principles of project management are not justified. Flexible approaches are needed that allow the team to perceive constant change, not as a problem, but as an opportunity to improve the product and improve its performance. In these circumstances, it is justified to use “Scrum,” “Agile,” “Lean” and “Kanban” approaches. There are concrete features of their implementation and corresponding stages of implementation. There are certain factors that influence the choice of a method. There are no shortcomings in project management methods, and there are no systems that are ideally suited to any manager and team member. The advantages and disadvantages of flexible and traditional project management methods have been summarized. The conclusion that Ukrainian companies do not operate under a single project management system has been made.

СУЧАСНІ МЕТОДИ УПРАВЛІННЯ ПРОЕКТАМИ: ЇХ ПЕРЕВАГИ ТА НЕДОЛІКИ**Северина С.В.**

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Ключевые слова:

Scrum, Agile, Lean, Kanban, традиційний метод управління, методи управління проектами.

Розглянуто сучасні методи управління проектами. Подано характеристику традиційного підходу до управління проектами, а також гнучкі методи управління проектами, до яких відносяться Scrum, Agile, Lean і Kanban. Наведено схему прийняття управлінських рішень за кожним із цих підходів. Реалізація проекту за кожним з підходів відбувається поетапно. Схематичне зображення цього процесу дозволяє оцінити можливість реалізації проекту, використовуючи відповідний інструментарій, відповідно до галузі та критеріїв вашого проекту (ресурси, тривалість, правильність виконання процесів або весь комплекс цих параметрів). Традиційний підхід до управління проектами є найбільш очевидним методом, який дозволяє підвищити рівень управління проектами. Він передбачає поділ його на стадії з послідовним виконанням. Традиційний менеджмент передбачає проходження таких етапів: ініціація, планування, розробка, реалізація й тестування, моніторинг і завершення проекту. На сучасному етапі проекти стають все складнішими, запити клієнтів змінюються з наростаючою швидкістю, а реакція на зміни стає важливішою, ніж дотримання плану. Саме в цих умовах принципи проектного менеджменту не виправдовують себе. Потрібні гнучкі підходи, які дозволяють команді сприймати постійні зміни не як проблеми, а як можливості для удосконалення продукту та підвищення його продуктивності. У цих умовах доцільно застосовувати Scrum, Agile, Lean і Kanban. Визначено особливості їх запровадження, етапи реалізації. Визначено фактори, які впливають на вибір того чи іншого методу. Методів управління проектами без недоліків не існує, як і не існує систем, які б ідеально підходили будь-якому керівнику і членам його колективу. Узагальнено переваги та недоліки гнучких та традиційного методів до управління проектами. Зроблено висновок, що українські компанії не працюють за єдиною системою управління проектами.

Statement of the problem

Any business activity that aims to produce a unique product is a project that involves a number of specific steps and procedures. The project is a long-term process, and an implementation of these procedures and effectiveness of a project mainly depends on the chosen method of management, compliance with existing standards, risks and crisis situations and availability or scarcity of resources. This applies to all spheres of management, economics and businesses, enterprises and organizations in different forms of ownership and orientation.

Analysis of recent studies and publications

The problems with defining methods, techniques and approaches to project management have received considerable attention in the works of many scholars, both domestically and abroad. First of all, basic research and applied development should be highlighted. In their work [4], Chukhdib V.E. and Veduta L.L. pay particular attention to the features of implementation of traditional and flexible project management methods in the activity of an enterprise, but insufficient attention has been given precisely to the stages of project implementation and the sequence of its completion. Tarasenko S.I. [2] focuses on management decisions and implementation of appropriate management methods, depending on the specifics of a project. Project management process itself has not been sufficiently studied.

Bogashova N.V. [9] considers existing techniques for effective project management. The most famous of which are Project Management Body of Knowledge and PProjects IN Controlled Environments.

Objectives of the article

The purpose of this article is the investigation of project management methods, specifics of their application, as well as the advantages and disadvantages of their application in practice.

The main material of the research

The management of any business entity through projects is being implemented in many countries around the

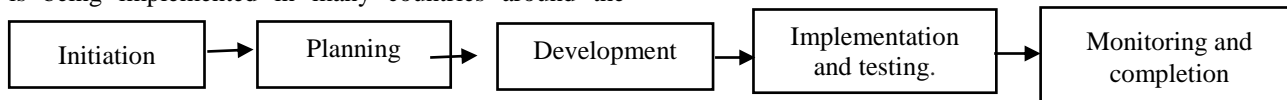


Fig. 1. Schematic representation of managerial decision-making in the traditional approach to project management

The approach will be appropriate for those tasks where there is a clear step-by-step process of implementation. Traditional management implies implementation within a certain timeframe, which is determined at the planning stage.

Calendar-network scheduling tools are used to implement projects within the traditional approach. The most common tool for the network scheduling is the Gantt chart. There are many tools for distributing it: the simplest Excel and Smartsheet spreadsheets, as well as professional software packages such as Microsoft Project and Primavera.

Classic management techniques, mainly aimed at reducing the risks of the contractor, associated with poor performance of the client, became widespread 10 years

ago. This approach has already proven effective in the management decision-making process.

Project management is an activity aimed at realizing a project with the highest possible efficiency, given constraints of time, costs (and resources), as well as quality of the final results of the project [1].

In order to execute the project properly, according to the planned budget and requirements of the customer, a set of rules, principles, methods and tools are used to manage the project throughout all phases and stages of its life cycle.

Project management methods allow you to:

- define the goals of a project and justify them;
- identify the structure of the project;
- determine the required volumes and sources of funding;
- select contractors, in particular, through tenders and competitions;
- prepare and conclude contracts;
- determine the timing of the project; schedule its implementation, quantify the necessary resources;
- calculate project estimate and budget, plan accounting for risks;
- ensure control over the progress of the project implementation [2].

In general, all project management methods can be divided into two approaches: traditional (cascading, waterfall); flexible (adaptive) methods. They are significantly different from each other. They differ in scope, level of detail, self-sufficiency and formalization.

The most obvious method to improve project management is to divide it into sequential implementation phases. Traditional project management methods are based on this approach: it is impossible to move to the next stage until the previous one is completed (Fig. 1).

ago. However, they are now being superseded by flexible project management techniques [3].

Today in Ukraine there is a number of prerequisites for dissemination of project management methods: change of property relations, formation of the market of investment projects, development of information technologies, change of management ideology [2].

Another popular method is "Agile." Not all projects can be structured in such a way that they can be applied to the classic project approach. In this case, "Agile," a family of flexible, iterative-incremental methods, for project and product management will be appropriate. The project is not subdivided into successive phases, but into subprojects, which are then combined into the finished product [4].

In other words, not the whole project is taken into account: planning, development, verification and other stages are allocated to individual subprojects. While

working on the next subproject, you can change anything without significant investment and impact on other components of the project (Fig. 2).

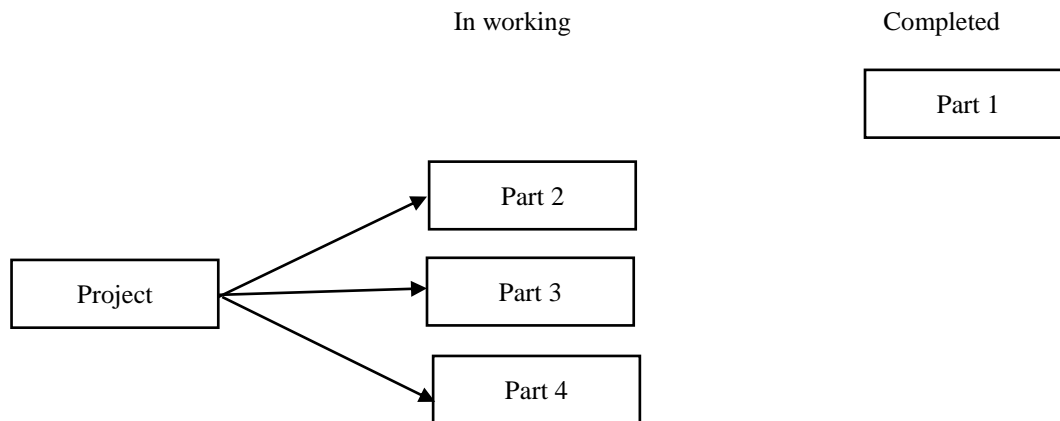


Fig. 2. Schematic representation of management decision-making with Agile project management method

“Agile” is used in cases where there is innovation or novelty, since the degree of uncertainty in such projects is quite large, and more complete information about the product appears during the implementation process.

“Scrum” uses “Agile” principles and it is a good blend of classic project management techniques and management flexibility. The project is divided into three stages. Each of these can be used by the customer to identify values that are called “product backlog.”

The customer chooses priorities for each part. The highest priority parts are selected for the so-called sprint (“Scrum” steps, each step takes 2-4 weeks). After the

sprint ends, the customer can get “increments” – important elements that can already be used in the work.

Then the team starts the next sprint. Its duration is determined in the beginning and depends on the particularities of the project and the composition of the team [5] (Fig. 3).

“Scrum” should be used when not every project participant is appropriately qualified in the area in which the project is being implemented – the ongoing relationship between participants compensates for the lack of training or inexperience of employees through mutual assistance.

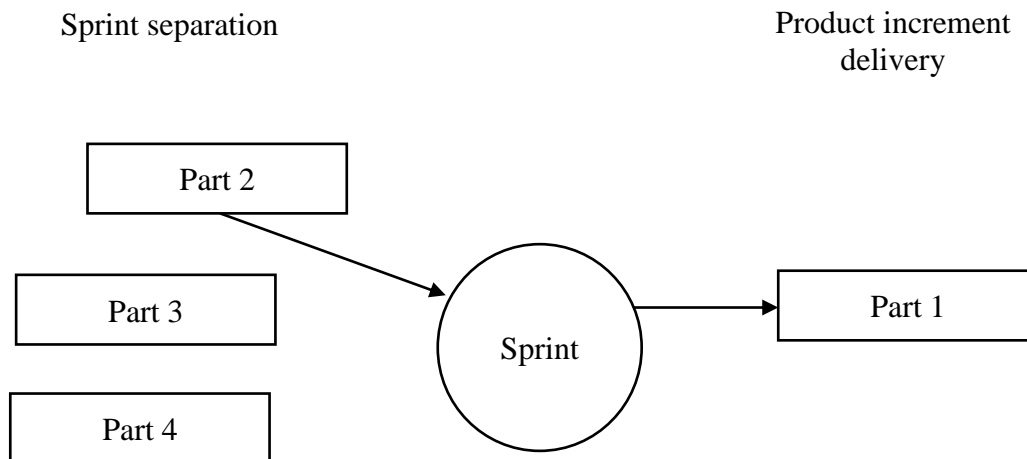


Fig. 3. Schematic representation of management decision-making with Scrum project management method

When you don’t have a specific plan, using the “Scrum” method, small sprints – it allows you to promote continuous product development and refinement with fast feedback. The end product may be quite different from the one planned at the beginning, but it will meet the expectations of the users. “Lean” also uses the “Agile” concept, but complements it with the notion such as the

“flow of operations,” which allows all iterations to be performed equally effectively.

In “Lean,” the project is divided into iterations that are performed independently. By analogy with classical project management, it is possible to distinguish the stages of planning, design, production, testing and delivery (Fig. 4).

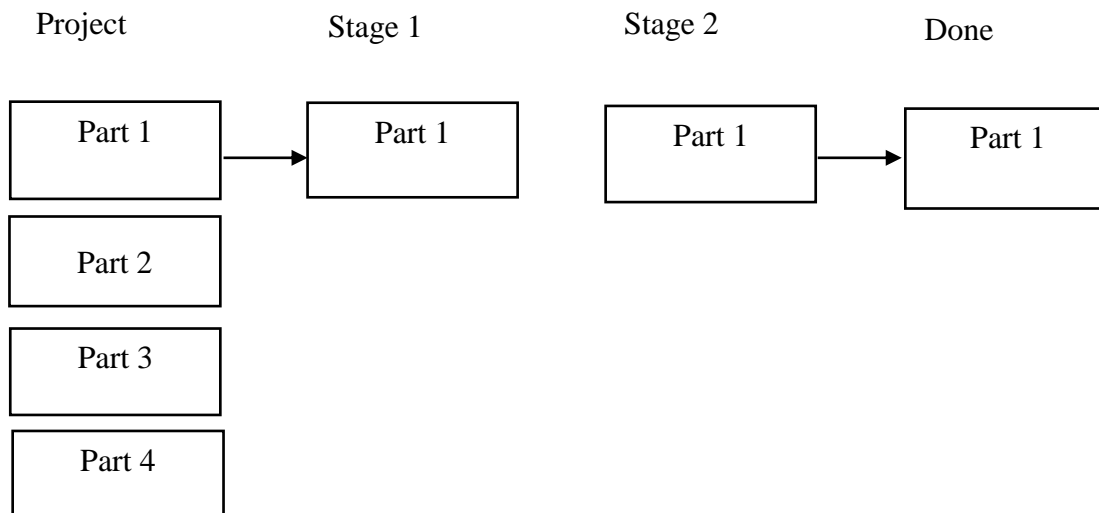


Fig. 4. Schematic representation of management decision-making with Lean project management method

Unlike the traditional approach, this system allows carrying out tasks in parallel at different stages, which will in turn lead to faster and more flexible completion [6].

The “Kanban” method is less rigorous than “Scrum,” because it does not limit sprints, there are no rules except

for the product owner, allowing a team member to lead several projects at once.

In “Kanban” you may not complete the tasks in stages if it involves changing the priority of the stage, and there are more important tasks (Fig. 5).

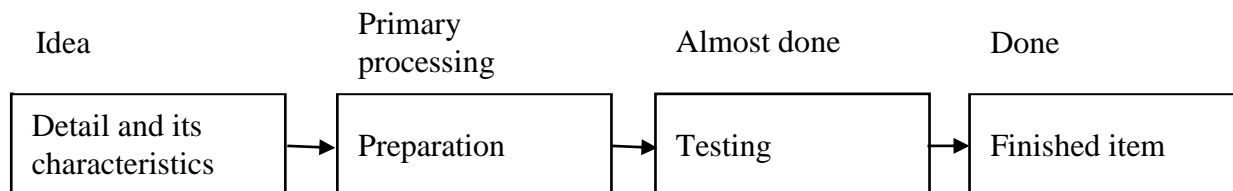


Fig. 5. Schematic representation of decision making in Kanban project management method

In “Kanban,” the project is divided into steps of operations, which are represented by a column. The task list is broken down into cards, which then move through different stages until the product element is ready [7].

For example, you create a new convenient marketplace. If you are using the “Kanban” principle, you have a detailed plan to create the perfect product and after a year

of development, you achieve a desired outcome. “Kanban” is a strict sequence of tasks, even workload, clearly defined at every stage.

From the foregoing, I can distinguish the main disadvantages and advantages of the traditional and flexible project management methodology. All of them are presented in the table below (Table 1) [8].

Table 1 - Advantages and disadvantages of approaches to the formation of project management methodology

Methodology	Advantages	Disadvantages
Traditional	Detailed documentation; clear coordination and approval of customer requirements; reduction of deviations (defects) due to careful planning of project structures; ease of process measurement through clear scheduling of the start and finish of each job	Long startup; strict requirements slow down development; low flexibility makes it difficult to change the direction of project work; the customer receives the final result at the end of the project
Flexible	Fast start-up, step-by-step adjustment according to customer criticism; ability to quickly change requirements; continuous testing and reduction of the number of refinements; constant communication between the customer and the developer; fewer templates	Conditional nature of plans; requires a highly qualified, customer-focused development team; requires constant involvement of the customer in the project work; lack of long-term detailed plans; reducing templates leads to the need for the constant search for new solutions

It should be noted, that Ukrainian companies do not operate under a single project management system. Their elements may be present, but only as elements. “Scrum” is more suitable for product development. For initial steps, such as hypothesis research or testing, “Kanban.” From the point of view of other units, “Kanban’s” lightweight version is used to coordinate daily tasks, synchronize, and, in fact, move forward. The main reason for this state of affairs is, first of all, the underdevelopment of the project management market. To solve this problem, it is necessary to increase:

- qualification level of project managers;
- the state of understanding of senior executives of the need for project management;
- the level of organization of structures in companies [9].

Conclusions

As of today, the presence or absence of at least an idea of the project management system indicates the degree of compliance of the organization with the current operating conditions. The ability of the company to apply modern

management methods in practice is in fact an indicator of successful project implementation and one of the factors that testifies to the efficiency of the enterprise in a long term. It should be noted that the practical importance of this area, including Ukrainian companies seeking to enter foreign markets, points out the need for training professionals in the field of project management and the promotion of project management as a fundamental managerial science. Organizing more resources and public areas where entrepreneurs and managers can share and store, in the open access, information on how project management tools have helped them reduce costs and increase productivity and competitive advantage of the firms can affect the efficiency of Ukrainian small and medium-sized businesses in the implementation of project management and project management tools. Prospects for further development in this area may be specific recommendations for the use of appropriate standards and software in the process of project implementation.

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