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MODELS OF TEAM MANAGEMENT IN IT PROJECTS

MODELE ZARZĄDZANIA ZESPOŁEM W IT-PROJEKTACH

Abstract: Currently, the project approach has become a major element of the management system in most IT companies. The efficiency of its application is confirmed by the fact that it provides effective tools for solving complex management tasks, and allows forming informal

norms of the team management in the IT project for creating a unique corporate culture of the whole organization as the foundation of the entire management system as well. The paper analyzes the management of three key aspects of the team management in the IT project, including: creative potential management, project value management and strategic management of the team. According to the results of the research, it is revealed that IT project managers need to predict the results of economic interaction of their team members from the standpoint of sufficiency, significance and attractiveness in the strategic perspective and constantly develop and improve directions for increasing the effectiveness and efficiency of the motivational mechanism for strategic management of the development of the IT project team.

Keywords: IT company, IT project team management, model, creative potential, project value, strategic management of the team

Streszczenie: Obecnie podejście projektowe stało się głównym elementem systemu zarządzania w większości firm z branży IT. Skuteczność jego stosowania jest potwierdzona przez fakt, że zapewnia skuteczne narzędzia do rozwiązywania złożonych zadań związanych z zarządzaniem oraz umożliwia formowanie norm nieformalnych zarządzania zespołem IT-projektu, tworząc unikalną kulturę korporacyjną całej organizacji jako podstawa całego systemu zarządzania. W artykule zostały poddane analizie trzy kluczowe aspekty zarządzania zespołem IT-projektu: zarządzanie potencjałem twórczym, zarządzanie wartością projektu, strategiczne zarządzanie zespołem. Wyniki badań wskazują na niezbędne prognozowanie wyników interakcji gospodarczych uczestników swoich zespołów z punktu widzenia wystarczalności, znaczenia i atrakcyjności w perspektywie strategicznej przez kierowników IT-projektów. Niezbędny jest też stały rozwój i doskonalenie kierunków podniesienia efektywności i skuteczności mechanizmu motywacyjnego dla zarządzania strategicznego rozwoju zespołu IT-projektów.

Słowa kluczowe: firma IT, IT-projekt, zarządzanie zespołem, model, potencjał twórczy, wartość projektu, strategiczne zarządzanie zespołem

Introduction

In the modern business space, the project approach became the main element of the management system of most IT companies, having proved its effectiveness in solving the problems of complex management tasks. Regardless of the sphere of activity, the ultimate goal, and the specifity of the subject area, project management becomes a standardized method that helps to obtain the expected and predicted result by combining the efforts of management and the team of executors. The practice of IT project management points out that it is the small group (team) allows forming informal norms that create a unique corporate culture of the entire organization as the foundation of the entire management system. Therefore, at present, in a rapidly changing environment, management does not lose its relevance in three key aspects, namely, creative potential management, project value management and

strategic management of the team. Obviously, it implies a high maturity of people and self-government skills in a situation of changes. But, taking into account the above-mentioned approaches, there are prospects for the development of team management tools in project management, that contributes to qualified personnel recruitment and the development of a competitive corporate culture that unites like-minded people in the highly effective project teams.

1. Creative model

Creative thinking in the sphere of IT projects is defined as flexibility and ingenuity in the searching for a solution to a problem using the general, special, technical, methodological knowledge and skills that an employee owns, including his inner interest in the search an extraordinary decision. Whereas, linear thinking is a sequential process, each subsequent step of which is realized only on the basis of the previous one with the lack of the ability to creatively solve the problem in the case of that the basic order breaks down, look for alternative ways, put the right questions, or look for an equilibrium point for the solution.

In 2018, the demand for the development of large-scale IT projects is maintained in all fields of human activity, but the most capacious and untapped market is the sphere of services and network, e-commerce, processing and standardization of large data sets, blockchain[1]. Among the project tasks that are developed by teams, one can distinguish those that require a certain creative approach from the executors. It is at the expense of thinking outside the framework of linear problems that it becomes possible to solve such problems.

In the projects that require a creative component to achieve the goals, the level of team management complexity increases significantly. Effective management of creative teams requires special skills (the necessity of which, as a rule, is not required for management of most ordinary teams), the main component of which is the understanding of the psychology of the work of creative workers, their behavioral and social aspects, the creation of prerequisites for ensuring the process of alternative thinking. In consequence of the scientific and technological progress and the development of information technology, the need for creative potential of IT professionals very often appears in the area of their key competencies. The demand for creative IT professionals has been demonstrated by companies such as Google, Apple, IBM and others for more than a year.

Teams with the greatest creative potential have specialists of different profiles but with equal rights. As a rule, they adhere to the principles of Agile-methodologies[2],

[1] M. Swan, *Blockchain: Blueprint for a New Economy*, O'Reilly Media, Inc., Sebastopol, CA, USA 2015.
[2] M.O. Chubenko, V.I. Seminoh & O.E. Ilarionov, *The use of SCRUM and KANBAN flexible methodologies in IT projects*, "Bulletin of the Cherkasy State Technological University" 2017, No. 1, p. 88-93.

and use different approaches in stimulating creativity. Hierarchies in such teams are absent, because they can cause problems, especially in bureaucratic organizations. Team members will always turn to their supervisors for approval, which leads to the creation of ideas to please the leadership, rather than finding a creative decision that will go against the generally accepted rules.

The process of creative potential management takes place through the lens where the important factors are the set of project goals and implementation time. The threshold value of the project entry is a relative value that indicates the level of competence of the team members that is minimally necessary for access to the basic information on the project. Whereas, the basic information about the project, or the experience of developing the previous projects of similar configuration, is the knowledge that the project team has at the time of its initial phase (formalization and evaluation).

In order for teams to reveal their maximum creative potential, it is important that team leaders understand the basics of collectivization of creativity. A highly critical leader can very quickly decrease the creative potential of a large team. On the other hand, the leader of a motivational team can make people think more creatively than ever.

2. Model of value management

Research suggests that in modern project management for almost two decades, various approaches to the definition of the concept of "value" are widely used. Thus, S.D. Bushuiev defines the value as a benefit derived from the project implementation by all stakeholders[3].

V.A. Rach suggests forming a "harmonized value" of a project or program[4]. P2M considers program management as the basis for management the strategy of organizations with key investments, as well as implementing new development initiatives and increasing the added value of the organization or its subdivisions to flexibly respond to changes in the surrounding. Migration of values determines the processes of transfer of values between stakeholders during the implementation of projects and programs[5]. Grygorian T.G. argues that the adoption of management decisions in project management focuses more on the creation and transfer of value to stakeholders

[3] S.D. Bushuiev & D.A. Bushuiev, *Fundamentals of Individual Competences for Project Management, Programs and Portfolios (National Competence Baseline, NCB Version 4.0). Volume 1. Project management*, Summit-Book, Kiev 2017.

[4] V.A. Rach, *Value as the basic category of modern methodology of project management*, "Abstracts of the VII International Conference "Project Management in the Development of Society". Topic: Management of the value of projects and development programs of organizations", KNUBA, Kyiv 2010, p. 167-168.

[5] *Management of innovative projects and programs. P2M. Volume 1, Version 1.2.,* Naukovyi svit Publ. Kyiv 2009.

in the form of a finished product of the project[6] - a characteristic of the project, which describes its individual and socio-cultural significance in the subjective view of stakeholders[7]. Regarding the need to take into account the value of the project team, it is also constantly emphasized in scientific works, but most of it happens in the context of human resources management. However, the question of how to specifically manage the values of the project team, especially in the current conditions of total informatization and the increase in the number of IT projects are not sufficiently developed.

It should be noted that value management of projects and programs and management by value - these are different concepts. That is, value management contributes to maximizing the outcome for stakeholders, involving them in the process. And management by value is a management style based on value indicators for the sustainable development of the entire organization system. The study of the values of project management and their maturity is a strategic tool for the company in developing its development model and creating a competitive advantage in the market, as well as the opportunity to become the foundation of an individual organizational model of project management. Thus, in the Project Management Maturity Model of G. Kertsnera (PMMM)[8], the company's high level of maturity is determined by its ability to manage projects: basic values affect the culture of people interaction in the company, teamwork building, communication improvement, confidence-building. The mature corporate practice of project management effectively promotes the emergence of values of this type, and the consumer (customer and client) is directly affected by its impact.

Consequently, modern project management has a strongly marked integrated character, focused on social responsibility of managers and provides advanced knowledge and skills of using methods of management by value. The study of the specifity of the management by values of the team of IT projects in practice allowed us to determine the dual nature of this process and, accordingly, offer two approaches to the management by value of the IT projects team. Modern management should be aimed at providing support for communication of projects with the achievement of results that correspond with the generally recognized human values. Values determine the set of rules, criteria and requirements that apply to each person who is or wants to become a member of IT project team. These are values such as decency, the pursuit of perfection, respect for traditions, trust and responsibility, balance and professionalism, initiative and creativity, teamwork and efficiency,

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[6] T.G. Grygorian, *Value management in IT projects. Concepts and concepts*, "Collection of Scientific Publications of NUOS", 2015, No 3, p. 113-119.

[7] T.G. Grygorian, & L.Y.Shatkovskiy, *Models of decision-making processes with value-oriented requirements management in IT projects*, "Project management and development of production" 2016, No 2(58), p. 81-89.

[8] H. Kerzner, & F. Saladis, *Value-driven Project Management*, Wiley & Sons 2009; H. Kerzner, *Project Management: A Systems Approach to Planning, Scheduling, and Controlling, 11th edn*, John Wiley & Sons, Hoboken, USA 2013.

openness and benevolence, etc. Such values are the basis of relationships between employees within the company and companies with customers, society, shareholders and investors (stakeholders).

Obviously, the direction of projects for the future depends on the level of the distribution of values, related to the increase of the importance of intangible assets and the growth of intellectual capital and the provision of social responsibility, allows forming a system of new ways of thinking and generating ideas that create added value (cost) of projects. The reconciliation of values, forming a proper hierarchy in which the values of the team support and strengthen values of the company, is an important task, the implementation of which cannot be solved by itself, and therefore they need to be managed.

However, the socialization of the project management process through the management of the team values should not ignore the economic benefits, in no case. Therefore, an important second approach is represented from the standpoint of business management. In this approach, based on the implementation of the concept of Value Based Management (VBM), it is important to recognize the position where the main purpose of the organization is to increase its value to owners (shareholders). The basis for describing this approach is the P2M standard, in which it is stated that the project team exists in a single mental space that stimulates innovative thinking and the search for non-standard decisions. So, the corporate standard of program and project management by the P2M system allows, in particular, creating a team-balanced project competence that, knowing the value it creates, will constantly work to maximize it; realizing the innovative potential of the project team, finding new resources to achieve the goal[9]. The positive reputation of the project team, formed through the realization of its value, is turned into a reputation capital, increases team competitiveness in the market, attracts consumers and partners, accelerates sales of products and services, facilitates access to resources and business processes.

3. Motivational model of strategic management

If to recognize the work of the team of the IT project as a condition for successful implementation of the strategic objectives of the project, then it is necessary to create an environment in which teamwork would be most effective. At the same time, managers of the enterprise should determine the indicators of evaluation of the project team and provide analysis and monitoring the efficiency of such work. And all this needs to be correlated with the system of strategic management of the enterprise as a whole, including a team that develops and supports the IT strategy;

[9] F.A. Yaroshenko, S.D. Bushuiev & H. Tanaka, *Management of innovative projects and programs based on the knowledge system P2M: Monograph*, Summit-Book, Kyiv 2012.

the regulations of the organization of the strategic IT management system or the rules for strategic decision-making, a promising IT architecture; the structure of IT management and the scenarios of interaction between IT and business; IT development plan in the form of a portfolio of IT projects, etc.

It should be noted that in terms of strategic management of IT teams, the main difference will be only that their activities are allocated in a separate branch, which because of its complexity requires the development and implementation of individual functional strategies and their alignment with the basic strategy of the enterprise. Whereas, the improvement of management factors should include improving the strategic management of the development of the project team in terms of management functions and have its own specifity due to the peculiarities of the project activity, such as the high degree of uncertainty and risk, the need for significant volumes of intellectual work and creativity, the modern level of performance, etc. It should also be noted that, in the context of the proliferation of the digital economy, the tasks of large-scale project management are reduced to the organization of an appropriate information space and the introduction of the soft-type information technology infrastructure (software), which ensures a high-quality coordination of the members interaction and the supply of resources. The base of such information space can be a system for monitoring the implementation of projects, which is fixed into the integrated KPI-model (the Key Performance Indicators) of the company activities.

From the management point of view, there are traditionally three main interrelated factors in the effective team performance: meeting the individual needs of team members; successful team interaction; solving tasks assigned to the team. However, strategically, the efficiency of the team depends on the next steps after achieving the set goals. Therefore, as additional characteristics of the efficiency of the team can be considered the degree of readiness of its members to accomplish new tasks and their willingness to continue to work together in conditions of strategic changes. So, the correct and well-defined tasks of the company make it possible to be aligned with the internal attitudes of people, their own desires and needs (career, knowledge, income, dynamics, status, etc.). That is, the project activity of the team of IT projects allows us to conclude that "a powerful motivator for a person is his comfort from understanding that the business he is dealing with is" transparent "and useful for him, and all risks are taken into account"[10].

That is why in practice, motivational strategies must be developed and implemented, aimed at ensuring that team members have the desire to work productively and effectively in this team. At the same time, such strategies should be changing depending on the stages of the project, as each stage puts its specific tasks before the management of the project. In particular, at the beginning of the project, the motivating factor should

[10] *Motivation of project participants: Electronic resource*. Access mode: http://projectimo.ru/komanda-i-motivaciya/proektnaya-motivaciya.html.

be an explanation of the project objectives to the team, the timing of implementation and the fact that it will give the organization and the members of the team themselves. At the same time, the team members should not only understand the setting of tasks in the same way but also their possible change in dynamics, which ,as a result, reduces the probability of conflict between personal and collective goals, because of greater awareness of the reasons for the targets adopted by the team and the possibility of argumentative defending its position in the discussion. At the stage of project implementation, the best form of motivation will be adequate feedback, recognition of results in achieving short-term goals and small remuneration for successfully working teams and individual specialists. At the final stage, it is necessary to provide team members with the remuneration promised to them at the initial stage of the project launch, substantiating the size according to the established evaluation criteria.

Conclusions

Taking into account the defined and substantiated position that the final strategic outcome of the IT project may depend on many components, the main of which is its team and management of it. The paper concludes that further research is needed to develop a conceptual motivational model for strategic management of IT projects teams as a symbiosis of the mechanisms of directly strategic and motivational management of IT project teams. The main purpose of which is to get the most out of the use of the existing potential of the team of IT projects, allows increasing the overall effectiveness and profitability of project management in general. Furthermore, the key component of project management should be to predict the results of the economic interaction of the team members of IT projects from the standpoint of sufficiency, significance and attractiveness in the strategic perspective, and the development of directions for increasing the effectiveness and effeciency of the motivational mechanism for strategic management of the development of the of IT project team.

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