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PROBLEMS CONCEPT AND DIFFERENCES BETWEEN PROJECT, PROGRAM AND PORTFOLIO MANAGEMENT

Abstract. *The article examines the essence of management of innovative enterprise project based on a portfolio approach, offers tips on how to create portfolios and discusses the basic mechanisms for managing the innovation portfolio. One of the important factors of the spread of any innovation is its interaction with relevant socio-economic environment, which is an essential element of competing technologies. In article examines problems, examples of development of models of management project portfolios. Methodological aspects program, projects, portfolio management, analyzed existing approaches and models of portfolio management, proposed a system of models for project selection and resource allocation. The review of national and especially foreign portfolio management concepts. The problems of organization and support management in organizations that implement their activities in the form of projects were considered, as well as the main approaches to managing a portfolio of projects, procedures for drawing portfolio, taking into account both formal and informal aspects was proposed. The author's own view on the problem of the formation of programs, the portfolio of projects was realized.*

Key words: project; program; portfolio management; innovative portfolio; project-oriented organization; risk

Introduction

In a corporate context, many people use the term "Project management" in the broader sense of deploying projects. These projects quite often span across, or are based in, multiple divisions and/or departments of the organization as a whole. So if a broader definition is accepted, then for purposes of managing a significant number of projects, we can visualize project management as a tiered management structure. According to the PMBOK Guide 5th edition, “A project is a temporary endeavor undertaken to create a unique product, service or result.” A temporary endeavor undertaken to create a unique product, service or result. So you can say that a project is temporary in nature, i.e. once the project achieves its objective its existence comes to an end, and the objective of a project is to create a unique product, or develop a system to provide you any service, or is the result of any task [1].

You startup the project, set up the call center and hand it over to your client. Now your client is ready to provide support service to its clients. It is not necessary for your team members to be located in one place; sometimes your project team may include members located outside your geographic location. These processes include initiating the project, developing the plan to execute the project, executing the project according to the approved plan, controlling the project activities throughout its lifetime, and finally handing over the output of the project to the client, and closing the project. Simply put, project management is the application of knowledge, skills, tools, and techniques to project requirements. Resource management: ability to enable efficient portfolio management, including reporting and optimization measures. It is believed that using portfolio management models should be formed in a certain sense of the optimal portfolio, which can further adjust the manager through a wide involvement of visualization tools. Portfolio management involves the following main processes: 1. Selection of projects to portfolio (portfolio creation and review). 2. Calendar scheduling. 3. Resource planning and "leveling" the intensity of resource consumption [4].

These processes can be executed: in series with the iterations of this sequence; 1st and 2nd parallel, and the next stage 3rd; All three processes simultaneously. The most commonly used consecutive implementation, much less often – the second option, and the third is due to computational difficulties rather hypothetical.

Financial management: Ability to deliver on cost controls, project accounting, and portfolio cost reporting. Reporting: ability to provide relevant resource, schedule, and analytics. Collaboration: integration mechanisms that enable team members to communicate better and work efficiently through sharing information. Risks and Issues: identification of risks and issues supported by mitigation strategies. Schedule development: activity list, activity attributes, activity resource requirements, resource calendars, project schedule network diagrams, activity duration estimates, project management plan, project scope statement, work breakdown structures [2].

Analysis of the main achievements and literature

With the transformation in product innovation process has the following phase. Creating of innovation – the successive stages of research, development work, organization of pilot production and sales, organization of commercial production (not yet implemented the useful effect of innovation, but such implementation are prerequisites). Distribution of innovation – a redistribution of socially beneficial effects of innovation between producers and between producers and consumers. This information process, the shape and speed of which depends on the power of communication channels, peculiarities of perception by business entities, their abilities to practical use of this information. Diffusion of innovation – the process by which innovations transferred on communication channels between members of social systems in time (the spread has once mastered and used innovation in the new environment or field application) [5].

Richard L. Dawte, a well-known American management specialist, sees motivation as a force inside or outside of the person, and which excite enthusiasm and dedication to certain actions. He further notes: "The motivation of employees affects their productivity, and part of the work of the manager is precisely to direct the motivation to achieve the goals of the organization." A. Fayolle singled out five key management functions (foresight, planning, organization, regulation, control (coordination)), S. O'Donnell – six (planning, organization, management, leadership, work with staff and control). Among the principles of implementing project portfolio management functions are, for example, the principles considered by G. Kunz, he consider management functions, like most authors, planning, organization, motivation and control. So, from the point of view of G. Kunz, the principles of control are:

– the principle of guaranteeing the achievement of the objectives, which involves ensuring the implementation of plans based on the identification of certain deviations from them and taking appropriate measures to correct these deviations;

– the principle of the orientation of control for the future, which implies that the control system must be based, first of all, on information oriented to the future [6; 7].

Research aim and task

The main purpose of the research is to analyze the problems of project, program and project portfolio formation, to determine the main directions for solving this problem and to develop a project portfolio formation process subject to resource constraints that takes into account both quantitative and qualitative aspects.

Materials of research

The essence of the problem lies in the fact that human activity, as already noted, depends both on the motives arising from the closed interaction of man and the goal (task), and from the motives of open interaction, when the subject of the environment generates motives that motivate the person To certain actions. The main issues faced by companies developing new products based on portfolio management are the following [9]: •

– Too many projects overcome the barrier to the list of projects being implemented because it is difficult to assess at an early stage which project is better and worse;

– Resource requirements for project needs are significantly higher than the supply; •

– Insufficient information when deciding whether to terminate, prolong and suspend a project; •

Too many small projects in the portfolio and lack of large ones. Since at each of the stages of portfolio management there are optimization tasks that are predominantly single-tiered, then there is a problem of choosing the main criterion, or the formation of a global criterion from several, when the problem arises [8].

The task of optimizing a portfolio is much more complicated when there are heterogeneous restrictions – on resources: financial, material and labor; At the time of portfolio implementation and some of its projects.

Risk is a very important characteristic of the portfolio, because as a result, the actual implementation of risk factors determines its efficiency, since a large percentage of projects are not successfully implemented. This is especially true for innovative companies, where it is obviously anticipated that a significant proportion of projects will lead to a negative outcome [3; 10; 11]. Helping to assess the risk of successful completion of each new project allows you to accumulate statistics on unsuccessful projects. The quality of risk-taking depends significantly on the type of portfolio projects. In addition, a simulation model is used for this purpose, the advantage of which is universality, and the disadvantages are considerable time and dependence on the input data provided by the experimenter.

Program. A program is a group of related or similar projects managed in a coordinated way to get the benefits and control not available from managing them individually. This means that in a program you will have multiple projects which are either similar or related to each other. A group of related projects, subprograms, and program activities managed in a coordinated way to obtain benefits not available from managing them individually. For example, let's say that you have two projects: the first project is to construct a school building and the second project is to construct an office building. Since these two projects are similar in nature, you will keep them under a program. Program Management. Program management is defined as the centralized coordinated management of a program to achieve its strategic objectives. In program management you only manage the interrelated or interdependent projects as a group to achieve the desired result. The objective of program management is to optimize the utilization of resources among projects and reduce the friction or constraints so as to increase the organization's performance. The Difference between Project Management and Program Management. The following are a few differences between project management and program management:

– In project management you manage one individual project while in program management you manage multiple similar or related projects.

– A project can be a part of a program but a program cannot be a part of a project.

– Program management addresses the management of project management. It helps you set the project management processes and measure the project results.

The Benefits of Program Management. The following are a few benefits of program management:

– Less conflict among projects;

– Optimal utilization of resources;

– Resource constraints are minimized;

– Better communication and coordination among projects;

– Improves organization's performance.

Portfolio. Projects, programs, sub-portfolios, and operations managed as a group to achieve strategic objectives. We have discussed the projects and programs, now it is time to discuss the portfolio. Portfolio refers to a group of related or non-related projects or programs. A portfolio can consist of multiple programs or multiple projects without having a single program. A portfolio can have multiple non-similar projects without having a program, because two or more non-related projects will be managed under portfolio management. Conversely, in program management only related projects are managed. For example, let's say that you have three projects: the first project is to construct a building, the second project is to conduct research to find the impact of motor pollution on the environment, and the third project is to set up a call center. So how you are going to manage these projects? You will manage these projects by keeping them under a portfolio, because all three projects are neither related nor similar to each other.

Portfolio management. Portfolio management has a bigger scope and objective than program management. In portfolio management, there is a centralized management whose job is to identify, prioritize, and authorize the projects or programs. This centralized management controls and manages the projects or programs to achieve the organization's strategic business objectives. Please note that, although portfolio management sets the priority of the projects or programs in a group, it does not oversee any individual project or program. Portfolio capability demand management: a solid project intake process enables work and project requests in an organized fashion. Project prioritization and selection: Projects are categorized as run, grow, or transform based on strategic impact. Run projects are core internal projects to keep the existing IT infrastructure functioning. Grow projects enhance existing capabilities. Transform projects are those that deliver new core functionality that provide an advantage to an organization. A good PPM solution helps drive the strategic direction of an organization by applying „what-if" scenarios. Portfolio optimization: ability to provide visibility into organizational activity across projects and information to inform portfolio's strategic direction and cost optimization [8]. The difference between Portfolio management and Program management. The following are a few differences between portfolio management and program management:

– in program management you manage similar projects, while in portfolio management you manage non-similar projects or different programs;

– the scope for program management is larger than the project scope, and the portfolio has organization-wide scope which changes with the strategic objectives of the organization.

– The Benefits of Portfolio management. The following are a few benefits of portfolio management:

– optimal allocation and utilization of resources among projects or programs;

– provide constant support to projects or programs;

– fewer conflicts and better communication among projects or programs;

– better coordination among projects or programs.

Each level up this structure represents a progressive order of magnitude in management responsibility. The person responsible for projects is the project manager, for programs it is the program manager and for portfolios it is the portfolio manager. Such a scenario necessarily involves a considerable number of people, often with conflicting concerns, interests, priorities and demands that need managing. Hence, the need for a strong and clear management structure from the corporate executive level down to those working at the activity level. In the last couple of decades, four project "responsibility" levels have come to be recognized, that is, from the project level up: Project management generally [4; 10].

*Table – **Differences between project, program and portfolio management***

№	Domain	Level	Comparative Responsibilities
1	2	3	4
1	**Contextual Environment**	**Project**	Objectives driven; tactical, predictable, reliable, performance-based tools and techniques; time limited. Target is product completion; awareness of stakeholder involvement.
		Program	Overall program goals driven; generally complex and uncertain; requires flexibility and responsive, learning-based approach; time is indefinite. Target is overall program progress; cultivation of stakeholder support.
		Portfolio	Corporate vision and strategy driven; tools to identify, select, prioritize, balance, and initiate the right mix of projects; effectively a part of permanent corporate management. Target is realizing benefits; coordination of stakeholder commitment.
2	**Management**	**Project**	Business-like agreements; authority-based directive style; conflict resolution; single purpose and rational decision making; activity authorization. Focus is on project objectives. Style: authoritarian.
		Program	Exploratory change for the better – providing vision and leadership; management of powerful stakeholders, including sponsor engagement; intuitive decision-making. Focus is on program goals. Style: facilitation.
		Portfolio	Management, coordination and accounting for business benefit. Focus is on corporate portfolio strategies; Business Case acceptance; and program authorization. Style: Stakeholder leadership, administration.
3	**Stakeholders**	**Project**	Primarily: Program Office, project's client, sponsor, team members, and hired resources. Clear and concise, two-way.
		Program	A broader range of stakeholders who have an interest in the project, e.g. Project Portfolio Management Office, members of the public benefitting or impacted by the project, media and related actors. Public relations style.
		Portfolio	Corporate office, investors, politicians, public at large. Communicate with stakeholders relative to the overall portfolio.
4	**Planning**	**Project**	Standard approach: What must be done to reach a future objective, how, who and when. Detailed delivery plans created.
		Program	Overall program plan to drive stakeholder engagement; establish milestone sequence and pacing; allocation of internal resources and overview of external resources; and benefits realization planning.
		Portfolio	Convert corporate vision into a viable selection of projects; maintain executive support; scan the internal and external environments for changes impacting the portfolio; modify the portfolio accordingly; create and maintain necessary standardized reporting practices suited to this level; ensure optimum benefits reaping.
5	**Quality**	**Project**	Grade clearly specified; testing to ensure compliance
		Program	Establish required quality grade across a program; testing criteria and frequency. Custodian of recommended practices.
		Portfolio	Provide overview of overall quality approach; requirements and standards for each portfolio.
6	**Time**	**Project**	Clear and controlled life span to meet project objectives.
		Program	Planning of project activation to establish required sequencing of deliverables to satisfy program goals.
		Portfolio	Interpreting corporate strategies into portfolios. Obtaining corporate approvals for activation of major portfolios, programs and projects. Prioritizing, aligning and sequencing the required portfolio program-level components for maximum effect and resource efficiency.
7	**Risk**	**Project**	Generally specific, internal and local, impacting project performance with respect to product delivery. Changes and risks and obtain executive approval for necessary redirection.
		Program	Assessing collective risks arising from multiple projects, perhaps acting on each other. Scanning the contextual environment for potential risks to a whole program; resolving conflicts at the project level.
		Portfolio	Promoting a corporate environment that minimizes risks to individual programs and projects; removing corporate roadblocks; resolving conflicts at the program level; managing reserves for major unexpected risk events.

1	2	3	4
8	**Communications**	**Project**	Planning and organizing delivery of instructions at the project level. Regular progress reporting to project stakeholders and the Program management level, suitably packaged for each (e.g. forecast final delivery, forecast final cost, urgent risks, roadblocks and issues).
		Program	Review project reports with view to resolving roadblocks and issues; rescheduling the program if appropriate; or escalating to Portfolio level for resolution.
		Portfolio	Reviewing program reports for appropriate action; modifying portfolio plan to minimize impacts. Consolidating program/project reports for corporate consumption.
9	**Monitoring & Control**	**Project**	Monitor and control the work of producing the products the project was undertaken to deliver.
		Program	Monitor the progress of program components to ensure overall goals; schedules; budget; benefits; of the programs are all contained. Provide governance to projects in the programs
		Portfolio	Monitor aggregate benefit realization performance; and cost to-value indicators. Provide governance to program management.
10	**Change Management**	**Project**	Changes are to be avoided or minimized if possible; processes in place to keep changes managed, and controlled. Note: "Change Management" is the business of administering changes to scope, time, cost, etc. This is not to be confused with "Management of Change" meaning, for example, organizational change as a project.
		Program	Expected from inside and outside the program; generally seen as opportunities.
		Portfolio	Changes in the broader external environment continually assessed. Overall portfolio managed accordingly.

For the project management domains shown, responsibilities are tabulated briefly for each project management level. The entries demonstrate the changes in focus between the management levels.

Conclusions

As you move from project management towards portfolio management, scope and objective will become larger and larger. In project management you do micro management, and in portfolio management high level macro management is required. Program management and portfolio management facilitate better communication and coordination among projects and programs, resulting in enormous benefits in economies of scale and lesser risks.

When the different levels described are examined in the light of the various domains of project management, the responsibilities at each level become much clearer and should prove helpful. Without carefully documented clarification and structure, there is every possibility that overlap and competition for control will emerge with inevitable added cost.

The main tasks of project portfolio management are as follows: definition of the structure of the project portfolio – types and characteristics of projects that should be included in the portfolio to achieve the goals of the organization, the formation of a portfolio of projects – the selection of projects that will be included in the portfolio, calendar planning portfolio, allocation of resources between projects, portfolio, operational portfolio management of projects.

The success criteria are different for projects, programs and portfolios: for projects it is timely completion, under budget, and the quality of output of the project; for programs it is degree to which it satisfies the objective it was undertaken; and for portfolios it is the combined performance of its components. In the last couple of decades, four project "responsibility" levels have come to be recognized, that is, from the project level up: project; program; portfolio – portfolio management.

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ПРОБЛЕМИ КОНЦЕПЦІЙ І РЕЗУЛЬТАТІВ МІЖ ПРОЕКТОМ, ПРОГРАМОЮ ТА УПРАВЛІННЯМ ПОРТФЕЛЯМИ

Анотація. *Розглянуто сутність управління інноваційним підприємством на основі портфельного підходу, надано поради щодо створення портфелів та висвітлюються основні механізми управління інноваційним портфелем. Одним із важливих чинників поширення будь-якого інноваційного проекту є його взаємодія з відповідним соціально-економічним середовищем, що є важливим елементом конкуруючих технологій. У статті розглянуто приклади розробки моделей портфелів управлінських проектів, методологічні аспекти програми, проекти управління портфелем, аналіз існуючих підходів та моделей управління портфелем. Запропоновано систему моделей для вибору проектів та розподілу ресурсів. Огляд концепцій національного та особливо іноземного управління портфелем. Розглянуто проблематику організації та підтримання управління в організаціях, які реалізують свою діяльність у вигляді проектів, а також основні підходи до управління портфелем проектів. Запропоновано процедуру формування портфеля проектів, що враховує як формальні, так і неформальні аспекти. Реалізовано власне оригінальне ставлення авторів до проблем формування програм, портфелів проектів.*

Ключові слова: проект; програма; управління портфелем; інноваційний портфель; проектно-орієнтована організація; ризик

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ПРОБЛЕМЫ КОНЦЕПЦИЙ И РЕЗУЛЬТАТОВ МЕЖДУ ПРОЕКТОМ, ПРОГРАММОЙ И УПРАВЛЕНИЕМ ПОРТФЕЛЯМИ

Аннотация. *Рассмотрена сущность управления инновационным предприятием на основе портфельного подхода, даны рекомендации по созданию портфелей и освещены основные механизмы управления инновационным портфелем. Одним из важных факторов распространения любого инновационного проекта является его взаимодействие с соответствующей социально-экономической средой, что является важным элементом конкурирующих технологий. Рассмотрены примеры разработки моделей портфелей управленческих проектов, методологические аспекты программы, проекты, управление портфелем, анализ существующих подходов и моделей управления портфелем.*

Предложена система моделей для выбора проектов и распределения ресурсов. Проведен обзор концепций национального и особенно иностранного управления портфелем. Рассмотрена проблематика организации и поддержания управления в организациях, реализующих свою деятельность в виде проектов, а также основные подходы к управлению портфелем проектов. Предложена процедура формирования портфеля проектов, учитывающая как формальные, так и неформальные аспекты. Реализовано собственное оригинальное отношение авторов к проблемам формирования программ, портфелей проектов.

Ключевые слова: проект; программа; управление портфелем; инновационный портфель; проектно-ориентированная организация; риск

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