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PORTFOLIO MANAGEMENT CONCEPT FOR IN-HOUSE RESOURCE PROJECT
ORIENTED ORGANIZATION UNDER RISK AND UNCERTAINTY CONDITIONS

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КОНЦЕПЦІЯ ПОРТФЕЛЬНОГО УПРАВЛІННЯ ВИКОРИСТАННЯМ
ВНУТРІШНЬООРГАНІЗАЦІЙНИХ РЕСУРСІВ ПРОЄКТНО-ОРІЄНТОВАНИХ ОРГАНІЗАЦІЙ В
УМОВАХ РИЗИКУ ТА НЕВИЗНАЧЕНОСТІ

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Problem. In the past two decades in the methodologies of project management in general and corporate governance projects in particular, singled out and gradually becomes independent of the direction of management of portfolios of projects. As noted in [1, p.101] This direction comes from a point of development through concrete projects necessary to forward sustainable development - achieving all strategic objectives set taking into account the risks and the limited resources of the enterprise, that is to manage a portfolio of projects. Within the specified direction of enterprise are treated as a set of portfolios, implemented in accordance with the strategic plans. The portfolio of projects, or portfolio, based on generally accepted today terminological and conceptual base [2, p. 121] - a set of projects and / or programs that are not necessarily linked, combined together for convenience of control, coordination and management.

One of the main functions of portfolio management project is to bring together all the information relating to aggregate projects, their cost, schedule and status of implementation, resources, risks, and other critical factors. Company managers thus have the opportunity to regularly analyze the portfolio properly build resources between projects that are part of it and regulate the implementation of these projects [1, p. 54], ensuring maximum efficiency of the latter.

Typically, a corporate project management distinguish six main areas: evaluation of benefits for the project; ranking and selection of projects; management of communications between projects; performance management portfolio; resource management portfolio, as well as private portfolio management projects. According to researchers and practitioners, evaluation of projects and benefits for the ranking of projects is currently the most comprehensively processed and used areas in organizations. However, performance management project portfolio and resource management portfolio, by contrast, are least developed - both in terms of methodology and practice of [1, p.127]. This makes the study of the topic, some aspects of which are presented in this article is relevant.

Analysis of previous publications. Among the scientific works, which considered issues of resource management for portfolios of projects can be noted of S.D. Bushueva, Y. Carpenters, S.V. Tsutsura, N.Y. Yehorchenkovoyi and a number of other researchers. In this formulation and solution of problems of resource management for portfolios of projects usually come from the fact that the portfolio is formed. However, it should be noted that approaches to the formation of private portfolios can vary considerably, and, in many cases specified formation is situational.

Yes, we already mentioned [1, s.125] proposes a strategic portfolio structure to separate the three groups of projects as portfolios: foreign investment projects that are focused on making a profit; external and internal projects that are important for the development of the company and not directly related to the receipt, so to speak, instant, profit; other projects. Given the general, in the terminology of the author, the enterprise is possible using sectoral, geographic or other criteria formation.

However, in [3, p.93] noted that can be combined to list the projects that are the responsibility of a single center of responsibility and / or those that run on common pool resources (finances, people, equipment, materials, energy). That is, in the latter case, should be implemented comprehensive approach that provides a coherent formulation and solving actual formation (isolation) books projects in organization and resource management for portfolios of projects. When certain projects are not such that the structure only of their orders for products, services or work permit to ensure efficient use of resources, there is the problem of development of scientific and methodological foundations of management, from the viewpoint of ensuring the effective use of resources portfolio projects.

Purpose of the article - to form the concept of management of the in-house resources, project portfolio taking into account the uncertainty of demand for these resources, based on the conditions of the complex formulation and solution of problems forming (isolation) portfolio projects in the organization and proper management of resources for project portfolio.

The main material. Resources required to implement projects in the enterprise can be provided by themselves or procured externally, ie on the basis of outsourcing. R. Coase in 1937 in his work "The Nature of the Firm," which was for a number of works in the relevant direction, has shown that the definition of conditions for a certain type of activity - own power supply or external - must come from comparative index value. When transaction costs are higher costs of providing certain activities themselves (within the company), such activities should be vertically integrated [4, p. 385 - 405.]. That is, in our presentation has ensured its own.

However, there are various approaches to the definition of the concept of "transaction costs". For this seems the most appropriate at which the category will be included all the transaction costs associated with the interaction and coordination of the economic actors [5].

Further theoretical principles that were formulated by R. Coase, have been developed in many works, including in research, O. Williamson [6]. According to the theory, the researchers divided the costs of the company into three groups: production - those that are directly attributable to the use in the production of raw materials, intermediate products, etc., as well as salary; operating - those associated with marketing and negotiating and concluding contracts both within the firm and with other companies; management - those associated with the management of the company as a whole and specific areas of activity. A. Williamson works directly intersect with the main provisions of the "new institutional economics", which examines transactions that occur both within firms and between private companies. Thus the main question is "limits" firms, ie, about which perform operations more cost within the firm, and who "buy" on the side. The very definition of how the operations should be implemented company, is the basis of so-called operational approach (or "from operating") costs. This operations within the company in that approach identified with the performance of their own.

According to the approach of operating costs on the value of the last four influencing factors: 1) uncertainty - which is linked to changes in the environment that are parties to the agreement can not predict or control; 2) specialty assets - in the sense that human resources, intangible or tangible assets are specific to a particular type of agreements, and that the assets of specialization, varying from one

transaction to another, generating a small limited choice of potential partners agreements; 3) limited rationality - which comes from the fact that no one person takes certain decisions has full information on the matters for which decision-makers; 4) "opportunism" as a situation in which some people who make decisions, may take risks that are beyond their competence.

The last two factors, one way or another, are always present, but they are considered in the context of the feasibility perform certain operations within, or outside, the company only in combination with uncertainty and limited choice for small transactions.

Thus, software (production) resources that are consumed in the implementation of projects on their own company is considered advisable, especially when the system supply and / or use high levels of uncertainty, when the market operates only one supplier or customer specific product (services), respectively, consumed or produced now, and when reaching certain input or output parameters to the required level, linked to the need of a high level of control.

Management vertically integrated business is characterized as complex, as it involves not only mechanical association within one company different activities, but also need to ensure their teamwork.

However, it is difficult to expect that the production capacity for the activities that are combined in terms of vertical integration, will be fully consistent with each other. At least in some time periods capacities of individual units can be detected excessive. When the vertically integrated company has in its structure a unit production capacity is not used fully, it leads to an increase in fixed costs per unit of product (service), which it produced. As a result, the cost of products (services) is increasing. Moreover, if basic, in our case design oriented unit has a choice - to use complementary capacities (vertically integrated) unit or seek the services of a third party, then, other things being equal, when the products (services) of the latter can be purchased lower costs, priority will be given to them. In terms of growth of costs related to the acquisition of products (services), provided its own auxiliary unit capacities are used latter even less, and the products (services) which they produce are even more expensive. In this case we are dealing with so-called black hole spiral demand [7].

Implementation of the strategy of vertical integration (manufacture their own) causes reduction of flexibility, in particular, significantly, when there is a need to change provider, for example, because of the need for technological change. In addition, technological risk accumulates and thus problems, such as arising in subsidiary (vertically integrated) production enterprises, can cause problems in the ground and / or other supporting industries.

It should be noted that the sectoral orientation has also its own specific factors that determine the feasibility of a full or partial ensure appropriate function (transportation, warehousing, logistics service as a whole, etc.) on their own or external supplier.

When the company, based on a comprehensive analysis of the above factors, selected the projects provide resources of its own production, it encounters a problem when orders coming from certain projects at the time, not those that are able to create the foundations for effective use of its production capacity, in particular due to a mismatch between capacity and demand for products, services or works, provided that these facilities, and that (demand), in general, be subject to seasonal and random fluctuations.

The general theory of production management, as we know, offers a number of methods that can affect the conditions of the supply and demand for production capacity. For the main methods of demand management considered [8]: pricing, promotion of products (services), additional demand creation and accumulation of orders, which delayed deadline. For basic management techniques suggestion of capacities appear subcontracting order fulfillment, inventory management, varying the time of the machinery and equipment.

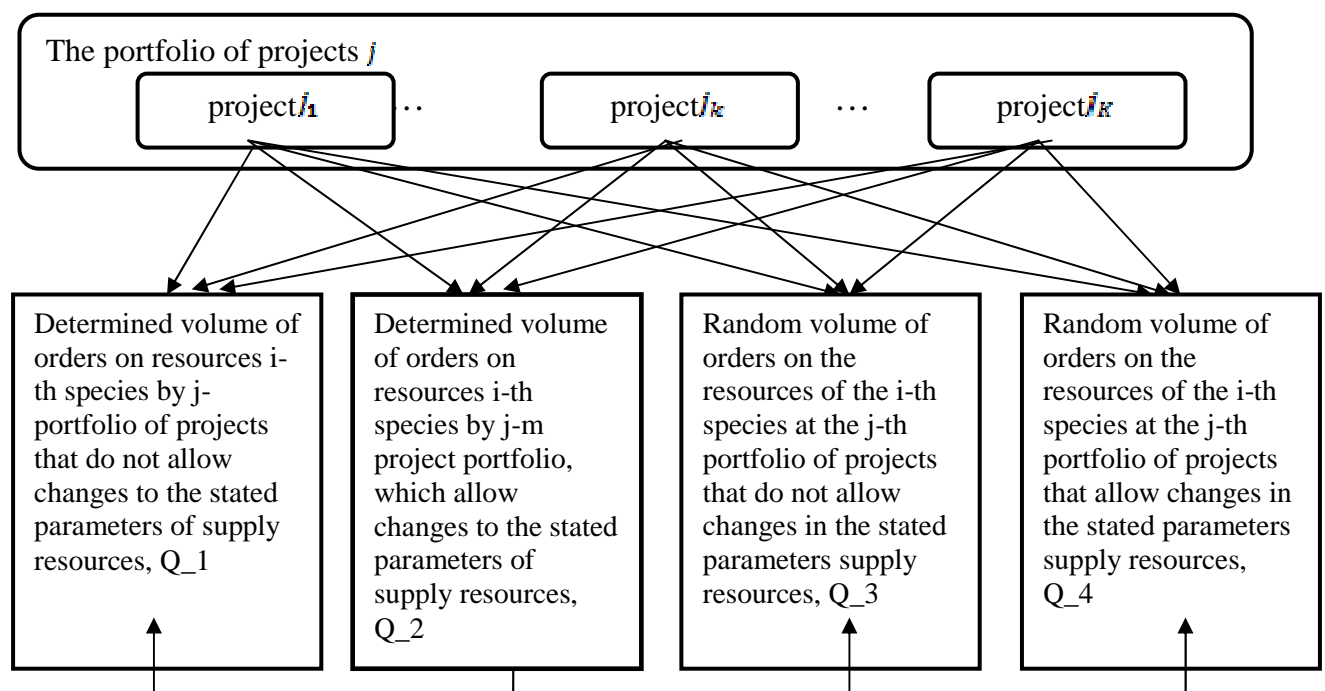
If the projects during their implementation requires the provision of certain services necessary to indicate the difference from past products - intangibility, variability (volatility) conditions in stocks. Immateriality services reflected in the fact that they can not hold in your hands, feel the touch or see to the decision to purchase. However, most products have both tangible and intangible characteristics that

makes use of the concept Continuum products that range, within which the expected products ranging from material or own products (goods) - to intangible, or service-dominant .

Mainly due to the immateriality of services production processes and consumption imposed last time. That is usually the consumer can not actually separate the service of who delivers it, or the place where the service is provided, and he often varying degrees, involved in the production process services. In turn, determines the probability that quality will be more than quality products vary, and the degree of variability will be the higher, the more services are intangible. Actually Services can not accumulate, that hold stocks. In some works services, similar to the products, defined as products that are perishable. At the same time, the stocks could maintain production capacities as understanding the actual machinery, equipment etc. and staff. Since most services, by definition, is, so to speak, perishable, it acquires special significance determination demand seasonally and random fluctuations. The cost of maintaining inventories in the context of the provision of services associated with excess production capacity - services available, but there is no demand. Costs of inventories in this case can be significantly reduced when, for example, reduce staff hours or change payment system and move to a system of compensation expenses through commissions.

Formation efficient in terms of creating conditions for the effective use of resources for implementation of the projects portfolio requires preliminary classification of projects that could potentially enter the relevant portfolio.

Fig. 1. presented the concept of integrated management control in-house, that is their own or those produced by themselves, a certain type of resource projects in the portfolio of the uncertainty of demand for the latest information resources. Apparently, the criteria for inclusion in the portfolio of projects to serve the demand characteristics of the projects in terms of resources and decision-demand data management (in particular, the possibility of postponing order fulfillment), and the suggestion of such resources, based on the type of project (in particular, the possibility of playing resources other projects). Association of bulk orders on the resources of the i -th species, $i = \overline{1, I}$, coming from every n -th project $k = \overline{1, K}$, within the n -th set of orders or portfolio to use in the portfolio of varieties together orders Q_n , $k = \overline{1, K}$, three of which, $n = \overline{2, 4}$, can be regarded as complementary – formation conditions of supply and demand and the capacities to manage them, which in turn creates the preconditions for the effective use of organizational resources (human resources, production capacity, freight capacity, financial resources, and the like).



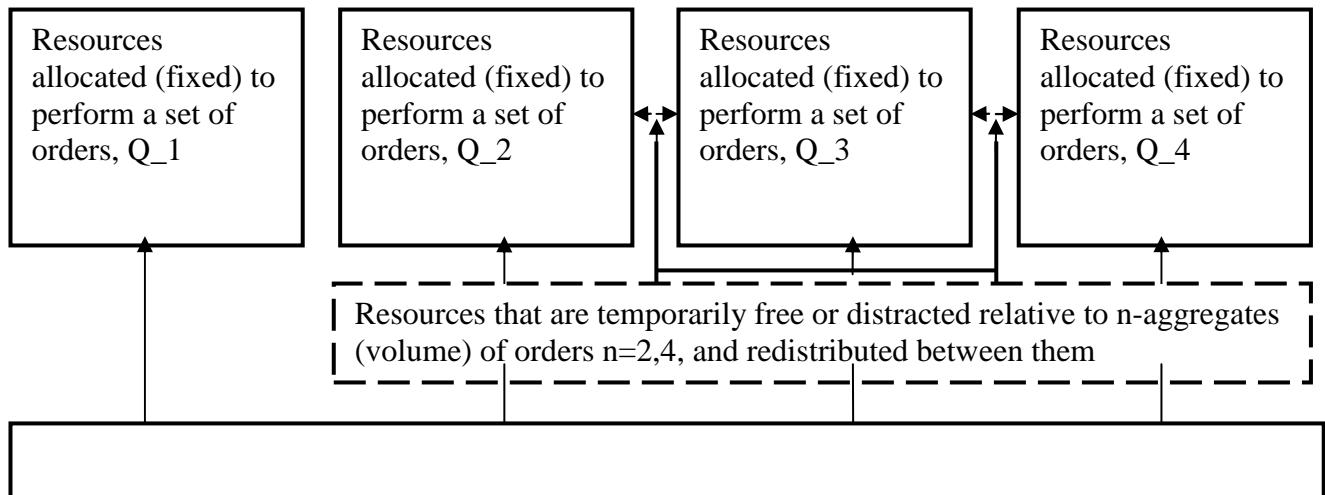


Figure 1 – the Concept of portfolio management integrated demand generation and project proposals relative to internal resources based on the risk and suggestions

Conclusion. The concept of management of organizational resources in the portfolio accounting for the uncertainty of demand for these resources, based on integrated formulation and solution of problems of formation (separation) of the portfolio (pcportable) projects in the organization and management of resources for a portfolio of projects.

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ПЕРЕЛІК ПОСИЛАНЬ

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ABSTRACT

Vorkut T.A. Portfolio management concept for in-house resource project oriented organization under risk and uncertainty conditions / T.A.Vorkut, N.M. Tsimbal, A.M. Chechet // Project management, systems analysis and logistics. Science journal: In Part 2. Part 1: Series: "Technical sciences" - Kyiv: NTU, 2014. - Vol. 14

In the article presents concept of integrated management control of in-house or own or produced by themselves, a certain type of resource in the projects portfolio taking into consideration of the demand uncertainty for the latest information resources.

The main goal of the article is to form a management concept of intra-organizational resources in project portfolios considering the resources uncertainty demand, based on the comprehensive formulation conditions and on the decision of tasks formation (separation) of projects portfolio (subportfolio) in the organization and management of project portfolios' resources.

Typically, a corporate project management highlighting six main areas: project benefit evaluation; ranking and selection of projects; communications management between projects; portfolio productivity management; portfolio resource management, as well as project portfolio management. According to researchers and practitioners, evaluation of projects benefits and projects ranking today are the most researched and used areas in organizations. However, project portfolio productivity management and project portfolio resource management, conversely, are the least developed both in methodology and practice applying. That makes relevant the topic of research, some aspects of which are presented in this article.

Formulating and solving problems of projects portfolios resource management generally proceeds from generated portfolio. It should be noted that the approach of portfolio (subportfolio) formation can considerably vary and refer to situational formation in many cases.

The article presents the concept of complex projects portfolio formation in the organization and resources management concept of intra-organizational resources in project portfolios considering the uncertainty demand on this resources. Further research in the context of the proposed concepts require formulating and solving problems of rational resource allocation in the projects portfolio based on the features of the objects functioning.

The results of the article can be used in further research.

KEYWORDS: MANAGEMENT, PROJECTS, PORTFOLIOS, SUBPORTFOLIOS, RESOURCES, DEMAND.

РЕФЕРАТ

Воркут Т.А. Концепція портфельного управління використанням внутрішньоорганізаційних ресурсів проектно-орієнтованих організацій в умовах ризику та невизначеності / Т.А. Воркут, Н.М. Цимбал, А.М. Чечет // Управління проектами, системний аналіз і логістика. Науковий журнал: в 2 ч. Ч. 1: Серія: „Технічні науки” – К. : НТУ, 2014. – Вип. 14

В статті представлена концепція комплексного управління управління внутрішньоорганізаційними, тобто власними або такими, що виробляються власними силами, ресурсами певного виду в портфелі проектів із урахуванням невизначеності попиту останніх на дані ресурси.

Мета роботи – сформулювати концепцію управління використанням внутрішньоорганізаційних ресурсів, в портфелях проектів із урахуванням невизначеності попиту на дані ресурси, виходячи з умов комплексної постановки і вирішення задач формування (виокремлення) портфеля (підпортфеля) проектів в організації і власне управління ресурсами за портфелем проектів.

Як правило, в корпоративному управлінні проектами виокремлюють шість основних областей: оцінювання вигід за проектами; ранжування і вибір проектів; управління комунікаціями між проектами; управління продуктивністю портфеля проектів; управління ресурсами портфеля проектів, а також власне управління портфелем проектів. На думку науковців і практиків,

оцінювання вигід за проектами і ранжування проектів на сьогодні є найбільш повно опрацьованими і використовуваними напрямками в організаціях. Водночас, управління продуктивністю портфеля проектів і управління ресурсами портфеля проектів, навпаки, залишаються найменш розвинутими – як щодо методології, так і практики застосування. Це робить тему дослідження, окремі аспекти якого, представлено в даній статті, актуальною.

Постановка і вирішення задач управління ресурсами за портфелями проектів, як правило, виходять із того, що портфель є сформованим. Водночас, слід зазначити, що підходи до власне формування портфелів (підпортфелів) можуть суттєво різнитися, і, за багатьох випадків, зазначене формування носить ситуативний характер.

В роботі запропонована концепція комплексного формування портфеля проектів в організації і управління використанням внутрішньоорганізаційних ресурсів в портфелях проектів із урахуванням невизначеності попиту на дані ресурси. Подальші дослідження в контексті розвитку пропонованої концепції вимагають постановки і вирішення задач раціонального розподілу ресурсів в портфелі проектів, виходячи із особливостей функціонування досліджуваних об'єктів.

Результати статті можуть бути використані в подальших наукових дослідженнях.

КЛЮЧОВІ СЛОВА: УПРАВЛІННЯ, ПРОЕКТИ, ПОРТФЕЛІ, ПІДПОРТФЕЛІ, РЕСУРСИ, ПОПИТ.

РЕФЕРАТ

Воркут Т.А. Концепция портфельного управления использованием внутриорганизационных ресурсов проектно-ориентированных организаций в условиях риска и неопределенности / Т.А. Воркут, Н.Н. Цымбал, А.М. Чечет // Управление проектами, системный анализ и логистика. Научный журнал: в 2 ч. Ч. 1: Серия: „Технические науки” – К. : НТУ, 2014. – Вип. 14

В статье представлена концепция комплексного управления внутриорганизационными, то есть собственными или которые производятся собственными силами, ресурсами определенного вида в портфеле проектов по учету неопределенности спроса последних на данные ресурсы.

Цель работы - сформировать концепцию управления использованием внутриорганизационных ресурсов, в портфелях проектов по учету неопределенности спроса на данные ресурсы, исходя из условий комплексной постановки и решения задач формирования (выделение) портфеля (подпортфеля) проектов в организации и собственно управление ресурсами по портфелю проектов.

Как правило, в корпоративном управлении проектами выделяют шесть основных областей: оценка выгод по проектам; ранжирование и выбор проектов; управления коммуникациями между проектами; управления производительностью портфеля проектов; управления ресурсами портфеля проектов, а также собственное управление портфелем проектов. По мнению учёных и практиков, оценки выгод по проектам и ранжирование проектов на сегодня является наиболее полно проработанными и используемыми направлениями в организациях. В то же время, управление производительностью портфеля проектов и управления ресурсами портфеля проектов, наоборот, остаются наименее развитыми - как по методологии, так и по практике применения. Это делает тему исследования, отдельные аспекты которого, представлены в данной статье актуальной.

Постановка и решение задач управления ресурсами за портфелями проектов, как правило, исходят из того, что портфель является сформированным. В то же время, следует отметить, что подходы к собственно формированию портфелей (подпортфелей) могут существенно различаться, и, в многих случаях, указанное формирования носит ситуативный характер.

В работе предложена концепция комплексного формирования портфеля проектов в организации и управления использованием внутриорганизационных ресурсов в портфелях проектов при учёте неопределённости спроса на данные ресурсы. Дальнейшие исследования в контексте развития предлагаемой концепции требуют постановки и решения задач рационального распределения ресурсов в портфеле проектов, исходя из особенностей функционирования исследуемых объектов.

Результаты статьи могут быть использованы в дальнейших научных исследованиях.

КЛЮЧЕВЫЕ СЛОВА: УПРАВЛЕНИЕ, ПРОЕКТЫ, ПОРТФЕЛИ, ПОДПОРТФЕЛИ, РЕСУРСЫ, СПРОС.

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