PROJECT PORTFOLIO MANAGEMENT PROCESSES: SURVEY EVIDENCE FROM BULGARIAN PROJECT-ORIENTED ORGANIZATIONS

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Summary

The role of project portfolio management /PPM/ has substantially amplified in the conditions of contemporary globalized economy. The need for the optimal resource allocation and the efficient implementation of business processes has given rise to various practices of PPM in Bulgarian project-oriented organizations. The aim of this paper is to present the findings of a recent survey, showing evidence about the extent to which the major standard PPM processes are integrated and implemented by such organizations. Using an original research instrument, data about these processes has been provided through purposive sampling of organizations that apply PPM approach in their operations. The research findings prove to be valuable to managers of project-oriented organizations as far as the processes of major importance for PPM are identified in relation to the degree of its effectiveness. Processes identified as not yet fully developed are seen a substantial source and clear potential for future improvement of PPM and enhancing its effectiveness in Bulgarian organizations.

Key words: Project portfolio management; processes; project-oriented organizations; Bulgaria.

JEL: M19, O22.

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Introduction

The development of project management as a professional area within management practice is facilitated by the emergence and introduction of specific standards for its efficient implementation. The wide adoption of these standards is a result of a broad consensus among the professional community challenged

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by a range of identified needs, which encompass the following: the adoption of a unified terminology of project management; the clarification of the role and tasks of project managers in this rapidly developing profession; the formulation of general rules and requirements for the recruitment, enhancement of qualification and the disposal of project personnel, among other standards. Furthermore, the development of project management worldwide precipitated the implementation of a new approach – Project portfolio management (PPM). This approach focuses on the selection, prioritization, coordination, control, and balancing the projects in the organizational portfolio.

The management of a project portfolio is a complex activity requiring the assessment, selection, and synchronized execution of projects oriented to the implementation of the overall strategy of the organization (Alexandrova et al., 2016). In practice, project portfolio managers presumably perform three major tasks, involving the attempts to maximize the joint (synergic) results of the projects in the portfolio, ensure a balance of the portfolio along with minimization of portfolio risks, and bring the projects' aims in line with organizational strategy.

In real life, however, each organization chooses its own strategic alternative for action that leads to a specific (and often unique) pattern for PPM implementation – such that induces a substantial variation of the practices of PPM. At the same time, the world community of PPM experts has headed toward the unification and standardization of PPM processes. Specifically for the area of PPM, such an established international standard is "PMI Standard for Portfolio Management" developed by the Project Management Institute. This standard, which was revised in 2013, is based on a set of identified processes which require relevant knowledge, skills, tools and techniques necessary for the achievement of goals along with high efficiency of PPM (PMI, 2013).

The main processes defined in the standard – being in the focus of the current study – are grouped into three basic phases:

- Constitution/formation of the project portfolio (identification of projects for inclusion; categorization of projects; selection of projects);
- Execution of project portfolio (assessment of separate projects, definition of priorities (prioritization, evaluation of the portfolio as a whole, portfolio balancing);
- Update of project portfolio (monitoring and control of the portfolio, undertaking of corrective actions; review and reporting of results; implementation of strategic changes).

This article makes an overview of the empirical results from a recent survey conducted among 184 project-oriented organizations operating in Bulgaria. In this respect, the scope of the research is restricted to the specific country in which the evidence was gathered and the specific type of organizations that are target of the study. The author's expectations reflect one of the main goals of the survey,

namely, to provide unique information about the extent to which the major standard PPM processes are integrated and implemented currently by project-oriented organizations in Bulgaria.

Research thesis, objectives, and tasks

The analysis in this paper attempts to bridge the gap of PPM specialized literature and practice of PPM processes in Bulgarian project-oriented organizations. A systematic approach has been adopted in the study in order to gather evidence about the implementation of basic PPM processes, classified according to the PMI Standard for Portfolio Management. The research thesis asserts that the larger the extent of the spread of PPM processes, the higher the maturity of the project-oriented organization, and the higher the degree of effectiveness of the portfolio operation. The results from this study are expected to assist the work of project portfolio managers by gaining the benefits of PPM approach. In particular, the research goal is to identify the major processes implemented in practice towards the achievement of optimal resource allocation and the efficient execution of business processes. Its tasks are explorative and innovative in nature, as far as they should provide new and unique information about a specific professional work in project management in Bulgarian organizations.

Literature review

PPM approach has developed at as fast pace in the last decade triggered by real needs of business practice. This required an increased attention from specialized research in the area of project management. A general view on PPM emphasizes a sequence of processes involving selecting, prioritizing, and balancing the projects in the organizational portfolio. A major issue at stake is the constant pursuit for a match between portfolio features and organizational strategic goals. Special focus is put on the opportunities for gaining synergic effect achieved through an integrated management of the projects in the portfolio – which is not feasible if the projects were managed independently (LaBrosse, 2010).

The idea of constituting and managing a portfolio of projects relates to the general portfolio concept originating from Markowitz's financial theory of portfolio risk diversification and rational decision making. In project management this approach has been associated with the search for resources optimization and achievement of benefits through balancing of effectiveness and efficiency (Dye & Pennypacker, 1999). The specialized literature provides a variety of viewpoints on the processes and phases that PPM involves, however, there is a consensus on the main definition of PPM as a "*collection of projects, programs and other activities that are grouped together to meet strategic business objectives*" (PMI,

2013). Hence the Standard defines portfolio management practice as inherent to the strategic management of the organization whilst executing its strategic plan.

Systematizing different viewpoints and outlining the scope of PPM processes – which is closest to our view in this study – is provided by Project Management Institute: "*Project management process groups consist of initiating, planning, executing, monitoring and controlling, and closing processes (or 47 sub-processes), whereas the project portfolio management process groups consist of defining, aligning, authorizing, and controlling processes (or 16 sub-processes)"* (PMI, 2013). In this vein, any new project is evaluated, selected, and prioritized in the overall framework of the portfolio; at the same time, already selected (and currently executed) projects could be speeded up, canceled, or their priority level updated. As a result, operational resources could be restructured to support higher-priority projects (Alexandrova et al., 2016). This way, PPM decision making is defined as a dynamic and uncertain process that invariably involves a set opportunities related to strategic concerns, multiple criteria, and frequently contradicting stakeholders' interests (Alexandrova, 2016).

A major feature of PPM is the continuous character of its processes – which distinguishes PPM from the management of any particular project or programme. Similarly to the portfolio of financial assets (or business units), it involves taking permanent actions for selecting projects for execution by the organization, analyzing the portfolio characteristics, and updating the portfolio composition taking into account the strategic goals of the organization. These contemporary challenges of PPM require a new approach to the management of project teams as well as the evaluation of their results (Lambovska, 2013; 2014).

Some researchers of PPM highlight the processes of effective selection, prioritization, integration, and controlling in a multi-project environment (Young & Conboy, 2013). Other researchers are focused on the strategic issues of PPM as a dynamic process which requires a high degree of flexibility in order to adapt to stakeholders' prospects (Cooper, Edgett, & Kleinschmidt, 2001; Patanakul, 2015). An important aspect of the studies on PPM is the emphasis on a variety of factors on the organizational strategic processes. They require the identification of alternative portfolio outcomes in support of strategic decision making (Killen & Kjaer, 2012). Five phases of PPM processes have been identified: (i) portfolio inventory; (ii) portfolio analysis; (iii) portfolio planning; (iv) portfolio tracking; (v) review and re-planning (Levine, 2005).

The specialized literature provides also three process models of PPM and the first one is a core process model of PPM (Padovani & Carvalho, 2016). This model is defined as a "construct model" and is based on a more balanced view on the importance of various PPM processes. Padovani and Carvalho (2016) develop and validate the model through survey research. They assert the relation between PPM and organizational performance. Alternative models are mainly focused on

the project selection process. Such a model has been recently developed, it is based on the assumption of a three-stage selection of projects in the portfolio applying a "hybrid method". This process-based approach incorporates the "technique of order preference by similarity to ideal solution" (TOPSIS) and multiple criteria "data envelopment analysis" (DEA) to support effective decision making. The model encompasses the processes from the conception of project idea to the final step of project selection for the organizational portfolio (Tavana et al., 2015).

Even though there are concepts and models developed for PPM, its implementation in practice has not been examined in a comprehensive manner. This is especially valid not only for emerging economies worldwide but also for developed countries, even though the maturity of PPM processes is contingent on the experience and knowledge of the organization that implements them (Petrinska-Labudovikj, 2014). Empirical research of PPM practices are a new field of project management research in Bulgaria (Alexandrova et al., 2015) and the current study tries to fill the gap in this area.

Methodological approach

The analysis hereafter is based on data collected by a sample survey of 184 project-oriented organizations operating in Bulgaria in year 2017. Given that there is no specific register or other kind of statistical frame to facilitate a random drawing, respondents were selected by applying a purposive sampling scheme. A specifically designed questionnare was developed and used for the goals of the survey. It was sent out to 200 respondents – project management experts or project managers, project portfolio managers and representatives of the top management boards. The method of individual self-interview was applied by participation in an online survey or by submitting a filled questionnaire by email. Appropriate respondents have been reached using professional networks – LinkedIn, and Bulgarian Association for Project Management. All respondents have professional duties and competences in the area of project management performed in a multi-project environment. Moreover, some have taken on a key role in the management of a project portfolio operated by the respective organization. Due to substantial non-response, sixteen questionnaires were excluded from data processing and analysis. The primary data collected by the survey was processed and analysed by descriptive statistical methods.

Exploratory analysis

Profile of respondents

For each respondent a range of individual characteristics have been recorded (demographic and professional). A substantial share of them (over one third) indicated a long period of general work experience (over twenty years) and

about 11% declared just a recent experience (up to five years). The professional experience in project management has been identified by the number of years working in project management (project team member, project office expert, project manager, project portfolio manager). The major share (about 60%) is held by respondents with specific experience of 6 to 15 years (fig.1).

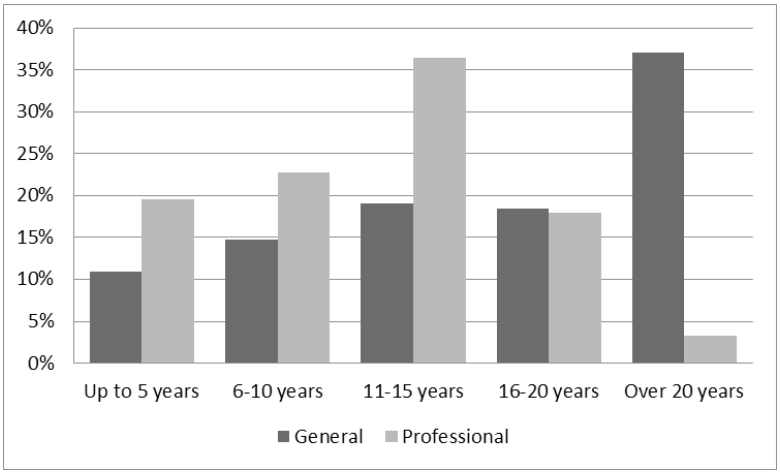

Figure 1. Distribution of respondents by their general experience and professional experience in project management (%)

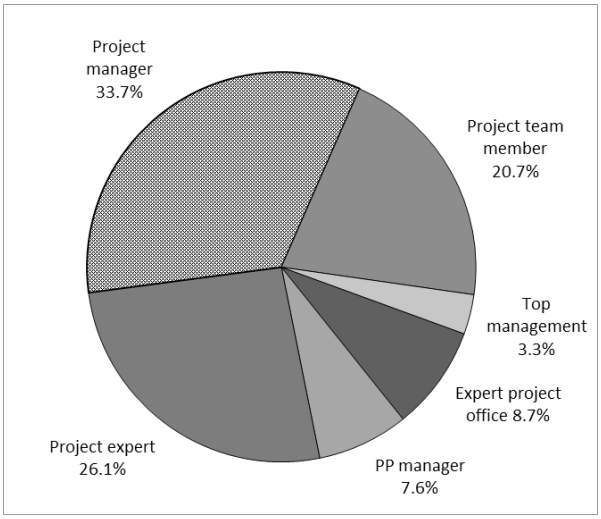

Figure 2. Distributions of respondents by position (%)

The correlation measured between the length of general and specific experience is quite high (+0,84) which shows that relatively high share of the general work experience of respondents is in fact specialized in project management area. One third of the respondents act as project managers in their organization – a position which holds the largest share in the sample (fig.2). About a quarter of the interviewed have project expert position, followed by members of project teams (21%), project office experts (9%), and project portfolio managers (8%). Albeit rarely, representatives of top management of project-oriented organisations (3%) have also participated in the survey.

Standardized PPM processes

The PMI Standard for Portfolio Management defines a set of standardized processes originating from five knowledge areas: (i) strategic management, (ii) governance management, (iii) performance management, (iv) communication management, and (v) risk management. The processes are generally outlined in the framework of two major groups (fig.3):

1. alignment process group – oriented towards constituting, managing, and optimizing the portfolio of projects at the organization;
2. controlling and reporting process group – targeted in the ongoing supervision of the portfolio, reporting of portfolio results, and justification of strategic shifts in the portfolio structure and composition.

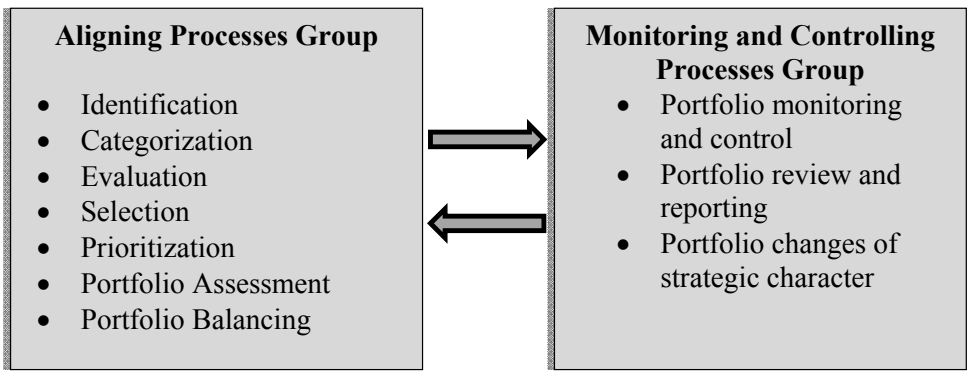

Figure 3. Groups of PMI Standardized Processes

Table 1. Implementation Extent of the spread of PPM processes as defined by PMI Standard for Portfolio Management (% of responses)

	Is there any PMI-standardized practice of a PPM process at your organization?	No	Partially	Yes
1	Identification of portfolio components (projects)	77,2	22,8	
2	Categorization of portfolio components	90,8	8,7	0,5
3	Selection of portfolio components	78,3	2,7	19,0
4	Evaluation of portfolio components	78,3	9,2	12,5
5	Prioritization of portfolio components	89,7	10,3	
6	Portfolio assessment	85,9	9,2	4,9
7	Portfolio balancing	90,2	9,8	
8	Portfolio monitoring and control	77,7	3,8	18,5
9	Portfolio review and reporting	79,3	15,8	4,9
10	Portfolio changes of strategic character	93,5	6,5	

A major issue addressed in the current study is related to PPM practices of implementation of PMI-standardized processes. A main research question here is "*How often are standardized PPM processes actually practiced by project-oriented organizations in Bulgaria?*" The respondents have been invited to share their opinion on the frequency of such practices with regard to the specific operations carried out by their organizations. The distribution of responses about each of the suggested processes is presented in Table 1.

Overall the findings expose a generally low extent of practicing the standardized processes as defined in PMI Standard for Portfolio Management. The most problematic areas where lack of practices of about 90% or more has been reported are as follows:

- portfolio changes of strategic character (93,5%);
- categorization of portfolio components (90,8%);
- portfolio balancing (90,2%);
- prioritization of portfolio components (89,7%).

In their operations, the Bulgarian project-oriented organizations still lack practices of categorization of portfolio components as well as actions targeted at portfolio balancing. These processes are somehow interrelated as far as the detailed classification of projects can assist the portfolio's proper balancing. A similar link was established between the other two rarely practices standardized

processes – prioritization of projects in the portfolio, related to strategic analysis and identification of the necessary portfolio changes that will maximize its correspondence to organizations' strategic goals. This is a fundamental priority defined by the international standard for PPM – any restructuring of the portfolio should contribute to the "strategic alignment" of the current trajectory of the organization's development. Bulgarian organizations are not yet fully aware of this principle in respect of the analysis of the various projects' goals and the identification of the needs for "strategic changes".

Though to a fairly low extent, other two processes show somewhat higher incidence of implementation in Bulgarian organizations. Such processes are the evaluation of portfolio components (practiced fully by 12.5% and partially by 9.2%) and the assessment of the portfolio as a whole (practiced by 14%, however, 9% only partially). This can be explained by an introduction of a system for internal evaluation and control of the projects in some of the Bulgarian project-oriented organizations. Still, quite a big share of respondents do not indicate any officially recognized current practices of these two processes.

According to the feedback from respondents, two major processes are introduced and implemented in a standardized way by about 23% of the organizations, namely the identification of projects (initially considered as appropriate for the organizational portfolio) and selection of projects into the portfolio (this fully practiced by 19% of the organizations). A similar situation was observed vis-a-vis the processes of monitoring and control (22%, of which 18.5% fully implemented) and portfolio review and reporting (21%, of which 16% only partially implemented). The review and reporting on separate projects has been found to be a normal practice. However, the reporting at portfolio level is yet to be advanced.

The findings of this survey provide grounds to assume that the spread of PPM international standards has already started, albeit at its initial phase. Obviously, the acquisition of organizational knowledge about these standards requires more time necessary for the generation of the respective human capital. Currently, the interest in the PPM standards is increasing due to expanded participation of Bulgarian project managers and experts in certification procedures.

Table 2. Dimensions of PPM effectiveness at the organization

	To what extent do you agree with each of the following statements about your organization?	Likert scale (1- fully disagree; 5- fully agree)				
1	Project portfolio is aimed in achieving sustainable financial results	1	2	3	4	5
2	Projects in the portfolio have goals that fully match the strategic goals of the organization	1	2	3	4	5
3	Organizational strategy is directly integrated into the project portfolio design	1	2	3	4	5
4	Resources allocation by projects is subjected to the strategic priorities of the organization	1	2	3	4	5
5	Project portfolio analysis supports the strategic perspective of the organizational activities	1	2	3	4	5

Table 3. Correlations between the extent of implementation of standardized PPM processes and overall effectiveness of PPM (Spearman rank correlations)

	Practices of standardized PPM process	Correlation
1	Identification of portfolio components (projects)	0,380
2	Categorization of portfolio components	0,362
3	Selection of portfolio components	0,337
4	Evaluation of portfolio components	0,299
5	Prioritization of portfolio components	0,404
6	Portfolio assessment	0,462
7	Portfolio balancing	0,413
8	Portfolio monitoring and control	0,360
9	Portfolio review and reporting	0,348
10	Portfolio changes of strategic character	0,316

For the purposes of this study it is important that the interrelations between the degree of implementation of PPM processes and the overall success of the organizational project portfolio are established. The assumption here is that the higher the extent, the higher the maturity of the project-oriented organization, and the higher the degree of effectiveness of the portfolio operation. In order to assess the effectiveness, a set of five items was suggested to the respondents who were expected to assess the degree of achievement along five dimensions (table 2). An overall variable that should capture the degree of effectiveness of PPM

was derived as an arithmetic average of the ranks that the respondents assigned to these dimensions.

Table 3 presents the Spearman rank correlation coefficients calculated between each of the "process implementation" variable and the aggregate score variable for the PPM effectiveness. The correlations seem to be quite low, which is attributed to the substantial dissimilarities of the PPM practices – and respondents' opinions on them – in organizations, depending on their specific profile and activities. A moderate degree of correlation (with coefficients between 0.3 and 0.7) was established at all of the processes, yet, some of them deserve particular attention. The highest results were observed with regard to the practices of prioritization, assessment, and balancing of the portfolio (Spearman rank correlation over 0.4). As a result, the conclusion was drawn that the recognition and implementation of these standard processes in the surveyed organizations ***is essential to the positive results*** indicated by the respondents on the dimensions of PPM effectiveness.

Conclusions

Implementation of PPM processes as a road to increasing the effectiveness of project portfolio management exposes the important role that the managerial system has with regard to responding to strategic business objectives. The current study sheds light on the recent practices of Bulgarian project-oriented organizations for applying 10 PMI Standard processes in the management of their project portfolios. It provides evidence for project portfolio managers suggesting that the intense implementation of these processes can act as a driver of the effectiveness of PPM activities. In order to improve their performance, project portfolio managers should acquire additional knowledge and skills relevant to the contemporary methodology for PPM. In this respect, it will be of particular help for them to focus more on: (1) the alignment of project portfolio operations to the strategic targets of the organization; (2) the analysis of the factors influencing the effectiveness of PPM; (3) the assessment of the results not only at project level but especially at the portfolio level, taking into account the strategic orientation.

A further study of the determinants of PMI effectiveness is yet another challenge for project management research in Bulgaria, and such research can presumably be supported by sound empirical evidence.

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