PROJECT PORTFOLIO SELECTION COMPETENCES RESEARCH IN UNIVERSITIES OF LITHUANIA

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─Abstract ─

As a result of the theoretical findings, the paper demonstrates that project portfolio selection is crucial project management problem. Successful Project Portfolio management requires specific competences. Every project of project portfolio must be evaluated according to the based criteria and parameters. Empirical study was based on framework matrix with four parameters of project portfolio selection and only two phases of project portfolio formation. The results of empirical study showed a different importance of competencies and their groups and their influence to project portfolio formation.

Keywords. *Project portfolio, Project portfolio management, Competences*.

JEL Classification: L21, M10, M12, M53.

1. INTRODUCTION

Strengthening competition in the market, globalization processes, development of economy based on knowledge and innovation, rising of consumer needs' importance and necessity to improve products' quality induce the organizations to transform from traditional management to project organizations.

Today mostly organizations are developed through the projects, became evident business strategies are being implemented successfully in the project-oriented organizations. Constantly changing environment, increasing competition and growing consumer demand leads to increasing projects number. Successful project portfolio management addresses to need specific competences to ensure successful project portfolio management (Harpham, Kippenberger, 2006:747; Mueller, Stawicki, 2006:225).

Project management competences lead to increase the organization capability to perform the project management process professionally. Project management competence requires project management knowledge as well as project management experience. Project portfolio management can be perceived as a purposefully based integration core competence of organizations management and project management. Project portfolio management competence creates a competitive advantage (Blanas, Iatridis, 2006:226; Acur, Kandemir, de Weerd-Nederhof , et al., 2010:921). Different project management competences models are widely presented in the scientific literature. Most of them can be developed and adapted for the project portfolio management. This notwithstanding project portfolio selection and its competencies issue is less studied.

The purpose of this paper is to study empirically universities project portfolio selection competencies on bases of analyze of theoretical findings on project portfolio management and project portfolio competences and to illustrate how the study results can be used to develop improving the project portfolio selection.

Research methodology. By scientific research on project portfolio management analysis, the paper examines theoretical portfolio concept, project management competences models, specifically regarding project portfolio selection paying attention to its competences. Pilot empirical research was conducted in some universities of Lithuania.

2. THEORETICAL APPROACH TO PROJECT PORTFOLIO SELECTION

2.1. Project portfolio selection.

Project portfolio selection is a crucial decision in modern advanced organizations. This issue is particularly important for varied activities of organization: R&D of new products, developing and implementing new systems, processes, engineering, providing intelligent services.

Often organizations implement not only single projects but few projects at the same time also. When organizations need to perform a complex of projects the need emerges to select well-balanced project portfolio. Archer, Ghasemzadeh (1999:207) describes project portfolio as group of the projects that is carried out under support and management. Project portfolio and organization strategy must be close in line due to the fact that project portfolio is focused to reach organization strategy (Patankul, Milosevic, 2009:217). Project portfolio management's purpose is to ensure the best combination of current and proposed projects in regarding with available resources. Project portfolio projects share and compete for scarce resources of organization (Meskendahl, 2010:807).

Successful project portfolio selection determines organization's structured approach to evaluating, selecting and prioritizing projects (Rajegopal, McGuin, Waller, 2007:10). Project portfolio selection is a strategic decision problem which is often characterized by multiple, conflicting and incommensurate objectives (Liesio, Mild, Salo, 2007:1490). Only properly selected criteria or methods are determining successful decisions of project portfolio selection (Ciutiene, Neverauskas, 2011:711). Project portfolio selection is complex and includes three phases - strategic consideration phase, individual project evaluation phase, portfolio selection phase; that could be performed at Company level, SBU level, Project portfolio level and Project level (Archer, Ghasemzadeh, 1999:208, 213, 2000:74; Gardiner, 2005:60). Every project of project portfolio is evaluated according to the based criteria and parameters.

2.2. Project portfolio management competences

Competency of project management could be described as ability of professional management of project management process (Huemann, 2006:136). Project management competencies become decisive competencies of organization, therefore more and more organizations are investing in management knowledge,

experience and abilities (Carden, Egan 2008:320; Turner 2003:328) and this allows organizations to manage project portfolio significantly efficiently (Ciutienė, Neverauskas, Venclauskas, 2007:559; Crawford, 2007:190).

Studies on project management competencies usually are oriented towards analysis of competence of single project management (Patanakul and Milosevic, 2008:122). Furthermore, the scientific studies researching project management competencies usually are using prevailing models of project management competence that are based on knowledge fields distinguished by PMI *(PMBOK Guide)*. American Society for the Advancement of Project Management (*Asapm*) developed a model of project management competencies where competencies are divided to *essential, technical and behavioral* competencies. Boston University Corporate Education Center proposed a model of competencies required for successful project management and implementation where competencies are divided into three groups: Technical, Personal and Business and Leadership. In the models mentioned only the competencies important to process of project portfolio formation are not distinguished clearly.

An important role in formation of project portfolio plays a proper selection and evaluation of parameters of project portfolio selection. Bai, Li, Feng and Guo (2010) are proposing to use parameters of Balanced Scorecard (BSC) system for project portfolio selection: *contribution to organization value, meet customer needs, internal process, organization learning and innovation*. In our opinion, competencies of project portfolio selection have to be oriented towards evaluation of these parameters.

2.3 Project portfolio selection competences theoretical framework

Due theoretical analysis of project portfolio selection and project management competencies, theoretical project portfolio selection competencies theoretical framework (table 1) was formulated in order to perform a pilot research. Framework matrix includes four parameters of project portfolio selection and only two phases of project portfolio formation selected to perform a pilot research: strategic consideration and individual project evaluation phases.

Efficiency of parameter application was approved in business practice. Because public sector becomes more and more similar to business sector (Gill, 2009:22), the assumption is made that (BSC) could be successfully used in universities' project portfolio selection competencies study as well.

Table 1. Project portfolio selection competences theoretical framework

No.	*Parameter*	*Competences*	
		Strategic consideration phase	*Individual project evaluation phase*
1	Contribution to organization value		
2	Meet customer need		
3	Internal process		
4	Organization learning and innovation		

3. EMPIRICAL STUDY

3.1. Research methodology

According to the formulated Project portfolio selection competences theoretical framework the study of project portfolio selection competencies was performed in the universities of Lithuania. Identified competencies and their groups were given weight rates.

Experts were selected for the empirical study activity of whose is related to the project portfolio selection in universities of Lithuania. More than 80 percent of the experts have an experience of working with projects exceeding 10 years, and their qualification and practical experience allow them to be treated as qualified experts of evaluation of project portfolio formation competencies.

A questionnaire based on Project portfolio selection competences theoretical framework was created for questioning of experts. Close questions were used. Experts valuated competencies in the system of five points. The competency having the biggest influence to project formation was evaluated at 5 points and those having the least influence got 1 point.

Data of questionnaire were processed and analyzed by using statistical package of data analysis SPSS 14 and program package Microsoft Excel.

Table 2. Table of analysis data of expert valuation

Competency groups / Expert	1	2	...	i	..	n
1	X_{11}	X_{12}	...	X_{1i}		X_{1n}
...	..	...	...	..	...	..
j	Xj_1	X_{j2}	...	X_{ji}		X_{jn}
...			...			
m	X_{m1}	X_{m2}	...	X_{mi}		X_{mn}
Statistical media $\bar{s}$						
Kendal concordantion rate W						
p meaning						
Weight rate						

Conjunction of opinions of experts participating the questioning was evaluated by Kendal concordantion rate *W.* Data of expert valuations are presented in the Table 2.

Number $X_{ji\ s}$ shows what evaluation was given by expert *j* to project portfolio formation competence *i*. Weight rates were calculated for project portfolio formation competencies and their groups. The closer the meaning of weight rate is to 1, the more important is the competence.

3.2. Empirical research Results

Valuating conjunctions of expert opinions the Kendal concordantion rates W_i characterizing project portfolio formation competencies and their groups are presented in the Table 3.

Table 3. Kendal concordantion rates W_i for project portfolio formation competencies and their groups

Groups of inter-comparable competency	W	*p* meaning	Notes
Contribution to organization value	0,470	0,000 (<0,05)	Experts valuated competency groups compatibly enough.
Meet customer need	0,244	0,002 (<0,05)	Opinion of experts concurred statistically reliably though weakly.
Internal process	0,497	0,000 (<0,05)	Experts valuated competency groups compatibly enough.
Organization learning and innovation	0,424	0,000 (<0,05)	Experts valuated competency groups compatibly enough.

In order to evaluate an inner consistency of the questionnaire scale (inner consistency or expert values) Cronbach alpha rate was calculated. Cronbach alpha rate for expert evaluation of the questionnaire is equal 0,63, which confirms acceptable inter-homogeneity of expert evaluation and reliability of the questionnaire.

Analysis of expert evaluation results allowed evaluating the influence of project portfolio selection competencies to general university's project portfolio selection on strategic consideration and individual Project evaluation phases (Table 4).

Expert evaluation confirmed a different importance of competencies and their groups and their influence to project portfolio formation in Lithuanian high schools.

Analysis of expert evaluation results revealed a different effect of four parameters valuated to project portfolio selection competences in different phases. On the level (phase) strategic consideration the highest influence of four parameters has „Contribution to organization value"(0,361), and the least influence has

„Organization learning and innovation“(0,171). Expert opinion regarding the competencies group „Contribution to organization value“ statistically coincided reliably.

Table 4. Weight rates of project portfolio formation competencies and their groups

Parameter	*Competences*			
	Strategic consideration phase		*Individual project evaluation phase*	
Contribution to organization value		**0,361**		**0,223**
	Ability to reach implementation of organization's goals through projects	0,313	Knowing and perception of organization's strategy	0,453
	Project goals conformity to organization's strategy	0,260	Implementation of organization's mission using the project	0,273
	Perception of evaluation of benefit created by projects to organization	0,234	Clear perception of synergy between organization and project	0,274
	Perception of organization's project management policy and valuable	0,193		
Meet customer need		**0,207**		**0,207**
	Ability to identify problems of organization	0,468	Ability for clear determination of purposive group	0,260
	Insurance that results of projects created for purposive group are beneficial to organization	0,532	Identification and satisfaction of expectations of purposive group by project results	0,234
			Satisfaction of expectations of purposive group by project results	0,313
			Ability to ensure the purposive group will be using project results	0,193
Internal process		**0,261**		**0,329**
	Standardization of implementation of projects	0,103	Ability to plan project in respect to time, costs and quality	0,092
	Perception of technical and financial procedures of organization's project management	0,261	Identification of risk factors and means for their elimination	0,095
	Creation of motivation system for project team members	0,223	Identification of project manager's role and functions	0,137
	Determination of procedures of project teams selection	0,111	Efficient organization of work of project team	0,199
	Creation of communication system betwee organization and projects	0,207	Distribution of function of project team members	0,171
	Creation (perception) of scheme of sharing of good experience	0,095	Identification of competences required of every project team member	0,092
			Creation of communication system between project team members	0,085
			Knowing of procedures of implementation of	0,129

In the meantime parameters' influence factors on the level (phase) "individual project evaluation"differ in comparison with aforesaid level (phase) as parameters' weight ratios less distinct. The parameter (competencies group) "internal process" characterize with the highest rank (0,329), in comparison with lowest characteristic of parameter "meet customer need" (0,207). Expert opinion regarding the competencies group „Internal process"coincided statistically reliably though weakly.

Full-scale characteristics of project portfolio selection competences are presented in table 4.

Compact analyze results' of the study project portfolio selection competences addresses universities to concentrate efforts for purposeful developing project portfolio selection competences.

4. CONCLUSION

Progressive organizations seeking to improve their business competitiveness due unambiguously focusing on project management. Advanced project based organization management is close to Project portfolio management. Effective Project portfolio selection and management is impossible without required combination of competencies.

Project portfolio selection competencies are essential for universities offering intelligent services too.

Results of empirical study project portfolio selection competencies uncovered significance of theirs impact for project portfolio selection issues. Main attention on strategic consideration phase must be paid to contribution to organization value. Competencies on the level of individual Project evaluation phase are under substantial influence of internal process.

Theoretical and empirical studies of project portfolio selection competences issues are purposeful to continue in universities in evaluating competencies at all project portfolio selection phases etc.

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