

Project portfolio management in a company strategy implementation, a case study

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Abstract

The aim of this study is to investigate the effectiveness of the project portfolio management in different business organizations. Project portfolio management is seen as a holistic activity, dependent on the organization's strategy. This study aims to determine how the project portfolio decisions are made and how the project portfolio is managed. Also other organizational factors which may affect the efficiency of project portfolio will be considered. In this study, research method was case study carried out in business organizations. The study showed interconnection between company strategy, project portfolio and projects in process and practice. The results indicate that project portfolio management is, however, facing people challenges in managing project portfolio.

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1. Introduction

Nowadays organizations face challenges in their environment and organizations are changing. Companies need efficient strategy processes in this changing world. A part of this strategy process is a company strategy implementation. The effective company strategy implementation has addressed the increasing importance of project portfolio management.

Strategy formulating means developing a broad formula for how a business is going to compete, what its goals (mission or objective) should be, and what policies will be needed to carry out these goals (Porter, 1980). Kaplan and Norton (2001) formulated the balanced scorecard including four perspectives for translating a strategy into action. Portfolio management is the coordinated management of one or more portfolios to achieve organizational strategies and objectives. The ultimate goal of linking portfolio management with organizational strategy is to establish a balanced, executable plan that will help the organization achieve its goals. A portfolio has relationships with its components, projects (PPM, 2013). There is simply no way for senior management to accomplish a strategic transformation without getting deeply engaged in project management. Unfortunately, most executives and strategic thinkers have not yet learned the language of project management (Morgan et al., 2007).

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Company organizations are ranging in structures from functional organizations to projectized organizations (PMBOK, 2013). In projectized organizations (or project teams) most of the organizational resources are involved in the project work. Matrix organizations are a blend of functional and projectized organizations. Many organizations involve all these structures at various levels. Within organizations, companies have organized project offices which specialize in managing projects more effectively (Bridges and Crawford, 2000). Koh and Crawford (2012) indicated that portfolio managers had similar roles. Martinsuo (2012) pointed out that despite the quite obvious linkages between, e.g., project selection and managers' interaction, or project portfolios and project offices, the behavioral and organizational viewpoints have received far too little attention and may well explain some of the problems in achieving PPM (project portfolio management) success. Muller and Turner (2010) stated in their theoretical implications that transactional leadership, and concern for process, is more important on relatively simple projects, but transformational leadership, and concern for people, is necessary on more-demanding projects. Kissi et al., (2013) examined the role of transformational leadership of portfolio managers in project performance. Transformational leadership behavior of project portfolio managers was found to have a positive and significant relationship with project performance.

The literature review indicated the gap in knowledge concerning the project portfolio management effectiveness and the company strategy implementation in different business organizations. This paper aims to partly fulfil this gap by presenting results from a case study made on business organizations. This paper is organized as follows. First, a literature review and the purpose of this paper are presented. Then, the key results of the case study are presented and discussed. The results are also compared with previous results presented in the literature review. Finally, the paper concludes with a brief summary of the main findings and some of their implications.

2. Literature review

The research addressing the project portfolio management effectiveness in a company strategy implementation in different business organizations includes in this paper the following aspects of interest: 1) project portfolio management in strategy implementation, 2) organizational context in project portfolio management, 3) leadership ability. The following review of previous research on these aspects indicates the current state of knowledge and the gaps in knowledge concerning project portfolio management in a company strategy implementation in different organizational context.

2.1. Project portfolio management in strategy implementation

There is simply no way for senior management to accomplish a strategic transformation without getting deeply engaged in project management. Unfortunately, most executives and strategic thinkers have not yet learned the language of project management (Morgan et al., 2007). In Porter's (1980) classic approach to formulating strategy was stated that developing a competitive strategy is developing a broad formula for how a business is going to compete, what its goals (mission or objective) should be, and what policies will be needed to carry out these goals. Kaplan and Norton formulated the balanced scorecard including four perspectives: financial, customer, internal and learning and growth. A strategy map for a balanced scorecard describes the process for transforming intangible assets into tangible customer and financial outcomes. A balanced scorecard strategy map describes the strategy (Kaplan and Norton, 2001). Porter (2008) in describing "What is strategy?" used activity-system maps.

Portfolio management is the coordinated management of one or more portfolios to achieve organizational strategies and objectives. It includes interrelated organizational processes by which an organization evaluates, selects, prioritizes, and allocates its limited resources to best accomplish organizational strategies consistent with its vision, mission and values. Portfolio management produces valuable information to support or alter organizational strategies and investment decisions. The attributes of portfolio components are further differentiated by The Standard for Portfolio Management (PPM, 2013).

The ultimate goal of linking portfolio management with organizational strategy is to establish a balanced, executable plan that will help the organization achieve its goals. The impact of the portfolio plan upon strategy is attained by the six areas: maintaining portfolio alignment to strategic objectives, allocating financial resources, allocating human resources, allocating material or equipment resources, measuring portfolio component performance and managing risks (PPM, 2013). A portfolio has relationships with its components, projects. Project management has five process groups: initiating, planning, executing, monitoring and controlling, and closing (PMBOK, 2013). Managing a project typically includes: Identifying requirements; Addressing the various needs, concerns, and expectations of the stakeholder, as the project is planned and carried out; Setting

and maintaining active communication with stakeholders; Balancing the competing project constraints, which includes, but is not limited to: scope, quality, schedule, budget, resources, and risk (PPM, 2013).

Portfolio management is a continuous process (while project management has a scheduled start and end). The purpose is to integrate portfolio management process activities to those other organization processes like annual planning or strategic review with quarterly or weekly updates. Sanchez and Benoit (2010) present in their article an approach to developing key strategic performance indicators for project portfolios. They noted that it is difficult to find indicators for measuring the achievement of objectives, the progress of project portfolios. Teller et al., (2012) show in their study that both single project management and project portfolio management formalization are directly connected to portfolio success.

2.2. Organizational context in project portfolio management

Company organizations are ranging in structures from the functional organizations to the projectized organizations (PMBOK). In projectized organizations (or project teams) most of the organizational resources are involved in the project work. Matrix organizations are a blend of functional and projectized organizations. Many organizations involve all these structures at various levels. Most organizations in the multi-project context are matrix organizations. In (semi-) project driven organizations a standing committee can be effective instrument for coordination among parallel projects (De Boer, 1998). Within organizations, companies have organized project offices which specialize in managing projects more effectively (Bridges and Crawford, 2000). Unger et al. (2012) show a significant positive effect of project portfolio management office's coordinating and controlling roles on performance in terms of project portfolio management quality, which is a predictor of portfolio success. Koh and Crawford (2012) indicated each portfolio manager has similar roles: involved in strategic business planning, ensured that projects were carried out in time, budget and scope, managed risks, and made projects reviews, coaching, issue handling, and corporate process improvement after the project. Operations management is responsible for overseeing, directing, and controlling business operations. Operations evolve to support the day-to-day business, and are necessary to achieve strategic and tactical goals of the business. Projects can help achieve organizational goals when they are aligned with the organizational strategy. Organizational strategy should provide guidance and direction to project management. Often it is the project sponsor or the portfolio manager who identifies alignment or potential conflicts between organizational strategies and project goals and then communicates these to the project manager (PMBOK, 2013).

Organizations focus to get their unique business value for their activities. Business value is defined as the entire value of the business. Business value can be determined short-, medium, or long-term. In order to bridge the gap between organizational strategy and successful business value realization, the use of portfolio, program, and project management techniques are essential. Portfolio management aligns components (projects, programs, or operations) to the organizational strategy, organized into portfolios or sub-portfolios to optimize project or program objectives, dependencies, costs, timelines, benefits, resources, and risks (PMBOK, 2013).

2.3 Leadership ability

Research and experience indicated that the support of the upper management is critical to project success. Englund and Graham (1999) discussed practices for upper management teamwork and they offer a model for selecting projects that support strategic emphases. Their experiences are from a company case. In the general management literature, has shown that an appropriate leadership style can lead to better performance. Turner and Muller (2005) mention, surprisingly, the literature on project success factors does not typically mention the project manager and his or her leadership style or competence as a success factor of projects. Morris and Jamieson (2005) concluded, that although project strategy management is an underexplored and insufficiently described subject in the business and project literature, it is, a relatively well-trodden area, deserving of more recognition, formal study, and discussion. Patanakul and Shenhar (2011) emphasize the importance of strategic project management. Project management teams must learn how to deal with the business aspects of their projects, as well as better support their company's business strategy sustainability, rather than just focus on meeting the traditional time, budget, and performance goals. The leadership ability and the characteristics of the effective project management have been studied by Hyväri (2006). Martinsuo (2012) noted, that despite the quite obvious linkages between, e.g., project selection and managers' interaction, or project portfolios and project offices, the behavioral and organizational viewpoints have received far too little attention and may well explain some of the problems in achieving PPM (project portfolio management) success. Huemann (2010) in her finding indicate that in a project-oriented company Human Resource Management also needs to change from an administration function to become a proactive business partner supporting project-oriented management. The human resource management as a part of the company portfolio and project management plan includes roles and

responsibilities, organization charts, staffing management plan (PMBOK, 2013).

Team literature emerged at the end of 1980's partly inspired by project management. Team building involves a whole spectrum of management skills required to identify, commit, and integrate various task groups from traditional functional organizations into multidisciplinary task/management systems. Tuckman (1965) created a global model of group development. The later version of the adjusted model holds five phases of development that group has to go through: forming, storming, norming, performing and adjourning (Hohn, 1999). Dwidudula and Bredillet (2010) concluded, that the multidimensional nature of work motivation reveal that initiatives directed towards empowering the employee, providing a motivating work environment, challenging and interesting nature of work, formal and informal communication, and job security significantly explain work motivation in a project context. The success of managers in managing their teams depends a great deal on their ability to resolve conflicts. Most often used interpersonal skills used by project manager include: leadership, influencing and effective decision making (PMBOK, 2013). The importance of communication management and risk management are described in PMBOK (2013).

Theories of transformational or inspirational leadership were based on ideas of Burns (1978). The later theory version was formulated by Bass (1985, 1996). The essence of the theory is the distinction between transformational and transactional leadership (Yukl, 2002). Muller and Turner (2010) stated in their theoretical implications that transactional leadership, and concern for process, is more important on relatively simple projects, but transformational leadership, and concern for people, is necessary on more-demanding projects. Kissi et al., (2013) examined the role of transformational leadership of portfolio managers in project performance. Transformational leadership behavior of project portfolio managers was found to have a positive and significant relationship with project performance.

In conclusion, the research review reveals that there is a gap in research of project portfolio management in a company strategy implementation. There is not enough knowledge about the interconnection between company strategy, project portfolio and projects. The results indicate that there is an evident need to analyze leadership ability in project portfolio management.

The purpose of this study is to investigate and analyze the state and significance of the project portfolio management in a company strategy implementation. This study aims to determine how the project portfolio decisions are made and how the project portfolio is managed. Also other organizational factors which may affect the efficiency of project portfolio will be considered. The aim of this study is to investigate the effectiveness of the project portfolio management in different business organizations.

3. Research method and data

3.1. Case study

In this empirical part the project portfolio management in a company strategy implementation was described and analyzed. The aim of this case study was to investigate the effectiveness of the project portfolio management in different business organizations. This study aims to determine how the project portfolio decisions are made and how the project portfolio is managed. Also other organizational factors which may affect the efficiency of the project portfolio will be considered.

The case study (Yin 1989, 2009 and Scapens, 1990) was chosen for the reason that, to understand the project portfolio processes and practices, one needs depth and intensive research method. The case study method is generally considered to fit the research of complicated phenomena in their practical settings. Complicated, in this context, means that there is only a little explanatory theory and how the phenomenon and its practical settings interact is inadequately known. The goal of the case research is not quantification or even enumeration, but rather description, classification, theory development, and limited theory testing. In a word, the goal is in understanding. Case research is resource and time consuming, and it means limits for research objectives.

This case study can mainly be classified as descriptive, exploratory research. The objective of the research is to provide information concerning the nature and form of existing practices (Scapens, 1990). The study is made from the business management and holistic point of view, where the social system is viewed as a whole and it is not suitable to research the quality of the system without participating people. In the holistic system, the researcher is in that whole which is researched. To assess the validity and reliability of the research, evidence was collected from multiple sources (triangulation) (Yin 1989, 2009). Validity means the ability of the measurement to measure what is meant to measure. Reliability in case research is understood as the requirement

of replication in analysis. The reliability of measurement means replication of measurement, not random.

3.2. Data collection

The case study focused on a medium sized business company. The structure of this company was the Group Company: a parent and subsidiaries in different European countries. In the empirical part of this study, the project portfolio management in a company strategy implementation was chosen. This case study was carried between March 2011 and December 2012. The research material for this case study consists of interviews, participant-observation, researcher's own familiarity with the company, and written documents (triangulation). In addition, the researcher has worked in financial departments and in project management.

4. Case study findings

4.1. Company strategy and project portfolio management

In this case study, the company started their strategy process by developing and updating their mission, vision, and values. The strategy levels were: Group, business areas, and functions. The strategy process is yearly process, starting in January. The strategy period is three years. The strategic plan for business areas, functions, and/or company level was developed according to Group's strategy goals. This strategic plan had four perspectives: financial, customer, internal business processes and learning and growth. These were translated to the strategy maps, using steps, strategy objectives, setting targets (Key Performance Indicators), identifying measurement criteria and developing strategy initiatives and their causal relationships. The company used Balanced Scorecard methodology (Kaplan and Norton, 2001). The strategy map was a tool to manage and communicate the strategic objectives. The strategy status, project portfolio, reporting used the strategy plan and map as a basic information in coordinating and communicating the strategy implementation.

The portfolio management plan was established for managing the portfolio and strategic change. The project portfolio consisted projects and other related work in strategic implementation. These projects move the organization towards its mission and vision. Selection of projects to the portfolio was made on the basis of four perspectives, strategic objectives. The portfolio and project's business benefit evaluation and success measurement was done with the help of balanced score card. The portfolio implementation was a continuous process. In changing environments portfolios have a business scope that changes with strategic goals of the organizations. After decision if an assignment or work must be treated as a project, the project were classified. Projects of the project portfolio were prioritized on the basis of their strategic significance, financial benefit, project types, project complexity, risk level, and resource needs (finance, human, material, equipment). The Group and companies own budget and resources were also defining the limit for this portfolio. All projects were classified and the project's implementation organization (from simple to complicate) varied depending on the classification. Projects needed an execution decision, a separate acceptance according to the group's approval policy, before implementation. The portfolio management is ongoing process. The purpose of the portfolio management is to maximize the return on investment of the portfolio and projects.

The leadership must be active and organize constant reviews and supporters to ensure clear communication, removal of barriers, and adequate resources. This case study organization used software model for project and portfolio reporting for different levels in organization, from the board of directors' level to the project team member level. The model included for example key information, project classification, risk evaluation, project portfolio plan and charter, budgeting and control, progress reports, resource reports, evaluation information, project cash flow and investment decision information, and final reporting. The data updating and reporting was made according to the users' needs. The reporting period varied from week to year(s). For the project portfolio team reporting period was once a month.

4.2. Organizing project portfolio management, leadership ability

In this case study, in the Group of companies, the portfolio management team was responsible for deciding which projects to implement. The portfolio management team was the Group level senior management team. This senior management team included directors of business areas, directors of functions and Group CEO. The basic organization was the matrix-organization. The project portfolio management team was responsible for maximizing the return on investment of the project portfolio according to the strategy. They organized decisions of projects to implement and ensured resources. In this study, in this group, was one portfolio for companies' all projects. Project portfolio management team members had business responsibility according to their permanent (matrix) organization.

According to PPM (2013) attributes of portfolio components can be further differentiated as follows: 1) Portfolios have an organizational scope that changes with the strategic objectives of the organization. 2) Portfolio managers continuously monitor changes in the broader internal and external environment. 3) Portfolio managers create and maintain necessary processes and communication relative to the aggregate portfolio. 4) Portfolio managers may manage or coordinate portfolio management staff, or program and project staff that may have reporting responsibilities into the aggregate portfolio. 5) Success is measured in terms of aggregate investment performance and benefit realization of the portfolio. 6) Portfolio managers monitor strategic changes and aggregate resource allocation, performance results, and risk of the portfolio. In this case company these attributes of portfolio components were also managed. The project portfolio team and the project portfolio manager were responsible for portfolio management.

In this case company, project portfolio management office work was done by the project portfolio manager, who was a member of the project portfolio management team. The project portfolio manager gathered information on projects, summarized the projects (project portfolio) progress, supported project managers, developed project management practices and processes and communicated project results and lessons for future project work. As like in this case company, Koh and Crawford (2012) indicated that portfolio managers had similar roles. Patanakul and Shenhar (2011) emphasized that the project management teams must learn how to deal with the business aspects of their projects.

In the project management level, the project owner was a member of the project portfolio management team. He or she was most interested in utilizing the business benefits of the project. The project owner was the chairman of the project steering group. The project's steering group consisted at least of the project owner and the project manager. The project manager reported to the project owner and the steering group. The project manager was responsible for managing the project according to the approved project plan. The project group (group members) was responsible of the project work to the project manager.

The permanent organization (matrix) organization managers approved the resources of their responsible area and ensured that resources are available when needed for the project. Human resource Management (HRM) was an administration function. The portfolio management team reported that HRM should have had more supporting and coaching role than it now has. This finding was also this same according to Huemann (2010). In this case, HRM had described roles and responsibilities plans, organization charts, and staffing management plans, as was explained also in the previous literature (PMBOK, 2013).

In the previous literature was discussed of the team building (Hohn, 1999, and Tuckman, 1965) and multidimensional nature of work motivation (Dwivedula and Bredillet, 2010). In this case study, the portfolio management team and project portfolio manager reported that they were motivated, they felt enough inspiration, and communication was sufficient. They felt that their reporting system was a good tool. The people inside the business areas and functions reported need for more ongoing dialogue, communication and coordination during the strategy implementation. They would be more motivated and inspired if they could have more possibilities to participate in the strategy process. The company had organized training in project management and working in teams for portfolio team members, and project teams. They did not face conflict situations or these were handled so that they did not cause problems. According to Bass (1985) transformational leadership increases follower motivation and performance more than transactional leadership, but effective leaders use a combination of both types of leadership (Bass, 1985 and Yukl, 2002). In this case study organization was addressed concern for process and practices and concern for people.

5. Summary and conclusions

In this case study, the Group of companies started their strategy process by developing and updating their strategy, mission, vision, and values. The strategic plan for business areas, functions, and/or company level was developed according to Group's strategy goals. This strategic plan had four perspectives: financial, customer, internal business processes and learning and growth. The portfolio management plan and map was established for managing the portfolio and strategic change. The project portfolio consisted projects and other related work in strategic implementation. These projects move the organization towards its mission and vision. Projects of the project portfolio were prioritized on the basis of their strategic significance, financial benefit, project types, project complexity, risk level, and resource needs (finance, human, material, equipment). Projects needed an execution decision, a separate acceptance according to the group's approval policy, before implementation. The portfolio management is ongoing process. The purpose of the portfolio management is to maximize the return on investment of the portfolio and projects.

In this case study, in the Group of companies, the portfolio management team was responsible for deciding which projects to implement. Project portfolio management office work was done by the project portfolio manager, who was a member of the project portfolio management team. The project portfolio manager gathered information on projects, summarized the projects (project portfolio) progress, supported project managers, developed project management practices and processes and communicated project results and lessons for future project work. These results were consistent with previous study (Koh and Crawford, 2012). The permanent organization (matrix) organization managers approved the resources of their responsible area and ensured that resources were available when needed for the project. Human resource Management (HRM) was an administration function. The portfolio management team reported that HRM should have had more supporting and coaching role than it now has. This finding was also this same according to Huemann (2010).

In this case study, the portfolio management team and project portfolio manager reported that they were motivated, they felt enough inspiration, and communication was sufficient. They felt that their reporting system was a good tool. The people inside the business areas and functions reported need for more ongoing dialogue, communication and coordination during the strategy implementation. They would be more motivated and inspired if they have more possibilities to participate in the strategy process. The company had organized training in project management and working in teams for portfolio team members, and project teams. They did not face conflict situations or these were handled so that they did not cause problems. According to Bass (1985) transformational leadership increases follower motivation and performance more than transactional leadership, but effective leaders use a combination of both types of leadership (Bass, 1985 and Yukl, 2002). In this case study organization was present concern for process and practices and concern for people.

The study showed interconnection between company strategy, project portfolio and projects in process and practice. The results indicate that project portfolio management is, however, facing people challenges in managing project portfolio. These findings can be used in further studies and also in the practice to improve the effectiveness of the project portfolio management.

References

- Bass, B.M. (1985), *Leadership and performance beyond expectations*, Free Press, New York.
- Bass, B.M. (1996), *A new paradigm of leadership: An inquiry into transformational leadership*, U.S Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA.
- Bridges, D. and Crawford, K. (2000), "How to start up and roll out a project office", *Presented at a PMI symposium*, Houston, Texas.
- Burns, J.M. (1978), *Leadership*, Harper & Row, New York.
- De Boer, R. (1998), *Resource-constrained multi-project management. A hierarchical decision support system*, Ph.D Thesis, University Twente.
- Dwivedula, R. and Bredillet, C.N. (2010), "Profiling work motivation of project workers", *International Journal of Project Management*, Vol. 28, pp.158-165.
- Englund, R.L and Graham, R.J (1999), "From Experience: Linking Projects to Strategy", *Journal of Product Innovation Management*, Vol.16, pp. 52-64.
- Hohn, H.D. (1999), *Playing, Leadership and Team Development in Innovative Teams*, Ph.D. Thesis, Technical University Delft.
- Huemann, M. (2010), "Considering Human Resource Management when developing a project-oriented company: Case study of a telecommunication company", *International Journal of Project Management*, Vol. 28, pp. 361-369.
- Hyvärinen, I. (2006), "Project management effectiveness in project-oriented business organizations", *International Journal of Project Management*, Vol. 24 No. 3, pp. 216-225.
- Kaplan, R.S. and Norton D.P. (2001), *The strategy-focused organization: how balanced scorecard companies thrive in the new business environment*, Harvard Business School Publishing Corporation.
- Koh, A. and Crawford, L. (2012), "Portfolio Management: The Australian Experience", *Project Management Journal*, Vol. 43 No. 6, pp. 33-42.
- Kissi, J., Dainty, A. and Tuuli, M. (2013), "Examining the role of transformational leadership of portfolio managers in project performance", *International Journal of Project Management*, Vol. 31, pp. 485-497.
- Martinsuo, M. (2012), "Project portfolio management in practice and in context", *International Journal of Project Management*, <http://dx.doi.org/10.1016/j.ijproman.2012.10.013>.
- Morgan, M., Levitt, R.E. and Malek, W. (2007), *Executing your strategy, how to break it down and get it done*, Harvard Business School Press.
- Morris, P.M.G. and Jameson, A. (2005), "Moving From Corporate Strategy to Project Strategy", *Project Management Journal*, Vol. 36 No. 4, pp. 5-18.
- Müller, R. and Turner, R. (2010), "Leadership competency profiles of successful project managers", *International Journal of Project Management*, Vol. 28, pp. 437-448.
- Patanakul, P. and Shenhar, A.J. (2012), "What Project Strategy Really Is: The Fundamental Building Block in Strategic Project Management", *Project Management Journal*, Vol. 43 No. 1, pp. 4-20.
- Porter, M.E. (1980), *Competitive strategy. Techniques for analyzing industries and competitors*, The Free Press.
- Porter, M.E. (2008), *On competition*, Updated and expanded edition, A Harvard Business Review Book series.
- Project Management Institute (2013), *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*, 5th edition, Project Management Institute, Newtown Square, PA.
- Project Management Institute (2013), *The Standard for Portfolio Management, (PPM)*, 3th edition, Project Management Institute, Newtown Square, PA.

- Sanchez, H. and Benoit, R. (2010), "Measuring portfolio strategic performance using key performance indicators", *Project Management Journal*, Vol. 41 No. 5, pp.64-73.
- Scapens, R.W. (1990), "Research management accounting practice. The role of case study methods", *British Accounting Review*, Vol. 22, pp. 259-281.
- Teller, J., Unger, B.N., Kock, A. and Gemünden, H.G. (2012), "Formalization of project portfolio management: The moderating role of project portfolio complexity", *International Journal of Project Management*, Vol. 30, pp. 596–607.
- Tuckman, B.W. (1965), "Developmental sequence in small groups", *Psychological Bulletin*, Vol. 63, pp. 384-399.
- Turner, J.R. and Muller, R. (2005), "The project manager's leadership style as a success factor on projects: a literature review", *Project Management Journal*, Vol. 36 No.2, pp.49-61.
- Unger, B.N., Gemünden, H.G and Aubry, B. (2012), "The three roles of a project portfolio management office: Their impact on portfolio management execution and success", *International Journal of Project Management*, Vol. 30, pp. 608–620.
- Yin, R. K. (2009), *Case study Research: design and methods*, 1989. 4th edition, Sage, USA.
- Yukl, Gary, 2002. *Leadership in Organization*. 5th edition. Prentice Hall, Inc. USA.