International Scholars Journals

International Journal of Management and Business Studies ISSN 2167-0439 Vol. 9 (12), pp. 001-009, December, 2019. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Review

Project portfolio management implementation review

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Accepted 14 September, 2019

Project portfolio management implementation is a complex phenomenon among others within the project portfolio management as a new concept of the management science. The phenomenon is considered first, as a phase of the overall project portfolio management process, and then as a specific projects itself. There are also considerations of the project portfolio management implementation specific requirements, problems and final benefits for the organization able to complete it successfully.

Key words: Project portfolio management, implementation, phase, project, requirements, problems, benefits.

INTRODUCTION

Management science deals with the overall managing process problems as well as with its specific modalities performing in different social and business systems. Its theoretical aspects have been strongly affected management practice since the very beginning of 20th century when the discipline foundation was built by classics, Fayol and Taylor. With the discipline develop-ment practice has gradually benefited on its postulates accepted by individuals and organizations. The practice itself gave significant feed back to the discipline causing its further development. So the end of 20th century was the age of management discipline pick represented by X, Y, Z, W and many other management theories. New century is likely to be the discipline maturity period expected to come up with some more serious management solutions. There is not a universal and overall definition of management for there are great num-ber of authors and management theories. But actually there is an acceptable one including almost all manage-ment aspects, phases and principles: Koontz and O'Donnell in the late 1970s defined management as all the activities and tasks undertaken by one or more persons for the purpose of planning and controlling the activities of others in order to achieve an objective or complete an activity that could not be achieved by the others acting independently. That means: planning, organizing, staffing, directing, delegating and controlling the process of achievement the settled goals. The authors insist on the management principles to be followed by practitioners performing different management functions. They say that many use management principles implicitly but that a professional manager must use them explicitly (Koontz et al., 1968). The management discipline classification depends on different criteria one of which is the object to be managed. According to the criteria there are for example: strategic management, risk management, chaos management, project management, project portfolio management etc. For the purpose of the paper onward considerations deal with specific managements: project management (PM) and project portfolio management (PPM).

Project management (PM) concept is a modern concept but its roots lay deep in the past. It was practiced, in a way, by ancient Chinese warriors. The Art of War is an old Chinese text about war strategy. Despite its antiquity, politicians and business leaders (and of course, militaries) all over the world read the text written more than 2000 years ago by Sun Tzu because it is probably the most prestigious and influential book about strategy

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and management (Ellis, 2007 http://www.managethatproject.com/project-about.html), (Lopez, 2003). A kind of PM was practiced by gigantic public works performers of old and middle ages (Guida, 2008) and also by great battles and war conductors later (Manas, 2006.). The concept was wittingly accepted as a special management discipline in 20th century. PM concepts real foundation was established at the beginning of 20th century when, during the First World War, first Gantt chart was created. It emerged actually in 1950s with TPM techniques, CPM and PERT methods development and PDM method invention. After a year of the concept upgrading, quality improvement and practical integration, the last two decades are the period of its full affirmation and its universal practical value recognition.

What is PM exactly? Is project management an art that you're born with or a science that you can learn? The truth is, it is both (Belzer, 2001; Klein, 2006). The artistic aspects of project management include leading, enabling, motivating and communicating. An artistic project manager can direct the team when work priorities shift, resolve issues when they arise, and determine which information to communicate when and to whom. The science side of project management includes planning, estimating, measuring and controlling the work. A major reason of many projects failure is that organizations typically think of project management as a science, not as an art, according to research from the Boston University Corporate Education Centre (BUCEC, 2004). One of the new millennia beginning characteristics is immense development of project oriented activities. The situation enthrones PM concept as an answer on many actual project management challenges. But a new serious challenge emerges: numerous project alternatives compete for scarce and limited resources. Although PM can give some answers a complete solution of the new problem needs the concept improvement or its transformation or, as many authors agree with, completely new concept. New millennia enthrones PM concept but, at the same time, asks it to solve the new problem: how to select right projects and manage them properly according to the overall strategy goals. Trying to respond to the urgent request of the time a new project portfolio management concept emerged.

PROJECT PORTFOLIO MANAGEMENT

Theoreticians and practitioners have recognized strong need of project portfolio management (PPM) at the end of the last and the beginning of the new millennia. But the rudiments and announcements of the concept have been dated since 1950s. A Nobel Prize winning economist, Harry Markowitz who devised the modern portfolio theory in 1952 edited first book on portfolio selection in 1959 (Markowitz,1959). Harvard Business School professor McFarlan is considered to be the first to propose portfolio management approach to IT assets and investments in 1981 (McFarlan, 1981). The recognition of the PPM concept is not full but is pretty wide spread today. Among researchers and professionals it is considered as one of the fastest developing and improving concept. Although there are still reflections on it as a part or just a new upgrading of PM (PMI Global Congress, 2007), PPM is generally considered as “the greatest improvement in the project management field since TPM methods invention at 1950s” (Levine, 2005)

In literature, the concept of project portfolio management appears in various guises. Program management and multi-project management are examples of closely related terms (Elonen et al., 2003). PPM concept integrates operating activities and projects of an organization. Actually, it harmonizes projects, strategies and all other organizational activities. PPM is the art and science of applying a set of knowledge, skills, tools, and techniques to a collection of projects, in order to meet or exceed needs and expectations of an organization’s investment strategy (Pennypacker, 2002). As the PM, and much more, PPM is a specific junction of science and art (Oltmann, 2009).

PPM focus is upon clearly defining the value the projects have for the organization. PPM is applicable to all types of organizations, all types of projects and all economic and non-economic fields (Petrovic, 2006). Project portfolio, what is it exactly? Archer and Ghasemzadeh (Archer et al., 1999) and Dye and Pennypacker (Dye et al., 1999) define a project portfolio as a group of projects that compete for scarce resources and are conducted under the sponsorship or management of a particular organization. The three well-known objectives of portfolio management are: maximizing the value of the portfolio, linking the portfolio to the strategy and balancing the portfolio (Cooper et al., 1998). According to Platje (Platje et al., 1994) a portfolio is a set of projects which are managed in a coordinated way to deliver increased benefits. Mentioned definitions of portfolio management are similar to many definitions introduced for a project program management. For example, Turner (Turner, 1999) emphasizes that, in a program, projects form a coherent group of projects that are managed in a coordinated way, for added benefit. Murray-Webster and Thiry (Murray-Webster et al., 2000) define a program as a collection of change actions (projects and operational activities) purposefully grouped together to realize strategic benefits.

According to Turner (Turner, 1999), program management includes, among others, management of interfaces between projects, prioritization of resources and balancing

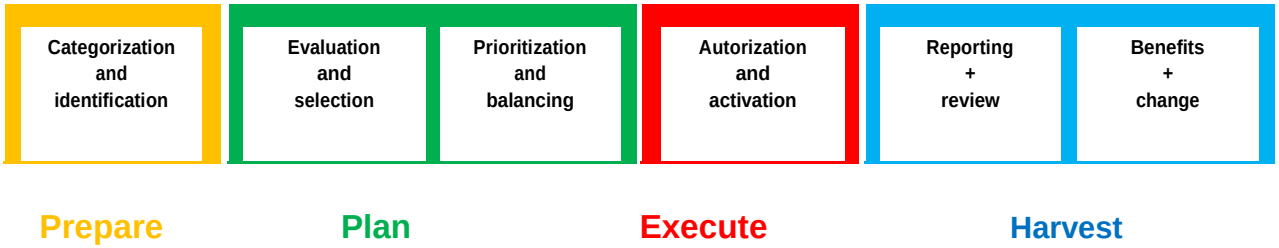

Figure 1. Ten steps in relation to the portfolio life cycle.

and balancing responsibilities against corporate objectives. CCTA (CCTA, 1999) uses the term portfolio while defining program management as the coordinated management of a portfolio of projects that change organizations to achieve benefits that are of strategic importance. A broad view on portfolio management includes aspects of both portfolio and program management studies, including management of interfaces between projects and co-ordination of collections of projects, and management in accordance with resource and other constraints (Elonen et al., 2003). Projects constraints in the context of PPM are not, as in the context of PM, just time, budget and quality but also the strategy (Norrie, 2006). In the context of PPM, project management success is considered as a four level process including:

Level 1 - Project management success (cost, time and quality)
Level 2 - Repeatable project management success (predictable outcomes)
Level 3 - Project success (benefits realised)
Level 4:- Corporate success (strategies implemented, value added)

Moving from one level to another requires organisations to develop processes in a number of areas: a methodology is required to move from level 1 to 2, benefits management is required to move from level 2 to 3 and portfolio management is required to move from level 3 to 4 (Haughey, 2004). According to Levine (Levine, 2005) PPM solves key problems of project oriented organizations: overcomes the gap between operating and project management and becomes a core of all organizational activities. PPM is a concept of managing all projects as an integrated and dynamic complex aiming strategic goals. PPM is an iterative process including tree principal phases: selection of projects for portfolio, portfolio maintenance and portfolio management. The most critical is the phase of projects selection which is, in fact, initial step of PPM implementation. Levine insists on being particularly careful in the first phases of the portfolio life cycle including primarily selection and prioritization.

According to Wideman (Wideman, 2007) the major phases of the project portfolio management process can be broken down into ten logical "steps". However, before the start of the process, you must have a clear understanding of two fundamental areas:

1. You must grasp the nature and extent of the work that you want to manage as a portfolio. Once this is defined, you will have established the scope of your portfolio.
2. You must reach agreement on the things that are important to your organization so that you have the context to make work prioritization and balancing decisions. Ten steps taking all this into account are the following:

(i) Portfolio setup and categorization
(ii) Identify needs and opportunities
(iii) Evaluate options
(iv) Select work
(v) Prioritize work
(vi) Balance and optimize the portfolio
(vii) Authorize the work
(viii) Plan and execute work
(ix) Report on portfolio status
(x) Improve the portfolio

The ten steps are closely related to the project portfolio life cycle as presented (Figure 1).

PROJECT PORTFOLIO MANAGEMENT IMPLEMENTATION

PPM implementation as a phase of PPM proces

PPM implementation as a phase of the PPM process is often faced up with a starting dilemma: What to do first, select projects for a new portfolio or evaluate current portfolio projects? Usually, organizations start with current projects evaluation, some projects delaying, some projects cancelling and other projects tuning with organizational resources and strategies (Levine, 2005). Whether

you start with the current project evaluation or project new candidates' prioritization you have to choose criteria for projects ranking. Return of investment (ROI) basing on the cash flows during the investment period is commonly used criteria (Madic, 2005). ROI is the pending criteria but it cannot be used without consideration of all other project aspects such as (Levine, 2005):

(i) Is the project aligned with the organization strategy?
(ii) How the project affects a balance of maintaining and investment project?
(iii) How the project impact effective allocation of costs and resources?
(iv) Risk and probability of the project realization within the scope, terms and budget.
(v) Non financial benefits of the project.

Projects ranking imply preliminary projects evaluation. Typical simple formula for a project evaluation is the following:

Project value = (Total project benefits -- Total project costs) / Estimated project risk

Project risk level as the divisor indicates the great importance of the project risk estimation for the overall project value (Trotta et al., 2005). Various methods and techniques could be used for projects evaluation, prioritization and selection. But "It should be stressed that it is not the methods that make decisions – the decisions are made by people. The manager, not the methods, is responsible for the decision. All these methods, regardless of how sophisticated they are, are only a partial presentation of the reality they want to present (Meredith et al., 1995).

PPM implementation, besides being a phase of the PPM process, is also a phase of the overall organization strategy implementation process. Properly implemented PPM should ensure successful implementation of an organi-zation strategy (Petrovic et al., 2006). Project portfolio management implementation is not as easy as it may first seem. Not only must company seek to maximize the value of portfolio, but also: the development projects in its portfolio must be appropriately balanced, there must be the right numbers of projects, and finally, the portfolio must be strategically aligned. No one project portfolio model can deliver on all four goals, and so best-practice businesses tend to use multiple methods to select their projects. Finally, any selection method is better than none at all (Cooper et al., 1998).

PPM implementation as a phase of PPM process co-vering preparation and planning activities is usually followed by activities of execution and harvest including: authorization, activation, reporting, review of benefits and changes, Figure 1, (Wideman, 2007).

PPM implementation as a special project

PPM implementation could be considered as a project itself. Moreover, it has to be treated as a very special and complex project. As PPM implementation imply PPM model development and PPM process initiating it must be planed and performed according to the principles of a good single project management. As a special and com-plex project PPM implementation should be performed according to the PM procedures and standards including the following activities (Levine, 2005):

(i) Preparation and proclamation of the project document
(ii) Preparation and distribution of the project plan
(iii) Preparation of the tasks and responsibilities matrix
(iv) Process development
(v) Supporting methods and techniques of selection and integration with the existing ones
(vi) Professional training and human resources management
(vii) Monitoring, control and revision of the implementation process
(viii) Performing a pilot implementation
(ix) Performing complete implementation

PPM implementation project realization should follow special check list that can be in form of a questionnaire or else. There are good practices in using check lists one of which is a list used by a USA Consultant Company specialized for PPM implementation (Levine, 2005). The list includes questions grouped into the following five groups presenting different aspects of an organization:

1. Management

(i) There is a formal procedure for projects approval and control?
(ii) Clearly defined responsibilities for technical and financial aspects of project realisation?
(iii) There is consistent development and management policy?
(iv) There is a manager responsible for designing, budgeting and success of each project?

2. Business

(i) Each project proposal identifies business goals to be supported by?
(ii) Each project proposal includes scope, methodology, overlapping and interdependences?
(iii) Each project proposal includes WBS, terms, resources

benefits, risks estimation?

3. PM and culture

(i) There are common procedures for managing several projects at the same time?
(ii) There is a standard procedure of the projects ideas formalization?
(iii) There is a project management office and project oriented top management?

4. PM supporting infrastructure

(i) There is standardized project management process?
(ii) Projects flow in to the portfolio is based on their contribution to the strategic goals?
(iii) There are tools for project status control and project performing analysis?
(iv) There are trainings for new project and program managers and other staff?

5. Analysis and control.

(i) There is a needed level of project information transparency?
(ii) There is interdependence and overlapping control preventing possible conflicts?
(iii)There is a periodical portfolio reorganizing according to relevant changes?

PPM IMPLEMENTATION REQUIREMENTS

Basic reqirements for the PPM implementation performance are in fact the components of a mature and competent PPM model including the following:

Strategic planning

Clearly defined organization's mission, strategies and tactics including: PPM as the key process, projects as a key tools and PM as a framing discipline (Yelin, 2005; Petrovic, 2003).

Human resources management

Activities and practices in selecting and training staff for PM/PPM performance (Petrovic, 2003)

Project management

Develope procedures for achieving micro and macro project success (Chan et al., 2009). Develope procedures for achieving PPM efficiency (Martinsuo et al., 2007) through integration with PM procedures (Levine, 2005) and models of PM with portfolio potential (Wideman, 2004).

Organizational structure

Project or matrix organizations (Petrovic, 2003) with PMO / PPM Council (Levine, 2005) are needed.

PM/PPM information system

Software's and techniques for adequate information quantity/quality and their processing in function of PM and PPM management (Levine, 2005)

PM/ PPM culture

Special attitudes including projects consideration as the key strategic tools and project management tasks spreading over the management structures (Petrovic, 2003). Mentioned PPM model components representing basic requirements for the quality PPM implementation performance have to be on certain maturity and competence level. PPM model maturity and competence level measurement imply a certain scale or group of different scales. These scales are not to easy to make and use.

The PPM model maturity and competence level mesaurement is important for adequate directing of an organizatoon efforts aiming the existing PPM model improvement. The topic has not been discussed a lot among researchers and practicionaries yet. It seems that It is up to future researchers to consider it more seriosly. But there are some proposals one of which is a scale presented onward (Table 1) (Petrovic, 2003).

PPM IMPLEMENTATION PROBLEMS

PPM implementation as a critical PPM process phase and a complex project itself confronts some specific problems. These problems causes the implementation seldom resulting with an ideal project portfolio including projects aligned within strategies and resources in a manner of a perfect puzzle (Madic, 2009). These problems are subject of theoretical and practical researches some of which are summarised onward. Cooper (Cooper et al., 1998) emphasises the following PPM problems:

(i) Projects and strategies incompatibility
(ii) Inadequate portfolio quality
(iii) Denying to cancel a project

Table 1. An example of a scale for measuring PPM model maturity and competence level.

Maturity level	% From – To	Level description	Level characteristics
5	81 – 100	Optimization	Continual improvement of the PPM proces Continual data collection Failures analysis for prevention
4	61–80	Managability	PPM proces quantifiable Productivity and quality are measurable Proces experiences collection
3	41–60	Definition	PPM proces is institutionalized PPM proces is defined PPM proces groups are defined
2	21–40	Repeatability	Process depends on an individual Minimal process management High risk of new chalenges
1	0 -20	Introduction	Ad hoc process, not defined No adequate instructions No conzistency in tasks realization

(iv) Lack of resources and focus
(v) High quantity and low quality information
(vi) Power based decision making

Professor McFarlan from Harvard Business School (McFarlan, 2003) also thinks on similar problems:

i. In too many companies, project portfolios are veering away from overall company objectives, resulting in squandered resources and diminished returns.
ii. Most large organizations manage their portfolios as a collection of projects, rather than as an integrated portfolio to be grouped together and viewed as an integrated whole.

Professor McFarlan proposes some solutions for the mentioned problems:

i. Projects should be grouped together and viewed as an integrated whole. The portfolio analysis should forces critical issues to the front so they can be better analyzed according to organizational resources and strategies.
ii. Understand your portfolio by looking at it through different lenses; try to benchmark yourself against best industry practices in different ways, and then make your own investments. Once you have agreed to look at it as a portfolio and have raised these issues to the surface, you have already solved half the problem.
iii. The successful organizations gave an involved information-literate senior management as well as deeply competent, general-management-articulate IT managers.

Benko et al. (2003), having modular approach to the projects within a portfolio, recommends a common threads tool as a special solution for its integration and aligning it with organizational strategy. The tool aims at avoiding lots of project efforts duplicate one another. Common Threads finds commonalities, often hidden, among projects that can be reused, extended or leveraged for added value. They strikes a balance between the benefits of collaboration and the benefits of quick, independent action. A wisely using of the tool is recomended after recognizing same or similar projects components or procedures.

Finish authors group (Martinsuo et al., 2007) investigated role of single-project management in achieving portfolio management efficiency and problems encountered in project and portfolio management in some matrix organizations. They identified the following groups of problems and problem areas:

(i) Inadequate project level activities
(ii) Lacking resources, competencies and methods
(iii) Lacking commitment, unclear roles and responsibilities
(iv) Inadequate portfolio level activities
(v) Inadequate information management
(vi) Inadequate management of project-oriented business

There are some PPM implementation problems that should be stressed particularly. These are the problems of project risk estimation and risk management, project management – operation management communication, organization for PPM and PPM model components and the overall model maturity level measuring. Project risk estimation and risk management seem to be the greatest problems of the project portfolio management implementation. These problems are expected to be solved as better as is possible by any organization aiming to fulfil its PPM and strategic goals. Minimising potential projects failures requires serious activities such as project risk identification, risk estimation and serious consideration especially in the first phases of the project portfolio implementation. These activities are to be tuned with the overall organization sustainability risk management – holistic and systematic integration of ecological, socioeconomic and corporate risk factors management (Ayse et al., 2010).

Especially it is hard to manage the risk of project portfolio costs estimation. Although some authors claim " there is no way to manage the risk of a single project alone" and " the most efficient way of avoiding failures is to manage the risk of a project portfolio as a whole" (Kitchenham,1997) there are no adequate practises yet. The costs and risks of the portfolio are often estimated as a simple score of a single project costs and risks. That is why many authors still search for an adequate solution of the problem.

PPM IMPLEMENTATION BENEFITS

PPM implementation costs, takes time and efforts. It is not easy task to do for very specific requirements and problems encountered. But it is in final rally worthy of all efforts and money. PPM implementation results are many short term and long term benefits for organization able to complete it successfully. These benefits, especially the long term ones, make up for all investments in the process. PPM implementation benefits are, in fact, answers on the key dilemmas and questions of an projects oriented and on projects dependent organization (Mathur, 2008): Do we conduct right projects? Do we invest in right areas and fields? Do we have enough and adequate resources? Do we have to cancel, delay or continue the project? Organizations able to complete PPM implementation successfully become more flexible for external changes of a turbulent environment. Team work and focus of such an organization make it able to answer the changes in time. One of the benefits is the reduction of hierarchy levels and clearly defined tasks and responsibilities leading to improved motivation and creativity of all organization members and employees, lessened number of conflicts and improved communications on all organizational levels and structures (Petrovic, 2006).

Particularly important benefits of a successful PPM implementation, among others, are project costs reduction and project terms fitting. A research of the project efficiency in U.S. oil industry results illustrates the fact. Independent project analysis found that 50% of mega projects starting with more than $1 million finished with catastrophic overrun-average $1.42 million per project. The analysis also found that 80% of all projects overrun average was 30% of planed costs and 38% of planed terms. Authors of the analysis (Young et al., 2006) stressed the following benefits of projects integration within portfolio and of a good PPM process:

(i) Proper prioritisation of the projects
(ii) Replication of successful projects
(iii) On time reactions on external changes
(iv) On time decision making according to the project status changes
(v) Efficiency in resources engagement

Generally, organizations able to implement PPM benefit on it in many ways. All efforts and money returns soon as multiple positive effects. Such organizations become more flexible, impulsive, dynamic, innovative, creative, communicative, strategic oriented, efficient and motivated.

CONCLUSION

Implementation of such complex process as PPM is consequently very complex itself. As such, it is briefly considered first as a phase of the overall PPM process, than as a specific project itself and finally as a phenomenon with specific requirements, problems and benefits. As a phase of the overall project portfolio management process implementation commonly starts with current projects evaluation and continuous with new projects selection. Theoreticians and practitioners recommend a pilot implementation before complete project portfolio management implementation. Performing project portfolio management implementation as a specific project is urgent for its complexity and importance for overall project portfolio management process. Therefore a good project management is needed as first among others specific requirements such as: strategic management, human resource management, program management, adequate organizational structure, special attitudes and culture and adequate information system. Project portfolio management implementation commonly faces up to many problems some of which are:

(i) Projects and strategies incompatibility – projects are not aligned with strategic goals,
(ii) Managing projects as a collection rather than as an integrated portfolio,
(iii) Lack of focus, resources, methods and procedures,
(iv) Power based decision making and poor project risk estimation,
(v) Poor project management–operation management communication,
(vi) Inadequate organization and culture and
(vii) Lacking commitment and unclear roles and responsibilities.

Some of the possible solutions of the problems proposed in literature and confirmed by practice are: better strategic and human resources planning, adequate organizational changes and efficient risk management. More precise and efficient PPM implementation solutions and simplifications are expected to come up in near future. In spite of the complexity and the problems project portfolio management, implementation in final brings back great benefits and advantages to organizations able to complete it successfully. Good practices examples approve the fact. Efforts and resources engaged into portfolio management implementation make the organization more flexible, dynamic, innovative and efficient and help it to deal successfully with contemporary complex and turbulent environment.

REFERENCES

Archer NP, Ghasemzadeh F (1999). An integrated framework for project portfolio selection. Int. J. Project Manage., 17(4):207–216.

Ayse KY, Triant F (2010). Managing corporate sustainability: Risk management process based Perspective. Afr. J. Bus. Manage., February: 162-171

Belzer K, Project Management (2010). Still More Art than Science, www.pmforum.org/library/papers/2001/ArtthanScience.pdf

Benko C, McFarlan W (2003). Connecting the Dots: Aligning projects with objectives in Unpredictable Times. Harv. Bus. Sch. Press, 2003 http:/hbswk.hbs.edu/item/3389.html

BUCEC (2004). http://www.reformingprojectmanagement.com/2004/01/12/307/

CCTA (1999). Managing successful programmes, London, UK: Central Computer and Telecommunications Agency – CCTA. Stationary Office.

Chan WK, Suhaiza Z, Yudi F (2009). Critical factors influencing the project success amongst manufacturing companies in Malaysia. Afr. J. Bus. Mnage., 3(1):16-27.

Cooper RG, Edgett SJ, Kleinschmidt EJ (1998). Portfolio management for new products. Perseus Books, New York.

Dye LD, Pennypacker JS (1999). An introduction to project portfolio management. In: Dye LD, Pennypacker JS, (eds). Project portfolio management: selecting and prioritizing projects for competitive advantage., West Chester, PA, USA: Center for Business Practices; 1999. .

Ellis Di (2007). The Art of War and Project Management. Article on http://www.managethatproject.com/project-about.html

Elonen S, Arttto K (2003). Problems in managing internal development projects in multi-project environment. Int. J. Project Manage., 27(1): 1-18.

Guida Pier Luigi (2008). Rete Ferroviari aitaliana, Project management in ancient Rome, 22nd IPMA World Congress, Roma 2008. Available: www.ipmaroma2008.it/topics.php

Haughey D (2004). The Project Management Maturity Matrix, for Project Smart, 2004 http://www.projectsmart.co.uk/four-levels-of-project-success.html

Kitchenham B, Linkman S (1997). Estimates, uncertainty and risk. IEEE Softw.,14: 69-74.

Klein M (2006). Powerful Project Management: A Balanced Blend of Art and Science January 26 © 2006 allPM.com, http://www.allpm.com/index.php?name=News&file=article&sid=1476

Koontz H, Cyril O'Donnell (1968). Principles of Management: An Analysis of Managerial Functions, McGraw-Hill, New York, 1968., http://knol.google.com/k/principles-of-management-koontz-and-o-donnell

Levine HA (2005). Project Portfolio Management, Jossey-Bass. Wiley Imprint, USA, 2005.

Lopez LF (2003). PMP, Project Management and the Art of War. October' 27, 2003
http://www.gantthead.com/content/articles/195813.cfm

Manas J (2006). Napoleon on Project Management, Nelson Business,Tennessee, 2006

McFarlan FW (1981). Portfolio approach to information systems. Harv. Bus. Rev., Sept.-Oct 1981.

McFarlan W (2003). Why is Project Portfolio Management so Hard to Put in Practice? Marta Lagace Interview 2003, http:/hbswk.hbs.edu/item/3389.html

Mathur S (2008). What is PPM and what it can do for my business. PMI Global Congres, Sydney, Austarlia.

Martinsuo M, Lehtonen P (2007). Role of single-project management in achiving portfolio management efficiency, Int. J. Project Manage., 25(1): 56-65.

Murray-Webster R, Thiry M (2000). Project programme management. In: Turner JR, Simister SJ (eds). Handbook of project management, 3rd ed. London: Gower; 2000.

Markowitz Harry (1991). Portfolio Selection: Efficient Diversification of Investments, John Wiley and Sons, New York, Chapman and Hall, Limited, London, 1959, reprinted by Yale University Press, 1970 (2nd ed.) Basil Blackwell, ISBN 978-1557861085, http://cowles.econ.yale.edu/P/cm/m16/index.htm.

Meredith JR, Mantel SJ (1995). Project management-A managerial approach, 5th edition, John Wiley and Sons.

Madic B (2009). Project Portfolio Mnagement Concept State in Some Serbian Organizations and Proposals for Implementation or Upgrading. Master Thesis, Management Department, Technical Faculty, Bor University of Belgrade.

Madic B, Jovanovic A, Obradovic L (2005). Cash Flows in the Complex of Investment Project Analysis and Evaluation, IX intenational Simposium on Project Mangement YUPMA.

Norrie JL (2006). Improving results of project portfolio management in the public sector using a balanced strategic scoring model. PhD. thesis, Project Management, Royal Melbourne Institute of Technology, School of Property, Construction and Project Management, Design and Social Context.

RMIT University, November, (2006). http://dhtw.tce.rmit.edu.au/James%20Norrie/Norrie-Thesis.pdf

Oltmann J (2009). Project Portfolio Management–The Art of Saying No, PM World Today, 11(4):1.

Platje A, Seidel H, Wadman S (1994). Project and portfolio planning cycle—project based management for multiproject challenge. Int. J. Project Manage., 12(2): 101.

Petrovic D, Mihic M, Obradovic V (2006). Startegic Management by Project Portfolio Management. International scientific days, Faculty of Economic and Management SAU, Nitra, 2006. www.fem.uniag.sk/mvd2006/zbornik/sekcia4/s4_petrovic_dejan_313.pdf

Petrovic D (2003). The Concept of Multiproject Management in the

Company. PhD thesis, University of Belgrade, Faculty of Organizational Sciences, Belgrade.
Pennypacker JS, Sepate P (2002). Integrating Project and Portfolio Management, 48:4.
PMI Global Congress (2007). Papers on PPM within the theme: New PM trends. Cancun, Mexico.
Trotta R.,C.Gardner (2005). How to determine the value of a Project. In: Levine, Chapter 4.2.
Turner JR (1999). The handbook of project-based management. 2nd ed.Cambridge, UK: McGraw-Hill.
Wideman M (2007). Ten Steps to Comprehensive Project Portfolio Management, 2007 http://www.maxwideman.com/papers/ten_step/ten_steps.htm
Wideman M (2005). Project Portfolio Governance Guidelines, Vancouver,Canada. pp.1-8. http://www.maxwideman.com/papers/governance/governance.pdf
Wideman M (2004). A Management Framework for Project, Program and Portfolio Integration. Chapter 8-A: Model with portfolio potential. Trafford Publishing, Victoria, BC, Canada.
Young J, Palomino D, Guevara A (2006). Programme and portfolio Management in the Oil and Gas Industry. Technology Support for Best Practices, Primavera Systems Incorporated. Available at www.primavera.com. http://www.cpm.co.yu/materijali/OilGasStandardization.pdf
Yelin KC (2007). Linking Strategy and PPM. In: Levine, Chapter 4.1.