

Available online at www.sciencedirect.com

Procedia Social and Behavioral Sciences 9 (2010) 1641–1645

Procedia
Social and Behavioral Sciences

WCLTA 2010

Project Management Maturity Model (PMMM) in educational organizations

C. Demir^a *, İbrahim Kocabaş^b^aFaculty of Education, Muş Alparslan University, 49100, Muş-Turkey, canandemir.cd@gmail.com^bFaculty of Education, Firat University, 23100 Elazığ-Turkey, ikocabas@firat.edu.tr

Abstract:

Project Management Maturity Model (PMMM) is getting popular because of its versatility and its ability to control time and cost most efficiently. More and more organizations have embraced Project management as a key strategy for remaining competitive in today's highly competitive business environment. The PMMM allows the organization to identify what steps must be taken, what deeds must be accomplished and in what sequence to realize meaningful and measurable results. The purpose of this study is to see whether PMMM can be used in educational organizations. By the help of maturity model, educational organizations can determine their capability to deliver high education on a five scale. A literature review have been made about maturity model and it has been discussed how to use maturity level in educational organizations in this paper. In order to improve educational organizations' effectiveness, it should become a strategic part of annual plan of the organization.

© 2010 Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: Project Management, Maturity Models, Project Management Maturity Model, Capability Project Management, Educational Organizations.

1. Introduction

Throughout the history, every kind of organizations such as governments, companies, charitable institutions have spent important efforts to define their long and short term goals or objectives, and to design strategies to help them achieve these goals. Yet, strategies often fail to produce the successful outcomes they were devised to produce or gain. If organizations implement the strategies at a detail and tactical level, they are expected to achieve the goals.

Project Management can be described as “a general purpose management tool that can bring projects to successful completion and to the satisfaction of the project stakeholders, given the traditional constraints, of defined scope, desired quality, budgeted cost, and a schedule deadline. Hence, project management is applicable to any organization with the core objectives of scope, quality, schedule and cost” (Hutson, 1997). The need for project management and the benefits that are possible from implementing project management methodologies are well documented and in many industries project management has already become both a central activity and the third element of organizational management systems that is bringing balance, harmony, and success in global organizations (Hutson, 1997). Project management provides a special and distinct role, due to the organizational

* C. Demir. Tel.: +90-436 213 00 13; fax: +90-436 212 08 53
E-mail address: canandemir.cd@gmail.com

form of traditional structures, which is highly bureaucratic and cannot respond rapidly enough to a changing environment (Kerzner, 1982; Bay and Skitmore, 2006).

More and more businesses are recognizing the benefits offered by project management to their organizations. By segmenting their work into defined and bounded projects, corporate management can bring a focused and dedicated effort to bear on each task. Success, however, requires that the business not only be broken into projects, but also that each project is well managed (Holmes and Walsh, 2005).

Maturity models are seen as models that reflect certain aspects of reality, often called capabilities, and define qualitative attributes which are used to classify a competence object into one of several clearly defined areas. These classes are typically brought into a sequential order (Kohlegger, Maier and Thalmann, 2009). Maturity models in areas involving process and high-performance delivery are proving to be useful because they allow individuals and organizations to self-assess the maturity of various aspects of their processes against benchmarks. As educational institutions try to improve their courses and services, it is important to know the attitudes, satisfactions, and outcomes of the students (Neuhauser, 2004). Therefore, a maturity model may help faculties and schools assess their courses in relationship to best practices and prioritize course improvement actions.

The purpose of this paper is to give, the fundamental principles of maturity models, an overview of the project management maturity model and to see how it can be used in the educational organizations. With this aim, this paper provides a literature review about Project Management Maturity Model (PMMM) and its applicability to educational organizations.

2. Maturity Models

Maturity models have their origin in the field of total quality management (TQM). They drive strategically linked continuous improvement and so require a thorough understanding of an organization's current position and where it aims to be in the future (Brookes and Clark, 2009). A maturity model provides a systematic framework for carrying out benchmarking and performance improvement

Beginning as early as the Software Engineering Institute (SEI), which is affiliated with Carnegie Mellon University, began developing a process maturity framework for software development and it resulted in the publication of the Capability Maturity Model (CMM) with five levels, in 1991. It turns out that the CMM is quite robust and has application beyond software engineering, for which it was originally developed. There are two areas of application that it has spawned. They are the People Capability Maturity Model (P-CMM), which is a five-level model patterned after the five levels of the CMM, and the Project Management Maturity Model (PMMM) (Wysocki, 2004).

The currently available models vary in the numbers of maturity levels they describe and will have a variety of titles for each level. For example some models developed by OGC have 5 levels:

- Level 1 -getting started/awareness/initial
- Level 2 -developing/focusing/repeatable/knowledge
- Level 3 -complying/practising/competence/defined
- Level 4 -sustaining/exploiting/managed/excellence
- Level 5 -advocating/transforming/optimized,

In some other cases there may also be a Level 0 - unawareness! The optimum level of maturity is recognized as being the level that delivers the organisation's strategic objectives most effectively and efficiently, which does not necessarily mean Level 5.

3. What Is Project Management Maturity Model (PMMM)

The CMM first refers to project management at level 2, where the focus is on repeatability, and hence begins the definition of standards for project management. The PMMM takes these standards to the next level of development by defining a separate model for the process and practice of project management. The models parallels the CMM as it is described below (Wysocki, 2004). PMMM helps organizations address fundamental aspects of managing projects, improve the likelihood of a quality result and successful outcome and reduce the likelihood of risks impacting projects adversely (OGC, 2006). Reaching an excellence in project management can be achieved by project management maturity model (PMMM) which is comprised of five levels, as shown in Figure 1. Each of the

five levels represents a different degree of maturity in project management (Kerzner, 2001; OGC, 2006; Wysocki, 2004; Cleland and Ireland, 2006). The levels are:

- Level 1-Common Language (Initial Process): In this level, the organization recognizes the importance of project management and the need for a good understanding of the basic knowledge on project management and the accompanying language or terminology. In the first level, project definition and awareness are important.
- Level 2-Common Processes (Repeatable Process): In this level, the organization recognizes that common processes need to be defined and developed such that successes on the project can be repeated on other projects. Also the recognition of the application and support of the project management principles to other methodologies employed by the company is included. In this level, the key process areas are business case development, project establishment, project planning, monitoring and control, stakeholder management and communications, requirements management, risk management, configuration management, management of suppliers and external parties.
- Level 3-Singular Methodology (Defined Process): In this level, the organization recognizes the synergistic effect of combining all corporate methodologies into a singular methodology, the center of which is project management. The synergistic effects also make process control easier with a single methodology than with multiple methodologies. This level provides these key areas; benefits management, transition, information management, organizational focus, process definition, training, skills and competency development, integrated management and reporting, lifecycle control, inter-group co-ordination and networking, quality assurance, centre of Excellence (COE) role deployment.
- Level 4-Benchmarking (Managed Process): This level contains the recognition that process improvement is necessary to maintain a competitive advantage. Benchmarking must be performed on a continuous basis. The company must decide whom to benchmark and what to benchmark. Within this level, management metrics, quality management, organizational cultural growth and capacity management are the key process areas.
- Level 5- Continuous Improvement (Optimized Process): In this level, the organization evaluates the information obtained through benchmarking and must then decides whether or not this information will enhance the singular methodology. The key process areas are proactive problem management, technology management and continuous process improvement in this level.

Level 5				
Continuous Improvement	Level 4			
	Benchmarking	Level 3		
Process Improvement		Singular Methodology	Level 2	
	Process Control		Common Processes	Level 1
		Process Definition		Common Language
			Basic Knowledge	

Figure. 1: The five levels of project management maturity

Each process area has a consistent structure, which is both descriptive and focused on outcomes. These are functional achievement/process goals, approach, deployment, review, perception and performance measures (OGC, 2006). The project management maturity level measures an organization's effectiveness in delivering projects. It sizes up how far an organization has progressed toward incorporating project management as an effective way of

work. The assessment provides an initial awareness for the status of project management in the organization and at the same time helps set the stage for making it better (Dinsmore, 1999).

4. Maturity Models in Educational Organizations

Like many organizations, educational institutions are also projectizing their operations and processes to plan, manage and complete projects more successfully (Ibbs and Kwak, 2000). In order to improve the overall organizational performance, it is important to reach a maturity level in project management and PMMM offers a progressive maturity. According to the researches, organizations who improve their maturity gain improved schedule and budget predictability, improved cycled time, increased productivity, improved quality, customer satisfaction, employee morale, increased return on investment and decreased cost of quality (Bourne and Tuffley, 2007).

Achieving maturity in project management, the leaders or managers of the educational institutions should know how to plan and manage projects. Project management is used in many areas including -to a very limited extent- education and it involves the planning and control of the three variables of time, cost and performance (Blenchard and Cook, 1973). Maturity Models can be applied to an organization, a business unit or a team to provide a road map for performance improvement. So it can be used in educational organizations, too.

Research indicates that organizations that improve their project management maturity experience cost savings, increased schedule predictability and improved quality. All of these contribute to improved return on investment and customer satisfaction (Zubrow, 2003). The levels described within the PMMM indicate how key process areas can be structured hierarchically to provide transition states for an organization wishing to set realistic and sensible goals for improvement. The levels facilitate organizational improvement, from a relatively low level of process capability to becoming a mature and capable organization with an objective basis for judging project quality and solving project issues (Harpham and Hinley, n.d.).

For the educational organizations, expecting level 4 and 5 is difficult but for the companies, one would expect level 4 and 5 to be better able to manage projects carrying a higher degree of risk and be more likely to deliver service product offerings with more predictable levels of quality. Of note, at Level Three, the processes must become tailorable to the characteristics of each project. An organization cannot blindly apply all processes equally to all projects, nor would they want to. Consideration must be given to the differences between projects (complexity, size, duration, etc.). The important thing is to note how the processes are tailored — that is, is there a *process to customize* the implementation of applicable activities and policies to a particular project?

5. Conclusion

As organizations continue to grow and develop, and as the body of knowledge of Programme and Project Management continues to develop further, more and more organizations are going to want to know where they are on their own learning curve and what it would take to improve their performance on projects. The project management maturity assesses an organization's probability of successfully executing a project. This model provides best practices to ensure management organizations' effectiveness at performing project management tasks. Therefore, it gives investors and their agents and as an organization the educational institutions the best assurance that their projects will realize the benefits that were the basis for undertaking in the first place.

There is ample evidence that when organization invests in improving its project management capability in a disciplined and realistic way, it will reap significant returns on its investment. Each educational institution must determine for itself what level of maturity it needs to achieve and how long the journey will take. A properly developed implementation roadmap that follows a detailed analysis of the institution's capabilities will significantly reduce the period of time required to improve the organization's maturity level. It is a fact that, the whole of our society will benefit from more effective Project Management and the highest benefit will be achieved by achieving maturity.

References

- Bay, A. F. & Skitmore, M. (2006). Project Management Maturity: Some Results From Indonesia. *Journal of Building and Construction Management* 10: pp. 1-5.
- Blenchard, G. F. & Cook, D. L. (1973). 'Project Management and Educational Change'. In Lipsitz, L. (Ed.), *The Process of Innovation in Education*. USA: Educational Technology.
- Bourne, L. & Tuffley, A. (2007). Comparing Maturity Models: CMMI, OPM3 and P3M3. *PMOZ Conference*. Practical PM Pty Ltd.
- Brookes, N. & Clark, R. (2009). Using Maturity Models to Improve Project Management Practice. *POMS 20th Annual Conference*, Orlando, Florida USA.
- Cleland, D. I. & Ireland, L. R. (2006). *Project Management: Strategic Design and Implementation* (Fifth Edition). New York: McGraw-Hill Professional.
- Dinsmore, P. C. (1999). *Winning in Business with Enterprise Project Management*. USA: Paul C. Dinsmore.
- Harpham, A. & Hinley, D. (n.d.). Just How Mature is Your Organization at Project Management? Retrieved September 10, 2010 from http://www.zulanas.lt/images/adm.../2_Alan_Harpham_paperENG.pdf
- Holmes, S. J. & Walsh, R. T. (2005). Conducting Effective Project Management Maturity Assessment Interviews. *IMSI TECH*. p. 1-12.
- Hutson, N. (1997). What Is Project Management? *The 28th Annual Project Management Institute 1997 Seminars & Symposium*, Chicago: Project Management Institute, pp. 1141–2
- Kerzner, H. (1982). *Project Management for Executives*, New York: Van Nostrand Reinhold
- Kerzner, H. (2001). *Strategic Planning For Project Management Using A Project Management Maturity Model*. USA: John Wiley & Sons.
- Kohlegger, M., Ronald, M. & Thalmann, S. (2009). Understanding Maturity Models Results of a Structured Content Analysis. *Proceedings of I-KNOW '09 and I-SEMANTICS '09*. 2-4 September, Graz, Austria. pp. 51-61.
- Ibbs, C. W. & Kwak, Y. H. (2000). Assessing Project Management Maturity. *Project Management Journal*. Vol. 31, No. 1, 32-43.
- Neuhauser, C. (2004). A maturity Model: Does It Provide a Path for Online Course Design? *The Journal of Interactive Online Learning*. Vol 3, No 1, 1-17
- OGC. (February 2006). Portfolio, Programme & Project Management Maturity Model (P3M3) (Version 1.0). *Office of Government Commerce (OGC)*. Crown. pp.1-77.
- Wysocki, R. K. (2004). *Project Management Process Improvement*. Norwood: Artech House, Inc.
- Zubrow, D. (2003). *CMMI Appraisal Results SEPG 2003*. Software Engineering Institute, Carnegie Mellon.