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Prince2 or PMBOK – a question of choice

Sandra Matos^a, Eurico Lopes^{a*}

^a*Escola Superior de Tecnologia, Instituto Politécnico de Castelo Branco, Av. Empresário, Campus da Talagueira 6000-767 Castelo Branco, Portugal*

Abstract

Project management has become an indispensable tool in project development, not only applied in software projects, but in many other business areas. Therefore, there is a huge investment in training of managers, giving them the knowledge to achieve their tasks successfully. The main goal is to decide which methodology we must apply to a project. In this paper we will discuss a set of principles that will support a choice from two main methodologies to use in different context projects. So in this paper, it is intended to introduce concepts, looking for the environment and highlighting its value in the project management, directed to software development projects, where increasingly there is a need to apply management knowledge. Will be presented a case study that illustrates the concepts presented and the easiness to implement a methodology for project management, supporting the entire process.

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* Corresponding author. Tel.: +351-272-339334; fax: +351-272-339399.
E-mail address: eurico@ipcb.pt.

1. Introduction

This paper addresses the question of how organizations can best support their IT project managers in gaining critical project management knowledge and skills. Traditionally, management development initiatives have included interventions such as formal training programs, performance appraisals and management coaching. Additionally, in the project context, post project reviews provide a significant occasion for an organization to facilitate the learning of project managers and team members from their project experiences. So, methodology can be understood as a definition of a simply group of tasks or something formal. The developer team can create their own methodology or can apply another already created by others [1].

However, the most important thing is the chosen methodology, covers all the identified requirements of the new project to build. In the end, the methodologies are an indispensable tool used in project management, which allow measure the progress and tasks control [2, 3].

A brief review for the most popular methodology among the companies and organizations with the objective to develop a software project we found PMBOK – *Project Management Body of Knowledge* and Prince2 – *Projects In Controlled Environments*.

In this study, we focus on the key knowledge and skills that experienced IT project managers view as critically important in order to manage their projects effectively, and we explore the avenues by which these managers have developed these skills and knowledge in the course of their careers. By examining both PMBOK and Prince2 what the critical skills are from the perspective of case study project, we are able to provide recommendations on effective development and training programs for the next generation of IT project managers.

In the next section, we overview the key knowledge areas and competencies identified in the literature as important for both methodologies, and then discuss both general management and development interventions and the potential of project reviews as a development tool. Following this, we present the method for the current study, and results and discussion.

2. Literature Review

There is now an extensive professional literature providing guidelines and frameworks for best practice in project management. The Project Management Institute [4] provides a series of professional certifications based on the standards set out in its Project Management Body of Knowledge (PMBOK). PRINCE® [5] was first developed by the CCTA in 1989. Since its introduction, PRINCE has become widely used in both the public and private sectors and is now the UK's de facto standard for IT project management.

2.1. Introduction to PMBOK

The PMBOK was created by the PMI (Project Management Institute), to ensure a set of knowledge principles in project management. The purpose is to guide a project manager to fulfil successfully a project [4]. The PMBOK is a detailed framework of nine knowledge areas, broken down into activities across five stages or process groups of the project life cycle, that are claimed to encompass the sum of knowledge generally recognized as good practice in the project management profession. In addition to these detailed knowledge areas, tools and techniques, PMBOK also notes that effective project management requires an understanding of the application area, the project environment, general management knowledge and skills, and interpersonal skills.

Accordingly with PMBOK [4] Project Management Body of Knowledge describes the sum of knowledge for the profession of project managers.

The PMI's creation was in 1969 with the objective of serving the interests of the industry of project management. It is actively involved in setting standards for this practice. The principle of PMI is based on the

idea that the tools and techniques of project management are common even among projects of the software industry and the construction industry PMI [4].

In 1981 the direction of PMI authorized the development of what has come to become A Guide to the Project Management Body of Knowledge (PMBOK Guide), containing the standards and guidelines of practice management, which are widely used in this role. First published in 1987, the PMBOK becoming a bestseller among securities everlasting business management [4].

The PMBOK ® Guide is approved as an American National Standard (ANS) by the American National Standards Institute (ANSI) [4].

A handful of studies have examined the importance of specific skills for IT project management. Jiang, Klein and Margulis [6] looked at the extent to which a set of skills previously identified as important for systems analysts were also important for IT project managers, and identified directing, managing and information seeking, identified as key skills. A subsequent study by Jiang, Klein and Chen [7] focused on the importance of leadership skills for successful project outcomes, reinforcing the importance of the team leadership competency. In a study that examined competencies of IT professionals in general, Bassellier and Benbasat [3] found that business competence, defined as organization-specific knowledge together with interpersonal and management knowledge was a key skill for those IT professionals whose work involves substantial contact with business clients

3. Introduction to PRINCE2

PRINCE2, *Projects in Controlled Environments*, was created in 1989 by CCTA (the Central Computer and Telecommunications Agency), since then called by OGC (the Office of Government Commerce). It is a method of project management structured based on experience gained in thousands of projects and contributions of numerous sponsors, managers, project teams, academics, trainers and consultants [5].

PRINCE was originally based on PROMPT, this is also a project management method created by *Simpact Systems Ltd* in 1975 and adopted by CCTA in 1979 as standard to be used by all Government projects [8]. Replacement of PROMPT happened when in 1989 it launched the PRINCE and this remains in the public domain. However, their rights are kept intact [5, 8].

The first publication was in 1996, having contributed to it, a partnership of 150 European organizations. PRINCE and PRINCE2 are registered trademarks of the British Government [5, 8].

The latest version of this methodology tries to approach a generic approach to become flexible to the point of shaping all types of design, i.e, it becomes a practical reference, possible to apply to any type of project, scale, organization, geography or culture. So it has become widely recognized as one of the methods of project management more accepted [9].

The main features of this methodology are based on the business focus, an organizational structure directed to the project management team. The planning is done with orientation toward the final product and its emphasis is on the division of the project into phases [4].

Prince2 is the standard used by the English government and widely recognized and used in the private sector, mainly in the UK.

A PRINCE 2 project is driven by the project's business case [8], which describes the organization's justification, commitment and rationale for the deliverables or outcome. The business case is regularly reviewed during the project to ensure the business objectives, which often change during the lifecycle of the project, are still being met. PRINCE 2 is designed to provide a common language across all the interested parties involved in a project. The method provides the necessary controls and breakpoints to work successfully within a contractual framework.

4. PMBOK *versus* PRINCE2

Both methodologies [10, 11] set documentation which must be tailored to suit the occasion project. For example, PMBOK is not intended to tell people how to do any of the techniques or use any of the tools described. It only lays out the processes, how they link together and the tools and techniques that can be invoked. Similarly, the application of PRINCE2 must be scaled for the size and needs of the particular project.

To better understand these methodologies is necessary to understand their commonalities and their differences. The project definition is distinct for both approaches. For the PMBOK project is a temporary endeavour undertaken to create a product, service or result singular. To Prince2, the project is a management environment created for the purpose of delivering one or more business products according to a specified business case.

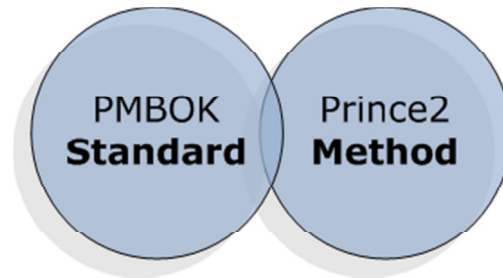


Fig.1. Commonalities between both methodologies

The PMBOK is recognized as an international standard IEEE Std 1490-2003, which provides the fundamentals of project management. The PRINCE2 is a structured method, considered a standard and recognized in both the public and private sectors.

The methodology or technique used by each is also distinct. The PMBOK is a descriptive methodology, ie, the detailed explanation of the techniques for project management, while the Prince2 bet in perspective, details how the techniques of project management should be structured and implemented [11].

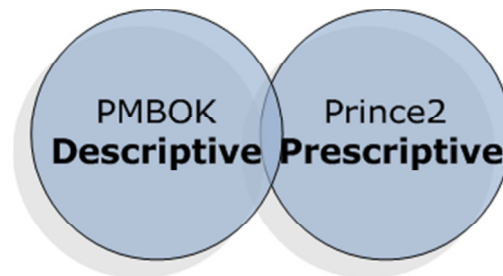


Fig.2. Characterization of both methodologies

As one follows the orientation toward the processes used in developing the project, the other has a guideline the final product, focusing on the successful delivery and quality [10].

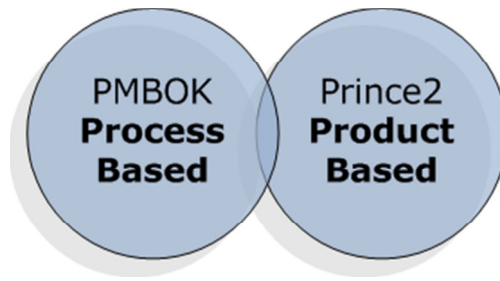


Fig.3. Process versus Product orientation in both methodologies

The project manager does not have the same relevance for both approaches: in the PMBOK project manager is the person responsible for meeting the goals, while for Prince2 is given the authority to run the project manager always responding to the project board.

For the PMBOK, are considered 5 groups of processes, while the Prince2 8 are considered. However, it is possible to find equivalences between processes. The Process of Home PMBOK is equivalent to the first two processes of Prince2, ie Start and Direction. The Planning Process PMBOK embodies the same principles of processes and Home Planning Prince2. Processes Execution / Control will be equivalent to three process groups: the Control Phase, Managing Product Delivery and Direction. Finally, the process of locking design is common to both approaches [11].

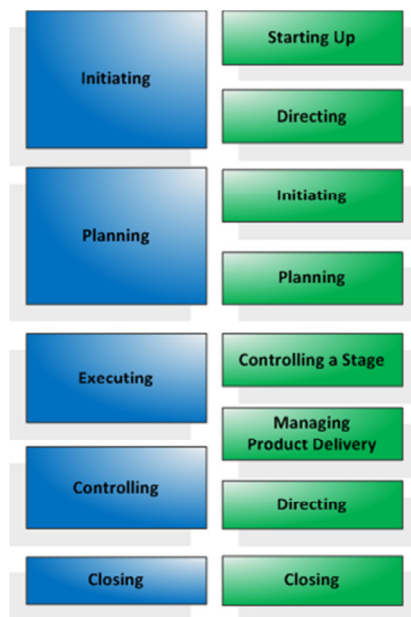


Fig.4. Processes in both methodologies

It is also possible to identify, equivalence among variables considered in each of these methods. Understand as variable parameters identified for each project that allow you to perform the management.



Fig.5.Variables in both methodologies

Both PRINCE 2 and PMBOK [10, 11] support category addresses the project (product development) management by improved process management. Particularly the configuration management phase activities (depending upon the developing environment) in these standards are generally related to each other at higher level. It is almost impossible that one can have strong one-to-one mapping between these standards, because of continuous process improvement strategy devised by PMBOK at project management level. However on the basis of experience and assessment, the gap between these two can be narrowed to a reasonable extent.

5. Case Study

In order to answer the research question “What should be the choice: Prince2 or PMBOOK?” we adopt a research case study, to following software development, which aims to optimize the time and resources to implement them successfully. So, an industry partner needs streamline their processes, so that all the

information is scattered before now concentrated in a single tool, to be more targeted treatment specialized.

This company has a solid and well delineated, divided into different areas. Autonomy was given to each area to organize information, create tables in a common database and streamline their processes. So long, each field has evolved in itself. This evolution was always accompanied by a team of knowledgeable data structure of the company that advised and sought that this development would respect the rules defined by the organization for creating tables and software development. The common, and therefore the starting point of each is the customer area, which includes the basic information of each customer. Previously there have been situations where been identified needs to obtain information from one area to another use, taking into account that the database is common designs have been created for specific construction that enables software to gather the information necessary to give the other field.

We identified the need to obtain the information from the customer's balance in all areas and gather this information in one tool, allowing treatment of real information, using the global view. Once you realize that this problem difficult to obtain customer information and being very conducive to failure, it was decided to create a project that could bring together all the information in a single query point. Thus was created the project STUDI, unified information system.

Among the choices of the project manager, were present PMBOK and PRINCE2 methodologies described above. The important point to be considered is the role of the manager as the project is of great importance and responsibility, ie the company's board gave the project the manager and it is this that will be responsible for developing the same, while the company board assumes the role of client expect to be given a final product within the deadline. On the other hand, aims to be a clear definition of the phases of the project for the development of software. The process of planning is well defined in the PRINCE2 methodology, using the usual planning suspects of work breakdown, activity networking and scheduling. The method of work breakdown is the product breakdown structure, essentially the same as a deliverable oriented Work Breakdown Structure, as well in PMBOK.

However, from PRINCE2 are excluded some aspects, such as: People management techniques such as motivation, delegation & team leadership; Generic planning techniques such as Gantt charts & critical path analysis; Risk management techniques; The creation & management of corporate quality management and quality assurance mechanisms and business case management, budgetary control & earned value analysis [13]. So in each of these tasks described can be applied in the development of projects, making a PMBOK guide in order to assist the manager, because this will have the freedom to check if the suggested task applies whether or not the project to develop. Thus, the application of the methodology phases correctly, will be one of the key points for conducting a project more effectively.

6. Conclusion

Ideal for any business, you have a resource that is certified in both methods, as would provide a solid knowledge for the performance of tasks in project management. It is almost impossible that one can have one-to-one mapping between these standards, because of different approaches that are being followed for accomplishment of the same task. But on the basis of experience and assessment, the gap between these two can be narrowed.

At this point, it is possible for the organization to have an overview of the client's situation at the time, because the information is obtained directly from the business areas. It was possible with this design speed the need to obtain this information, making it easy to obtain without any complexity for the user. At the same time, this information has the advantage to be obtained in time in response to need for any requested information. We may conclude from a point of view of project planning both methodologies are similarly, and at the point of project documentation and following up, PMBOK is more completed.

It was found that the work could have been more generic, for creating this, a uniform treatment for all applications, but over the lifting requirements of the new software, we identified rules to completely separate business areas, creating a need to change the design of processes. Thus, there was a need to find new

connections between processes redesigned, always focusing on the end product and what was expected of him. Therefore, you can identify yourself as weak point of this new software, the need for specific modules exist for the treatment of each area. However, it was possible to minimize these impacts, to create a module that receives the information already collected in different areas and treat it evenly giving the user the requested information.

With this research work, we learned several important aspects, but to the authors, the most important was the understanding of the advantages of the use of methodologies, which provide the tools necessary for the manager to carry out its responsibilities with insight optimizing the time and resources, coupled with his professional experience. There are, however, other methodologies that can support the development of projects. These may not be as well known as those presented in this article, but can be very valid solutions to consider, therefore might deserve further study in this work [13].

Future work

Mapping of PRINCE 2 components and support engineering process management categories of continuous representation of PMBOK will be carried out in future. For better understanding of transformation, it is only possible by discussing more case studies consist of complex scenarios.

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References

- [1] Fender, Melissa e Bill, Jennerich, 1994. "Developing a Methodology, A Framework for Implementing Client/Server Applications" <http://www.bee.net/bluebird/method.htm> published online on May, 1994
- [2] Haughey, Duncan, 2010. "Project Management Methodology Explained" <http://www.projectsmart.co.uk/project-management-methodology-explained.html> published online on 2010
- [3] Bassellier, G. and Benbasat, I. 2004. Business competence of information technology professionals: Conceptual development and influence on IT-business partnerships. *MIS Quarterly* 28(4), 673-694.
- [4] Project Management Institute 2008. A Guide to the Project Management Body of Knowledge (PMBOK Guide) (4rd ed.). Project Management Institute.
- [5] PRINCE2 Case Study, National Health Service, The APM Group Limited, Bucks, UK, July 2003.
- [6] Jiang, J. J., Klein, G., and Margulis, S. 1998. Important behavioral skills for IS project managers: The judgments of experienced IS professionals. *Project Management Journal* 29(1), 39-43.
- [7] Jiang, J. J., Klein, G., and Chen, H.-G. 2001. The relative influence of IS project implementation policies and project leadership on eventual outcomes. *Project Management Journal* 32(3), 49.
- [8] Implementing PRINCE2 in business change environment, Alvin Gardiner, 2003.
- [9] Luqman, Ahmad 2006, Comparison of Configuration Management Activities Between Prince 2 & CMMI 1.1, IEEE—ICET 2006, 2nd International Conference on Emerging Technologies Peshawar, Pakistan 13-14 November 2006
- [10] PRINCE2 Case study, PRINCE2 & PMI/PMBOK, A combined Approach at Getronics, The APM Group Limited, Buckinghamshire, UK, 2002.
- [11] Comparing PRINCE2* with PMBoK*, R. Max Wideman AEW Services, Vancouver, BC, Canada, 2002.
- [12] Gray, C. F. and Larson, E. W. 2008. *Project Management: The Managerial Process*. McGraw Hill Irwin.
- [13] Williams, T. 2008. How do organizations learn lessons from projects - and do they? *IEEE Transactions on Engineering Management* 55(2), 248-266.