

PRINCE2 Based Project Management Maturity Model

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Abstract: This paper presents the PRINCE2 based project management maturity model that determines and positions an organization's relative project management level with other organizations. The comprehensive model follows a systematic approach to establish an organization's current project management level. Each maturity level consists of key PM focus areas, and each key PM focus area consists of key PM components according to PRINCE2. The model evolves from functionally driven organizations practices to project driven organization that incorporates continuous project learning. The PRINCE2 based model provides an orderly, disciplined process to achieve higher level of project management maturity.

*Keywords-*Project Management, Project Management Maturity Model, Process-Oriented Model, PRINCE2

I. INTRODUCTION

The field of project management has extended its focus from study of a single project to the way a company or organization is using projects to achieve its goals. Gareis has long ago coined the concept of the Project-Oriented Organization (POO). The specific feature of such an organization is that of the management of single projects, the management of network of internal and external projects, and the relationships between the company and the single projects are considered. Today projects are seen as far more than solving of technical problems; they are also venues for mastering business and change. The term project maturity might be used as an indication of or a measurement of the organization's ability to use projects for different purposes.

Rodney Turner pointed that there is a Process School in the area of project management. David Cleland and Bill King pointed out that one of the characters of projects is that there is a life cycle inherent. And Harold Kerzner also recognize the life cycle in every project. In Europe, the process-oriented project management methodology is always popular. In the United State of America, David Cleland is called "the father of project management". And in Britain, there is a similar Stephen Wearne, who finished one of the earliest project management textbook in Britain. And in this textbook, the concept of process-oriented project management is the core. The Project IN Controlled Environment 2(PRINCE2) developed by OGC (Office of Government Commerce) is one of the most important process-oriented project management methodologies. So the PRINCE2 based Project Management Maturity Model in this paper will be a kind of important

Process-Oriented Models.

II. OVERVIEW OF MODEL

PRINCE2 is clearly project life cycle based with six out of eight major processes running from "Starting up a project" to "Closing a project". The remaining two, "Planning" and "Directing a project" are continuous processes supporting the other six. Each of these has their respective sub-process totaling 45 in all. Then, feeding into the system, are six "Components", some of which are documents and others that are themselves processes. Finally, PRINCE2 describes three techniques namely: "Product Based Planning", "Quality Review" and "Change Control". Fig.1 shows the integrating project processes and project management components in PRINCE2.

The PRINCE2 Based Project Management Maturity Model is developed by integrating previous maturity models that measure the PM levels of different companies and industries. The model becomes the bases to evaluate and position an organization's current PM maturity level. It illustrates a series of steps to help an organization incrementally improve its overall PM effectiveness. This paper describes the 5-level PRINCE2 Based Model to better understand an organization's levels of PM sophistication.

The PRINCE2 Based Project Management Maturity Model breaks PM processes and practices into eight project management processes and eight project management components by adopting PRINCE2. This allows an organization to determine the strengths and weaknesses of current PM practices and focus on the weak PM practices to achieve higher PM maturity.

Each maturity level consists of key PM focus areas, and each key PM focus area consists of key PM components according to PRINCE2. Tab. 1-2 summarizes the key aspects of the PRINCE2 Based Project Management Model.

The PRINCE2 Based Model motivates organizations and people to accomplish higher and more sophisticated PM maturity by a systematic and incremental approach. The results of the assessment assist organizations to make suggestions in improving an organization's PM application expertise and its use of technology. It also provides and guides the necessary processes and requirements to achieve a higher PM maturity level. Fig.2 illustrates the 5-level PRINCE2 Based Project Management Maturity Model. The following sections describe the PRINCE2 Based Model

in detail in terms of PM Processes.

Tab.1 Key PM Components in PM Processes of PRINCE2 Based Model

PM Processes	Key PM components
Starting up a project (SU)	Plans
	Management of Risk
	Organization
	Business Case
Initiating a project (IP)	Plans
	Quality
	Management of Risk
	Business Case
Directing a project (DP)	Controls
Controlling a stage (CS)	Controls
	Change Control
	Configuration Management
Manage Project Delivery (MP)	Change Control
	Plans
	Controls
Manage Stage Boundaries (SB)	Plans
	Controls
	Business Case
	Management of Risk
	Organization
Closing a Project (CP)	Controls
	Configuration Management
	Business Case
Planning (PL)	All of PM Components

III. PROJECT MANAGEMENT PROCESSES

A. Starting up a project (SU)

The goal of the project starting-up process is that project team can control the project initiating process. They do that in order to obtain enough information to definite the scope of the project and make plan for the work in the project initiating process.

Tab. 2 Key Focus Area of PRINCE2 Based Model

Maturity level	Key focus areas
Level 5	Innovative ideas to improve PM processes and practice
Level 4	Controlling multiple projects in a professional matter
Level 3	Systematic and structured project planning for individual project
Level 2	Individual project planning
Level 1	Understand and establish basic PRINCE2

At level 1, there are no any plans or processes available to start up a project. As a result, there are no project methodology been defined neither. At level 2, informal project methodologies are defined to start up the project. At level 3, project methodologies are formally defined and reused in projects. At level 4, the project methodologies are integrated to start up multiple projects. At level 5, the project start-up process is optimized and sustained for a continuous PM methodology improvement in the organizations.

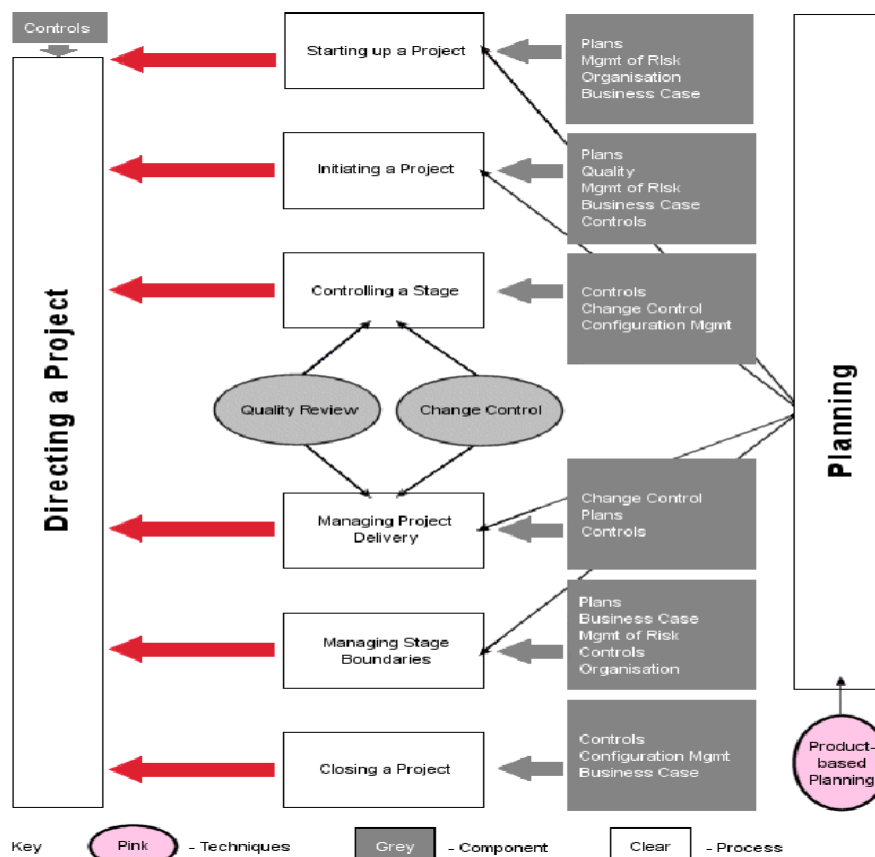


Fig.1 Integrating project processes and project management components

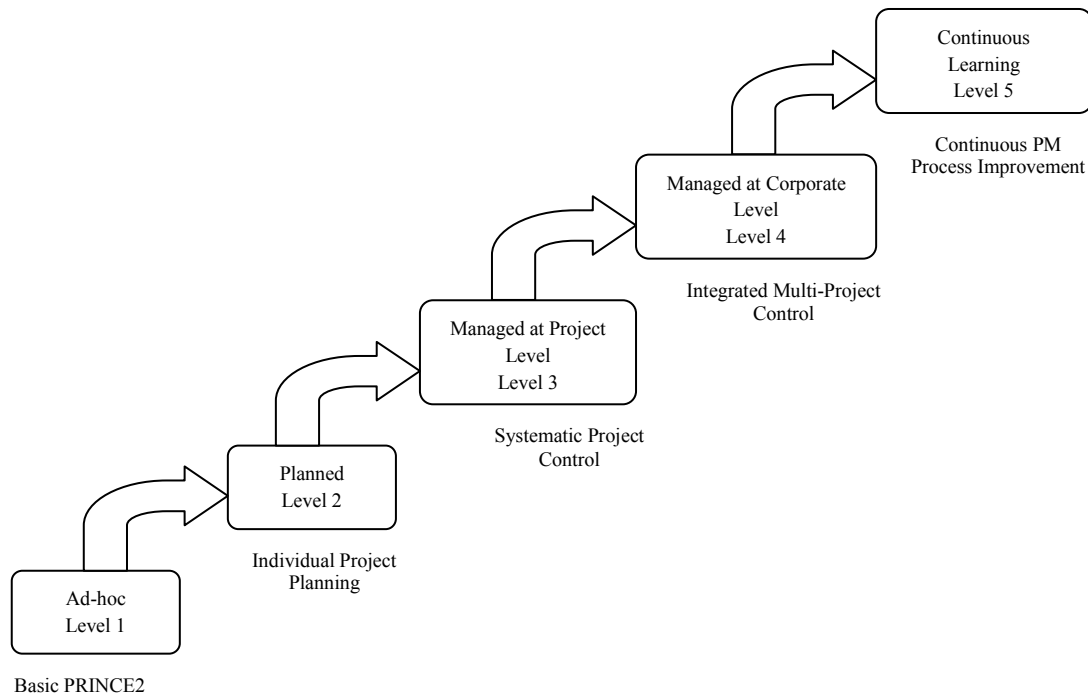


Fig.2 PRINCE2 Based Project Management Maturity Model

B. Initiating a project (IP)

The project initiating process recognizes that a project of stage should begin and the PM team is committed to do so. It includes developing a proposal for a potential project and analyzes and validates feasibility of the project.

At level 1, there are no initiating plans or processes available to develop a project proposal. As a result, proposal commitment and approval are not received from the participating organization. At level 2, informal project proposal plans are defined and evaluated for approval from the participating organization. At level 2, project proposals are formally reviewed and evaluated for approval. At level 4, the project proposal development processes are integrated to manage multiple projects. At level 4, an initiating process is optimized and sustained for continuous PM process improvement in the organizations.

C. Directing a project (DP)

The goal of the project directing process is that project management committee can guarantee the final success of the project. It includes four key processes such like initialing the project, reevaluating the project, direct specially and closing the project.

At level 1, there are no any directions on the project. At level 2, informal project directions are defined on the project. At level 3, project directions are formally defined and reused in the projects. At level 4, the project directions are integrated to be used on multiple projects. At level 5, the project directing process is optimized and sustained for a continuous improvement in the project management committee.

D. Controlling a stage (CS)

The project controlling process ensures that project objectives are met by measuring progress and taking

corrective actions when necessary. It includes collecting project progress status, analyzing variances, and communicating project status.

At level 1, the project controlling process is not defined of established. A change-control system is not available, and as a result, project progress status is not collected of updated. At level 2, an informal project-change-controlling process is defined. Variances are informally identified to determine the cause and the impact of the overall project performance. At level 3, project plans and adaptive actions control the project performance data. Project teams participate actively to provide actions and corrections to the controlling process. At level 4, project performance data collection, variance analysis, and status updates are integrated. Project status communication of each key PM knowledge area is integrated. At level 5, the controlling process is optimized and sustained for continuous PM process improvement.

E. Manage Project Delivery (MP)

The goal of the project delivery managing process is to allow the head of the project team to achieve agreement with project manager and submit the work to be done to the project manager.

At level 1, there is no any management on the project delivery. At level 2, informal delivery management is defined on the project. At level 3, project delivery management are formally defined and reused in the projects. At level 4, the project delivery management is integrated to be used on multiple projects. At level 5, the project delivery management process is optimized and sustained for a continuous improvement in the organization. 3.2.6 Manage Stage Boundaries (SB)

The goal of the stage boundaries management process is to guarantee that all products in this stage have

been finished as the plans to the project management committee and to prepare the plan of next stage.

At level 1, there is no any management on the stage boundary. At level 2, informal stage boundary managements are defined on the project. At level 3, stage boundaries managements are formally defined and reused in the projects. At level 4, stage boundaries management is integrated to be used on multiple projects. At level 5, the stage boundaries management process is optimized and sustained for a continuous improvement in the organization.

F. Closing a Project (CP)

The project closing process ensures formalizing acceptance of the project or stage and brings it to an orderly end. It includes contract close out, the lessons learned documentation, and administrative closure.

Level 1 organizations have no formal closing processes that close all deliverables and contracts. Project file records are not consolidated, classified, or stored. At level 2, an informal closing process is defined. Key technical learning and quality of overall PM process is informally reviewed. At level 3, all closing activities are completed and the project files are stored and managed. Project team members actively participate to suggest and document best PM practices. At level 4, contract close out, administrative closure, and documentation of project file are integrated. The level 5 organization has a closing process that is optimized and sustained for continuous PM process improvement.

G. Planning (PL)

The project planning process leads to the development and maintenance of a workable scheme to accomplish the business needs for the project. It includes defining overall scope, identifying planning strategy, developing the work breakdown structure for cost and schedule, refining estimates and analyzing commitments, optimizing the project plan, developing risk management plans, and organizing the project team to establish a project-driven organization environment.

At level 1, no formal planning session is conducted. The project plan is oftentimes not available. At level 2, some informal plans are developed and defined. An organization is informally trained to develop and plan key PM tools and techniques. Project teams are actively engaged to provide reviews and input to the planning process. At level 4, key PM processes are integrated into the planning process. At level 5, the planning process is optimized and sustained for continuous PM process improvement.

IV. CONCLUSIONS

The PRINCE2 Based Model provides a means of identifying and measuring different PM levels by integrating eight PM processes with eight PM components under a quantified scheme. It is well suited to assess an organizational PM level. Furthermore, the model provides an orderly and disciplined process to achieve higher levels of PM maturity. The model should

be continuously refined to reflect advances in our PM knowledge base. This refined PRINCE2 Based Model could further determine and evaluate an organizational PM maturity level more effectively.

Also, the PRINCE2 model should be applied to other industries and companies to further our understanding of PM in the future¹. By collecting and sharing this information, all PM organizations can benefit and continuously improve their PM practices. This information would be very helpful to managers who are struggling to calculate a budget to improve an organization's overall PM practices.

Future research will continue to focus on understanding the PM maturity and its benefits of PM processes and components more thoroughly. Real-world case studies reporting on how an organization has actually applied the PRINCE2 Based Model would also be beneficial to the PM community.

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