

Are project management processes correctly mapped to the Project Management Process Groups in the PMBOK® Guide (PMI, 2017) from a project life cycle perspective? ¹

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BACKGROUND

In a commentary article that was published in the PM World Journal in October 2019 the author mentioned that he is now in a new phase of his life after he had to exit employment with his employer when he reached the age of 65. The author stated that it is an opportune time for him to do some reflection after having had the privilege to gain excellent experience in organisational project management during a working career of some 45 years. In the article that was published in October 2019 the author suggested that the Project Management Institute (PMI) Development and Review Team for the *PMBOK® Guide* Seventh Edition should consider the possible inclusion of additional Project Management Knowledge Areas with their associated project management processes, for example:

- Project Benefits Realization Management.
- Project Knowledge Management.
- Project Documentation and Records Management.
- Project Issue Management.
- Project Organizational Change Management.

In this new commentary article the author suggests that some of the project management processes of some of the Project Management Knowledge Areas in the current *PMBOK® Guide* Sixth Edition (PMI, 2017) are not correctly mapped to the Project Management Process Groups if viewed from a project life cycle perspective. During his career the author was the custodian responsible for the development and maintenance of Project Life Cycle Models.

The author is aware that *The Standard for Project Management Seventh Edition Exposure Draft* (PMI, 2020) that was released for comment provides a common basis for and understanding of project delivery that applies to any project or delivery approach such as predictive, agile, and hybrid. This standard describes a Value Delivery System that represents a departure from what has historically been a process-orientated approach to a principle-based approach that supports any type of project. The author is however unsure how this change in approach will affect the contents of the *PMBOK® Guide* – Seventh Edition. According to an article by Dash (2019) the current PMP exam domains (Initiating, Planning, Executing, Monitoring and Controlling, and

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Closing) will be replaced by new domains (People, Process, and Business Improvement) for the new PMP exam that will be launched later in 2020.

PMI (2020) further mentions that for a project manager to successfully manage a project he/she needs to understand how to apply the project management processes for each of the Project Management Knowledge Areas according to the project management delivery approach (i.e. predictive, agile, or hybrid) that are the most appropriate for the project. If the author understands it correctly it seems that the project management processes for each of the project delivery approaches will be included in the new *PMBOK® Guide – Seventh Edition* in the format of a Digital Content Platform.

Keywords: project management processes, project management process groups; project life cycle.

PROJECT MANAGEMENT PROCESSES, PROJECT MANAGEMENT PROCESS GROUPS AND PROJECT LIFE CYCLE

Project management processes

According to PMI (2017) project management is accomplished through the appropriate application and integration of logically grouped project management processes. PMI (2017) briefly describes a **project management process** as *a systematic series of activities directed towards causing an end result where one or more inputs will be acted upon to create one or more outputs*. PMI (2017) states that the project life cycle is managed by executing a series of project management activities known as project management processes. Every project management process produces one or more outputs from one or more inputs by using appropriate project management tools and techniques. The output can be a deliverable or an outcome which is an end result of a process. PMI (2017) mentions that these project management processes apply globally across industries and categorizes them by Project Management Knowledge Areas:

- Project Integration Management.
- Project Scope Management.
- Project Schedule Management.
- Project Cost Management.
- Project Quality Management.
- Project Risk Management.
- Project Resource Management.
- Project Communication Management.
- Project Procurement Management.
- Project Stakeholder Management.

Project Management Process Groups

PMI (2017) describes a **Project Management Process Group** as *a logical grouping of project management inputs, tools and techniques, and outputs*. PMI (2017) groups project management processes into the following five Project Management Process Groups:

- **Initiating Process Group.** The process(es) performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
- **Planning Process Group.** The process(es) required to establish the scope of the project, refine the objectives, and determine the course of action required to attain the objectives that the project was undertaken to achieve.
- **Executing Process Group.** The process(es) performed to complete the work defined in the project management plan to satisfy the project requirements.
- **Monitoring and Controlling Process Group.** The process(es) required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
- **Closing Process Group.** The process(es) performed to formally complete or close a project, phase or contract.

Project Life Cycle

PMI (2017) states that a **project life cycle** is *a series of phases that a project passes through from its start to completion* and further mentions that a **project phase** is *a collection of logically related project activities that culminates in the completion of one or more deliverables*. According to PMI (2017) the names, number, and duration of the project phases are determined by the management and control needs of the organization(s) involved in the project, the nature of the project itself, and its area of application. PMI (2017) further mentions that the project manager and his project team must determine the best life cycle for their project and must ensure that the project life cycle is flexible enough to deal with the variety of factors included in their project. PMI (2017) continues that if a project is divided into phases (e.g. concept development, feasibility study, design, build, etc.) the processes in each of the Process Groups are repeated as necessary in each phase until the completion criteria for that phase have been satisfied. The author thus wants to suggest that the high-level activities for the phases as mentioned in this paragraph could typically be as follows:

- Concept development phase.
 - Initiate concept development phase.
 - Plan concept development phase.
 - Execute concept development phase.
 - Monitor and control concept development phase.
 - Close concept development phase.
- Feasibility study phase.
 - Initiate feasibility study phase.
 - Plan feasibility study phase.
 - Execute feasibility study phase.
 - Monitor and control feasibility study phase.
 - Close feasibility study phase.

- Design phase.
 - Initiate design phase.
 - Plan design phase.
 - Execute design phase.
 - Monitor and control design phase.
 - Close design phase.
- Build phase.
 - Initiate build phase.
 - Plan build phase.
 - Execute build phase.
 - Monitor and control build phase.
 - Close build phase.

MAPPING OF PROJECT MANAGEMENT PROCESSES TO PROJECT MANAGEMENT PROCESS GROUPS

Table 1 shows how PMI (2017) maps the 49 project management processes to the Project Management Process Groups.

Table 1: Mapping of Project Management Processes to Project Management Process Groups (Source: PMI, 2017)

Knowledge Areas Processes	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & Controlling Process Group	Closing Process Group
Project Integration Management	-Develop Project Charter.	-Develop Project Management Plan.	-Direct and Manage Project Work. -Manage Project knowledge.	-Monitor and Control Project Work. -Perform Integrated Change Control.	-Close Project or Phase.
Project Scope Management		-Plan Scope Management. -Collect <u>Requirements</u> -Define Scope -Create WBS.		-Validate Scope. -Control Scope.	
Project Schedule Management		-Plan Schedule Management. -Define <u>Activities</u> -Sequence <u>Activities</u> . -Estimate <u>Activity Durations</u> . -Develop <u>Schedule</u> .		-Control Schedule.	

Project Cost Management		-Plan Cost Management. <u>-Estimate Costs.</u> <u>-Determine Budget.</u>		-Control Costs.	
Project Quality Management		-Plan Quality Management.	-Manage Quality.	-Control Quality.	
Project Resource Management		-Plan Resource Management. <u>-Estimate Activity Resources.</u>	-Acquire Resources. -Develop Team. -Manage Team.	-Control Resources.	
Project Communications Management		-Plan Communications Management.	-Manage Communications.	-Monitor Communications.	
Project Risk Management		-Plan Risk Management. <u>-Identify Risks.</u> <u>-Perform Qualitative Risk Analysis.</u> <u>-Perform Quantitative Risk Analysis.</u> <u>-Plan Risk Responses.</u>	-Implement Risk Responses.	-Monitor Risks.	
Project Procurement Management		-Plan Procurement Management.	-Conduct Procurements.	-Control Procurements.	
Project Stakeholder Management	-Identify Stakeholders.	-Plan Stakeholder Engagement.	-Manage Stakeholder Engagement.	-Monitor Stakeholder Engagement.	

The author wants to argue that the mapping of the project management processes underlined in Table 1 to the Planning Process Group should rather be linked to the Executing Process Group from a project life cycle perspective. It is the opinion of the author that these processes/activities are performed to complete the work as defined in the subsidiary project management plans for a specific project phase (i.e. execution rather than planning), for example:

Scope Management

- **Collect Requirements.** The requirements for a phase and a project are determined, documented and stakeholder needs managed and clarified in more detail to meet project objectives as the project progresses through its life cycle.
- **Define Scope.** The scope for a phase and the detailed description of the project and product is developed and defined in more detail as the project progresses through its life cycle.
- **Create WBS.** The subdividing of deliverables and work for a phase and a project into smaller, more manageable components are defined in more detail as the project progresses through its life cycle.

Time Management

- **Define Activities.** The identification and documentation of the specific actions to be performed to produce the deliverables for a phase and a project are defined in more detail as the project progresses through its life cycle.
- **Sequence Activities.** The identification and documentation of relationships among the activities for a phase and a project are continuously refined and changed as more detailed information about activities and actual progress becomes available as the project progresses through its life cycle.
- **Estimate Activity Durations.** The estimation of the number of work periods needed to complete individual activities with the estimated resources for a phase and the project are continuously refined and changed as more detailed information about activities and their estimated and actual durations become available as the project progresses through its life cycle.
- **Develop Schedule.** The analyses of activity sequences, durations, resource requirements, and schedule constraints for a phase and project are continuously updated as more detailed information becomes available about activities, their sequence, estimated durations, estimated resources, as well as when actual activity progress is reported.

Cost Management

- **Estimate Costs.** The development and approximation of the monetary resources needed to complete the work for a phase and a project are defined in more detail as the project progresses through its life cycle. It must also be noted that estimation is an ongoing process to determine the estimate at completion (EAC) of a phase or project to control the cost.
- **Determine Budget.** The aggregation of estimated costs of individual activities or work packages to establish an authorized cost baseline is done for each phase and a project as the project progresses through its life cycle.

Resource Management

- **Estimate Activity Resources.** The estimation of team resources and the type and quantities of material, equipment, and supplies, necessary to perform the work for a phase and a project are defined in more detail as the project progresses through its life cycle.

Risk Management

- **Identify Risks.** The identification of individual project risks as well as sources of overall project risk and the documentation of their characteristics for a phase and a project is a continuous process as the project progresses through its life cycle.
- **Perform Qualitative and Quantitative Risk Analysis.** The prioritization of individual project risks by assessing their probability of occurrence and impact as well as other characteristics for a phase and a project are performed on a continuous basis as the project progresses through its life cycle.
- **Plan Risk Responses.** The development of options, selection of strategies, and getting agreement on actions to address overall project risk exposure, as well as the treatment of individual risks for a phase and a project are done on a continuous basis as the project progresses through its life cycle.

CONCLUDING COMMENTS

From a project life cycle perspective, the author has explained why he is of the opinion that some of the project management processes grouped under the Planning Process Group should rather be grouped under the Execution Process Group.

As PMI (2020) only released *The Exposure Draft for The Standard for Project Management- Seventh Edition* earlier in 2020 for influence, the author is unsure what the Project Management Domains in the *PMBOK® Guide Seventh Edition* will be and how the project management processes for each of the current Project Management Knowledge Areas will be mapped to these domains. It seems that the current Project Management Domains (Initiating, Planning, Executing, Monitoring and Controlling, and Closing) might be replaced by the new Domains (i.e. People, Process, and Business Improvement).

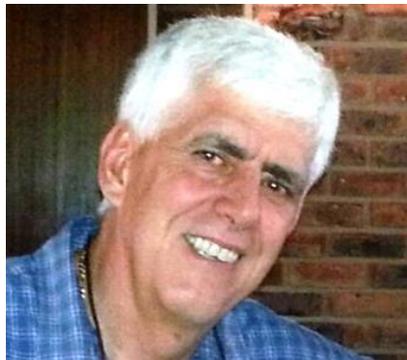
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About the Author



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Martin Smit is semi-retired and the owner of a sole proprietorship, OrgPM-Value, that provides portfolio, program and project management consulting, education and training services and products to help organizations to create sustainable business value. His career spanned some 45 years. He worked for Eskom, the electricity utility in South Africa, for 39 years where he held various management positions in construction-, outage-, maintenance-, and project/program-management. During the latter years Martin worked in the Eskom Project Management Office (EPMO) as an Organizational Project Management Specialist. He has extensive experience in the development and application of project, program and portfolio management methodologies, processes and best practices. Martin is certified as a facilitator to conduct project definition readiness assessments. He is also certified to facilitate learning, conduct outcomes-based assessments and moderation. Martin has developed and presented various project and outage management training courses.

Martin holds a MSc (Management of Technology and Innovation) from the Da Vinci Institute in the domain of Project Management and a PhD in Engineering from the North-West University in the field of Development and Management Engineering. The title of his thesis was: “*Development of a project portfolio management model for execution organizational strategies: A normative case study.*” He also has qualifications in civil and mechanical engineering, information management, management, and maintenance practice. Martin has been a Project Management Professional (PMP®) since 1992 (No. 1071).

During his career Martin has presented various papers at national and international conferences and he has also published some articles in international journals.

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