Progressive Elaboration\(^{(1)}\) of Project Management Processes

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Introduction

“What do you need to do to deliver a product or project?, Project management processes are the efforts spent through initiating, planning, executing, monitoring & controlling and closing the project to deliver the product of the project”

Since the project is approved through the project charter\(^{(2)}\) during the initiating phase, the project manager should perform some high-level planning activities through initiating phase based on the available information’s into project charter and to verify that the project will be completed within the scope, cost and time.

Once aforementioned steps are being completed the project manager should move into the planning phase of the project, at this point project manager should develop project management plan that illustrates how the project work will be Planned, Executed, Monitored & Controlled and Closed.

The next significant phase for the project manager is to start executing phase where the project manager and project team members direct and manage project work and perform other related project management processes. During this phase, project manager should evaluate the project performance through various processes that enable the project manager and project team members to collect the project performance data and use the relevant tools & techniques to process these data to get the project Work Performance Information's using variety of processes such as:
- Monitor & control project work.
- Perform integrated change control.
- Control scope.
- Validate scope.
- Control Cost.
- Control schedule.
- Control Quality.
- Control risk.
- Control stakeholder engagement.
- Control procurement.

Obviously, if there will be any changes, the project manager should evaluate this change and its impacts and to get the necessary approvals to update the project management plan and all subsidiary plans. Once the project works completed and/or the project is terminated project should move to closing phase, where the project manager and project team members will perform all necessary administrative closure activities to close the project or phase. This introduction gave a brief about the project five phases or process group (Initiating, Planning, Executing, Monitoring & Controlling and Closing). Throughout the rest of the article the reader will be able to get the following:

- Get a clear view of different Project Management Processes.
- Understand the intersection between project phases and Knowledge areas.
- Understand the sequence of planning processes and how process outputs could be used as an input to other processes.
- Understand progressive elaboration concept and how the planning process is an iterative process.

**Why Performing Organization Should Undertake a Project?**

What is the business case \(^{(3)}\) of this project? Why should the organization undertake this project? It is apparent that business case stated into project charter should be the prime mover to the project manager when planning the project work and will influence the project plans and how these plans will align the project with the objectives of this project. Hence the Project Manager should have the capability to apply the alternative generation concept during planning, executing, monitoring & controlling phases to serve the objective that the project was undertaken.

Once the Project Manager understood why the project was undertaken and what its objective is then the Project Manager will put his plans to achieve these objectives, which will influence the selection and tailoring of the project management process.
How to Sequence the Process to be aligned with Project Objectives?

However, most of project management process coming under planning phase, Project Manager should start some of planning processes during initiating to make sure the project work serves the project objectives such as:
- Acquire and develop a project team
- Identify the risk
- Plan risk response

INITIATING PHASE

The value of the initiating process group is that it approves the project and formally announced the existence of the project and names the Project Manager with his authority level. During this process group the Project Manager identify key stakeholders (4) and think how to align stakeholder’s expectations with the project objectives as stated earlier. It’s obvious that Project Manager should be aware of:
- Business case and/or project objectives
- High level definition of product scope and project scope
- Initial stakeholder register
- Potential risks
- Assumptions & constraints
- Budgetary estimate of the project
- Have a clear knowledge of organizational process assets and enterprise environment factors.

PLANNING PHASE

The planning process is not magic. It’s the process of walking through the project to get it organized before commencing the work. Planning is the key to share positive risks (opportunities), mitigate negative risks (threats), properly estimate cost, time & resources and increases the stakeholder involvement (buy-in) and finally encourage the Senior Management Commitments. During the planning phase, Project Manager and Project Team progressively elaborate the project details and develop the detailed plans that will guide the project team on how the project work will be managed, executed, monitored & controlled and closed. Project Manager should develop all subsidiary plans and determine how planning, executing, monitoring & controlling and closing will be managed. Project Manager with project team members should plan the following:
- Scope management plan
- Time management plan
- Cost management plan
- Risk management plan
- Quality management plan
- Human Resource Management Plan
- Communication Management Plan
- Procurement Management Plan
- Stakeholders’ Management Plan

Considering the progressive elaboration concept, the Project Manager should re-visit the high level plans that have been developed during initiation or stated in the project charter to incorporate more details and to prioritize the requirements, consequently a new assumptions and constraints should arise which lead Project Manager and Project Team members to refine the initial plans. During the planning phase the Project Manager and Project Team members should define the scope and decompose (Work Break Down Structures\(5\)) that will be delivered and will be used to define the activities (set of actions) that will be executed to deliver the project scope of work.

Since the Project Manager and Project Team define the activities (set of actions to be taken to deliver project scope), the Project Manager along with Project Team will be able to perform the following planning activities:-

- Sequence Project Activities
- Estimate Activities required resources
- Estimate Activities Cost
- Plan the required procurement actions to be taken to handle these activities
- Develop the Project Schedules
- Identify potential risk and plan their responses
- Estimate the contingency for identifying risk.
- Determine the Project Budget
- Plan who the stakeholder will be managed and engaged
- Estimate all possible communication channels
- Plan how the project performance will be evaluated and the reporting periods
- Plan the quality and quality metric
- Establish and approve the acceptance criteria and the validation procedures

Since the Project Manager and Project Team members completed the detailed actions stated earlier, the Project Management Plan will be available to guide the project execution, control and closure.
Iteration of Planning

Obviously, Planning Phase and all of its planning process are iterative process and based on rolling wave concept. The project plans are developed based on the available information and once more details are available, the project plans are updated by the Project Managers and Project Team members. There are two significant items that lead to revising and refining the project plans.

- **Identified Risks**
  Once the project team identified risk, they should perform all necessary analysis (Qualitative & Quantitative). Then plan risk response, which leads to estimate the contingencies, buffers, reserves. These contingencies will require the project team to update;
  - Project Management Plan
  - Scope Base Line
  - Schedule Base Line
  - Cost Base Line

- **Integrated Change**
  Any change required by any project stakeholders should be evaluated through integrated change control board and in case the ICCB approved the change, then an action should be taken;
  - Corrective Action
  - Preventive Action
  - Defect Repair

EXECUTING PHASE

Since Project Manager and Project Team members successfully developed the Project Management Plan and all subsidiary plans, and then the Project Team should execute the project work as defined in the planning phase. However, executing phase is to execute the project work it has a significant importance that the Project Team will work to meet the project objectives and align the project with the performing organizational strategic plans.

The main aspects of the executing phase are to:-

- Acquire, develop, and manage project team
- Perform the quality assurance to assure that the project Team is following the specifications, standards
- Communicate the project work between stakeholders
- Manage the project Stakeholder engagement
Looking to the above mentioned item, it will be apparent that the Project Manager and Project Team members have much to do during the execution phase and more efforts are required. The Project Team has to complete the defined scope and communicate the other stakeholder’s expectations and manage their engagement.

Since managing project team is one of the processes during executing phase, Project Manager should evaluate the Project Team performance and how effectively the Project Team is performing and make sure to get the required resources as committed by Senior Management.

Another task of the Project Manager is to resolve all issues between project team using the appropriate techniques.

**MONITORING & CONTROLLING PHASE**

Since Executing Phase is going on the Project Manager should always measure the project performance against the Project Management Plan and other subsidiary plans and manage the change control process, including the necessary action against approved change requests (corrective, preventive actions and defect repair).

The Project Manager should know how to evaluate the project performance against:

- Scope Baseline
- Schedule Baseline
- Cost Baseline

Project Management plan provides the Project Manager and Project Team members with a variety of tools and techniques like Earned Value Management, Trend Analysis and Variance Analysis, etc. to evaluate the project performance and these tools and significant tools under cost control and schedule control processes.

Since the Project Manager is accountable for project success, then he will be accountable for complying with all performance measurement baselines.

In addition to all the stated tasks and processes that should be performed by the Project Manager and Project Team as well. Project Manager should manage the configuration management plan which means Project Manager must make sure that all relevant project stakeholders have the latest version of the Project Management Plan and all other subsidiary plans. Furthermore, the Project Manager should work on improving
the quality, evaluate the effectiveness of risk response and identify the residual risks, secondary risk, watch list.

Finally, the Project Manager should work on getting the formal acceptance of completed deliverables (validate scope) to conclude the monitoring & controlling phase. Project Manager should perform;

- Control scope
- Control schedule
- Control cost
- Control quality
- Control communication
- Control risk
- Control procurement
- Control stakeholders engagement

CLOSING PHASE

It doesn’t mean that since Project Manager has completed the project work that project is finished. Still Project Manager and Project Team members have a lot to do. There is another effort that Project Manager and Project Team members should spend which administrative closure is such as:

- Documenting completed schedules
- Archiving change requests
- Recording cost at completion
- Collecting and archiving lessons learned.
- Adjourning the Project Team
- Transferring the completed works or final products to the end user
- Close out all procurement
- Make the final payments and settlements
CONCLUSION

Here we can say that the project life cycle is completed starting from initiating, planning, executing, monitoring & controlling and closing, to conclude the project management process, we develop the following road map to summarize the project management process.

DEFINITIONS

(1) Progressive Elaboration: the Iterative process of increasing the level of details in a project management plan as greater amounts of information and more accurate estimates become available.
(2) **Project Charter:** A document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.

(3) **Business Case:** The Business case or similar document describes the necessary information from a business standpoint to determine whether or not project is worth the required investment.

(4) **Stakeholder:** An individual, group, or organization who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of the project, program, or portfolio.

(5) **Work Breakdown Structure:** A hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverable.

(6) **Earned Value Management:** A methodology that combines scope, schedule, and resource measurements to assess project performance and progress.

REFERENCES:

(1) *PMI Lexicon of Project Management Terms, 2012 Project Management Institute, Inc.*


(3) *Rita Mulcahy’s PMP Exam Prep. Eighth Edition*
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