Project Life Cycle and Phases

Project Life Cycle (PLC)

- A life cycle is a progression of phases through a series of developmental stages
  - It is the performing organizations or departments methodology for managing a project
- PLC is selected based on factors such as type of product being developed, the industry, and the organizations preferences
- A PLC may generally have 1 or more than 1 phases or development life cycle of a project
  - These phases ensure that the expected or planned result of each phase is achieved
  - PLC varies depending on the industry, the organizations, and the type of product, service, or result being developed
- PLCs can either be plan driven or change driven

Progressive Elaboration

- Many of the items start in the initiating process group and then are iterated or refined into plans that can be sued to manage project
- Although the PM plan is finalized in planning, items such as detailed estimates, project scope and product scope descriptions may be clarified as the work is being done during the executing and monitoring and controlling processes
  - This process of continually refining estimates and scope definition is called progressive elaboration
- Rolling Wave Planning:-
  - It is a form of progressive elaboration
  - Earliest part of the project are planned in sufficient detail for work to begin, later phases of project work are planned at a high level
    - As project progresses, and more information impacting the work becomes available, plans are elaborated in sufficient details to accomplish the work

Plan Driven Project Life Cycle

- Plan driven projects have predictive development life cycles. These are also termed as;
  - Waterfall Life cycle
  - Traditional life cycles
- These require scope, schedule, and cost to be determined in detail in the life of a project before the work begins to produce the project deliverables
  - E.g construction project would typically be managed using a predictive life cycle

Change Driven Project Life Cycle

- Change driven projects use iterative, incremental, or adaptive development life cycles. These are also termed as;
  - Incremental and iterative life cycles involve early planning of high level scope sufficient enough to allow for preliminary estimates of time and cost
    - Scope is developed a little more with each iteration
    - Incremental development life cycle delivers a complete, usable portion of the product for each iteration
      - E.g a project to build a website using an incremental life cycle would involve prioritizing requirements into iteration that deliver a fully functioning portion of the website at the end of each iteration
    - In Iterative development life cycle, the concept is built in successive levels of detail to create the end result
      - To build website, planning for the first iteration would focus on planning to create a prototype of the entire website
      - After the basic skeleton of the site is built, each successive iteration would be planned to add more detail until a complete and fully functioning site is achieved

Change Driven Project Life Cycle

- Adaptive development life cycle involve a fixed schedule as well as fixed costs. Scope is broadly defined with the understanding that it will be refined throughout the life of the project
  - Customer requirements are documented and prioritized in a backlog, which can be adjusted as the project progresses
  - Work is planned in in short increments to allow the customer to change and reprioritize requirements within the time and cost constraints
  - A new software development project may follow an adaptive approach, using phases that might include high-level feasibility, design and planning, followed by short, iterative phases of detailed design, coding, testing and release

Hybrid Development Life Cycle

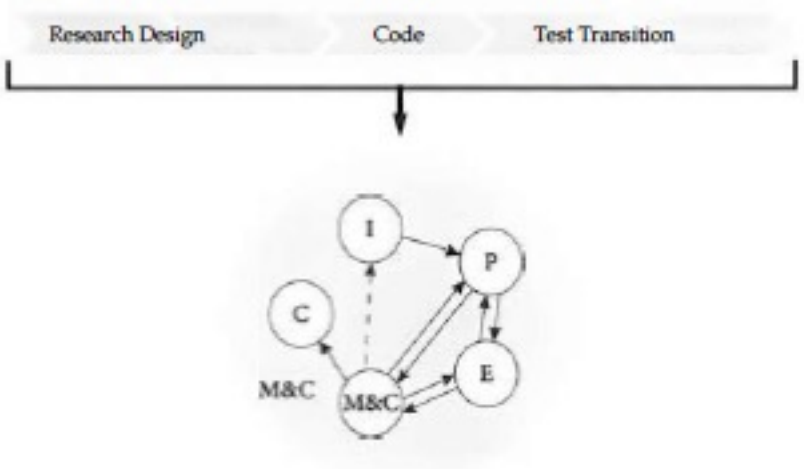
- It is a combination of a predictive and an adaptive development life cycle
  - Predictive life cycle is used to manager the project requirements that are well defined, while an adaptive life cycle is used to manage the requirements that are less clear

Project Management Process

- At the end of each phase, an event called a phase gate may take place that involves;
  - Analyzing the results of the completed phase by comparing the results of the phase with business documents, project charter and PM Plan
  - Large change-driven projects may also be broken down into phases and then into smaller releases and iterations within those phases
  - The PM processes of Initiating, Planning, Executing, M & C, Closing are done for each phase

Project Management Process

- PM process is what you need to do manage the work throughout the PLC
  - Initiation, Planning, Execution, M & C, Closing
  - Large projects often require each PLC phase to be managed through the PM process groups



Project Management Processes

INITIATING

- Select project manager
- Determine company culture and existing systems
- Collect processes, procedures, and historical information
- Divide large projects into phases or smaller projects
- Understand business case and benefits management plan
- Uncover initial requirements, assumptions, risks, constraints, and existing agreements
- Assess project and product feasibility within the given constraints
- Create measurable objectives and success criteria
- Develop project charter
- Identify stakeholders and determine their expectations, interest, influence, and impact
- Request changes
- Develop assumption log
- Develop stakeholder register

PLANNING
(This is the only process group with a set order.)

- Determine development approach, life cycle, and how you will plan for each knowledge area
- Define and prioritize requirements
- Create project scope statement
- Assess what to purchase and create procurement documents
- Determine planning team
- Create WBS and WBS dictionary
- Create activity list
- Create network diagram
- Estimate resource requirements
- Estimate activity durations and costs
- Determine critical path
- Develop schedule
- Develop budget
- Determine quality standards, processes, and metrics
- Determine team charters and all roles and responsibilities
- Plan communications and stakeholder engagement
- Perform risk identification, qualitative and quantitative risk analysis, and risk response planning
- Go back -- iterations
- Finalize procurement strategy and documents
- Create change and configuration management plans
- Finalize all management plans
- Develop realistic and sufficient project management plan and baselines
- Gain formal approval of the plan
- Hold kickoff meeting
- Request changes

EXECUTING

- Execute work according to the project management plan
- Produce product deliverables (product scope)
- Gather work performance data
- Request changes
- Implement only approved changes
- Continuously improve; perform progressive elaboration
- Follow processes
- Determine whether quality plan and processes are correct and effective
- Perform quality audits and issue quality report
- Acquire final team and physical resources
- Manage people
- Evaluate team and individual performance; provide training
- Hold team-building activities
- Give recognition and rewards
- Use issue logs
- Facilitate conflict resolution
- Release resources as work is completed
- Send and receive information, and solicit feedback
- Report on project performance
- Facilitate stakeholder engagement and manage expectations
- Hold meetings
- Evaluate sellers; negotiate and contract with sellers
- Use and share project knowledge
- Execute contingency plans
- Update project management plan and project documents

MONITORING & CONTROLLING

- Take action to monitor and control the project
- Measure performance against performance measurement baseline
- Measure performance against other metrics in the project management plan
- Analyze and evaluate data and performance
- Determine if variances warrant a corrective action or other change request(s)
- Influence factors that cause change
- Request changes
- Perform integrated change control
- Approve or reject changes
- Update project management plan and project documents
- Inform stakeholders of all change request results
- Monitor stakeholder engagement
- Confirm configuration compliance
- Create forecasts
- Gain customer's acceptance of interim deliverables
- Perform quality control
- Perform risk reviews, reassessments, and audits
- Manage reserves
- Manage, evaluate, and close procurements
- Evaluate use of physical resources

CLOSING

- Confirm work is done to requirements
- Complete final procurement closure
- Gain final acceptance of product
- Complete financial closure
- Hand off completed product
- Solicit customer's feedback about the project
- Complete final performance reporting
- Index and archive records
- Gather final lessons learned and update knowledge bases

Rita's Process Chart™
Where are we in the project management process?

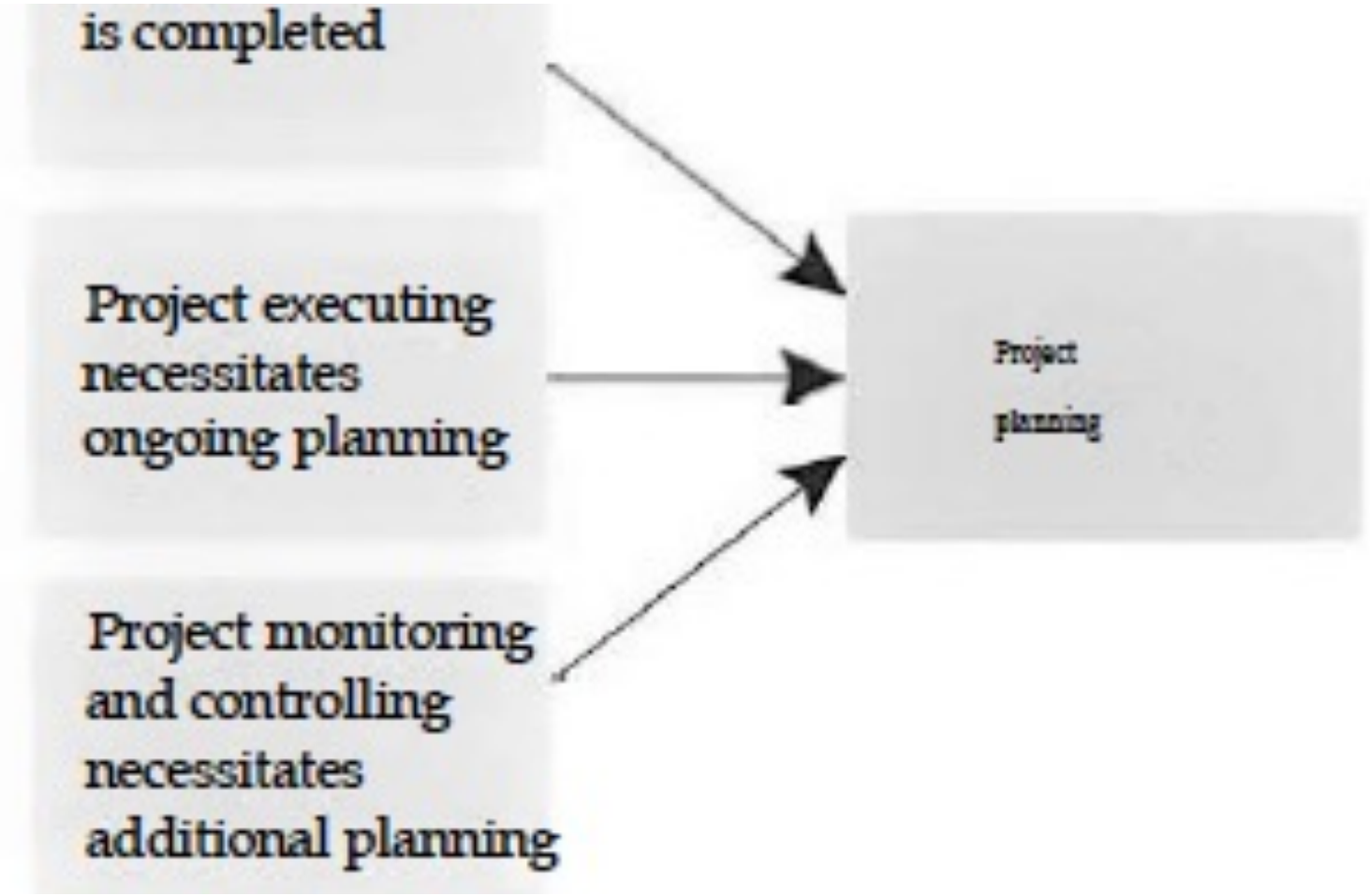
Initiating Process Group

- It involves identifying and analyzing stake holders to align their expectations about the project. It also provides;
  - A guiding vision for the project, the benefits the project will help achieve, high-level scope and any known constraints
  - The inputs to this group include;
    - Business case, product requirement document, list of stakeholders, historical estimates and WBSs, templates from past projects etc
  - Activities done during project initiation include High level planning (high level WBS, order-of-magnitude estimating, high level risk identification)
    - This info helps to determine whether project has a chance of being successful before the organization commits money & resources to it

Planning Process Group

- Project planning entails walking through the project using a consistent process, iterating your plans (up to risk management plan), and getting the project organized in sufficient details;
  - It saves resources, time, money and encourage stakeholder buy-in and commitment to the project
  - It refines the high level requirements from project initiating so they are more specific and detailed, and look for additional requirements
  - Expand on the assumptions identified in project initiating and looking for new assumptions

Planning Process Group



Executing Process Group

- Its purpose is to complete the project work as defined in the PM plan to meet the project objectives and achieve the expected business value
  - Goal is to produce the project deliverables within the projects planned budget and schedule to deliver the agrees upon benefits
  - It involves engaging stakeholders, working with team to complete the work, following processes and communicating according to the plan

Executing Process Group

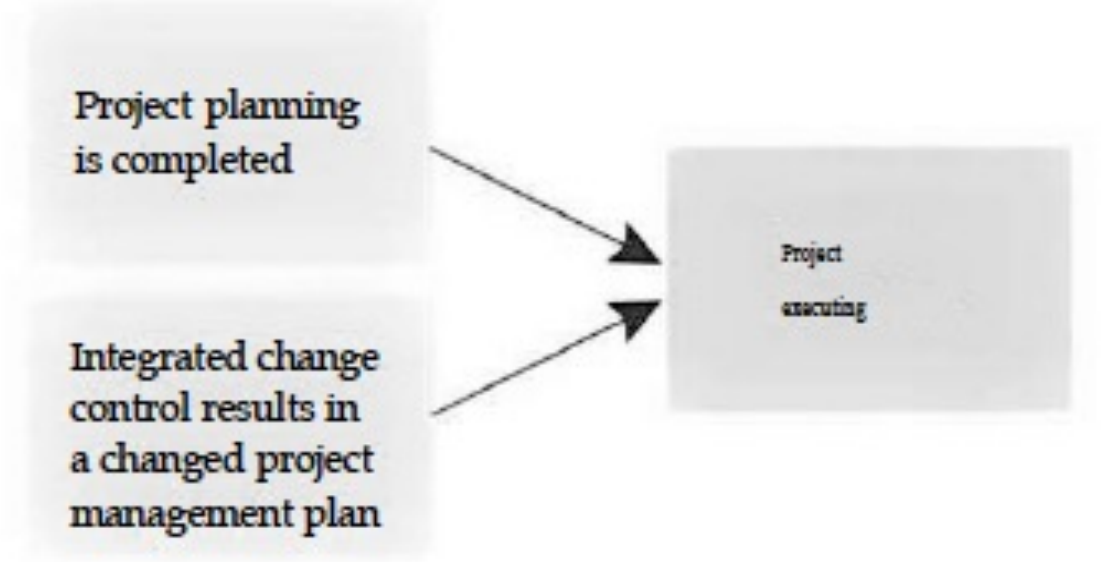


FIGURE 3.8 *Reasons for entering project executing*

Monitoring and Control Process Group (M&C)

- M&C are combined into one process group, but each has a different focus
  - In monitoring, Project managers will assess how stakeholders are participating, communicating, and feeling about the project, the work, and the uncertainties that have been identified
  - Controlling requires evaluating hard data on how the project is conforming to the plan and taking action to address variances;
    - By adjusting baselines, recommending changes etc
  - M&C also helps to determine the trend analysis, forecasting and estimating the remaining work

M & C Process Group

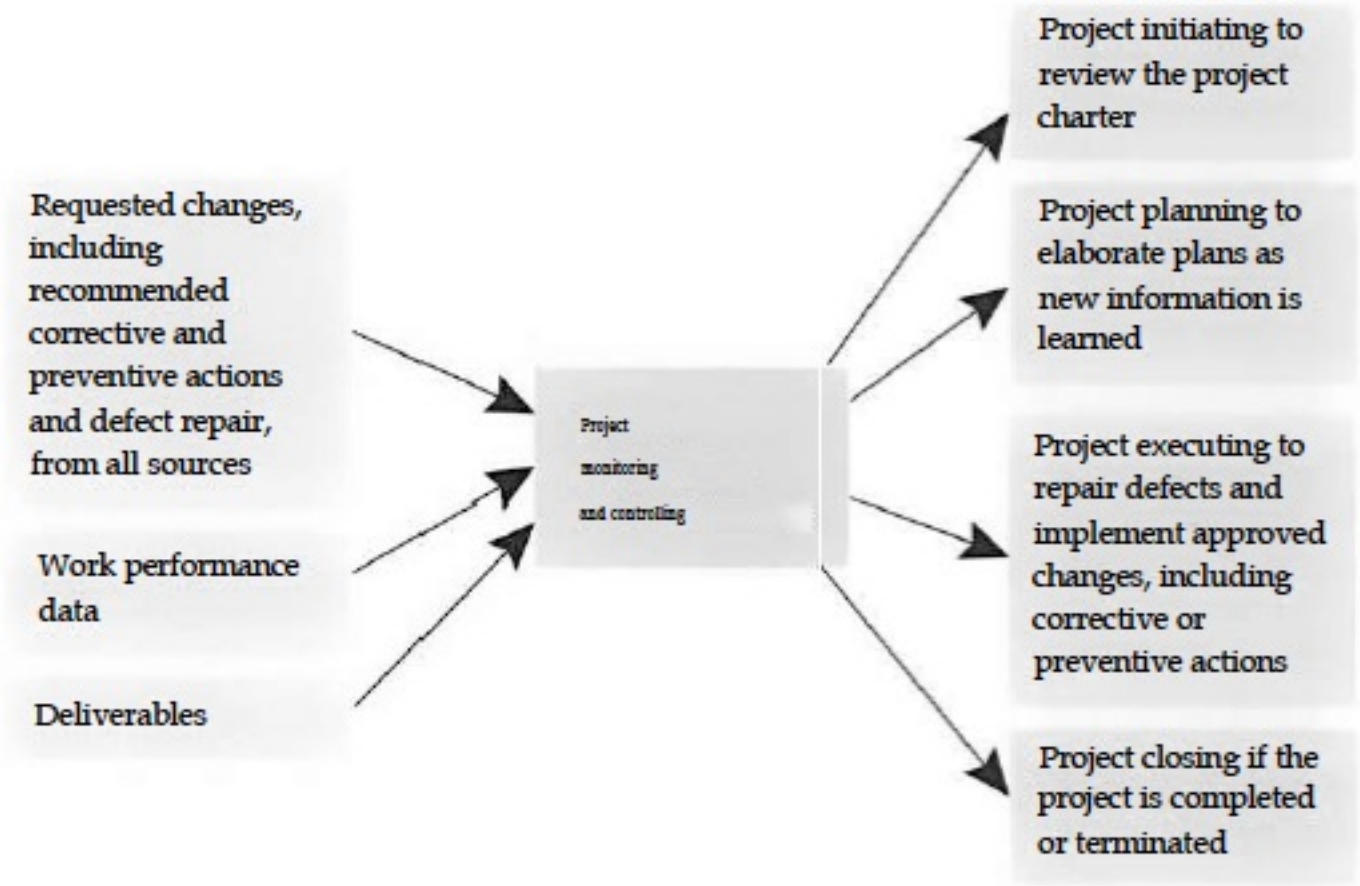


FIGURE 3.9 *Key outputs that trigger project monitoring and controlling, and potential next steps*

Closing Process Group

- Project closing includes administrative activities such as collecting and finalizing all the paperwork needed to complete the project, and technical work to confirm that the final product of the project is acceptable
  - It will also include any work needed to transfer the completed project to those who will use it and to solicit feedback from the customer about product and project
  - Satisfaction level of stakeholders are assessed & they are asked for input to improve processes & procedures on future projects
  - After the administrative pieces of project closure are completed and the customer, sponsor and other stakeholders provide formal sign-off, if the project is acceptable, the project is closed
    - At this time, any team members utilized to close the project or project phase are released

Closing Process Group

Figure 3.10 illustrates the reasons a project might enter the closing process group.

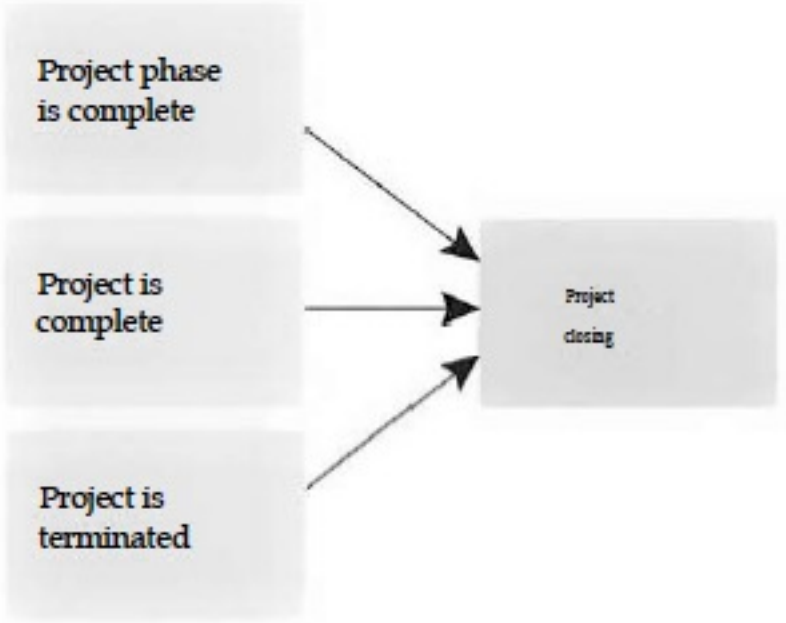


FIGURE 3.10 *Reasons for entering project closing*