The Team-builder Leadership Institute's

Universal Project Management

Standard Operating Procedures

Step by Step Guide to Project Management

Table of Contents

Project Management Standard Operating Procedures Introduction:

Use:

The Team-builder Leadership Institute's Project Management Standard Operating Procedures (S.O.P.) is designed to facilitate an on-time, on-budget, with the quality required project result. The processes and templates in this S.O.P. will lead you through a project, sequentially sharing processes that guide and facilitate timely and quality results. These processes are formal "Project Management" processes and apply to any project.

This S.O.P. is set-up through the five "Project Management Process Groups" that are the backbone of project management execution. This structure allows project management to be a fluid process that identifies and produces the desired results of on-time, on-budget, with the quality required.

Communications skills:

Also within this S.O.P. are the communication skills necessary to generate and build relationships throughout all aspects of your projects. These skills provide the project manager with methods to initiate relationships with project stakeholders, generate buy-in for project deadlines and deliverables, and build a team environment that provides a positive and goal focused environment.

Communication is the **key** to successful project management. By the nature of the position, project managers do not have authority over most of the individuals they work with on a project. The communication skills outlined in this S.O.P. allow the project manager to engage the project participants in a manner that generates positive relationships and individual buy-in for the project from all stakeholders.

Process templates:

In this S.O.P., many of the project management functions are performed using developed templates that allow the project manager and his/her team to quickly locate, use, and disseminate the necessary information. **This greatly reduces the amount of time required to perform many of the more cumbersome project planning and execution processes**.

1. In the Initiation phase of the project, the following are performed:

1.1 Select project manager

1.2 Project manager identifies all team members (including all five-process groups); both internal and external members (ex. work with other organizations but play an active part in the project).

1.3 Project manager begins—Key player *reciprocity program*—program begins relationships with all key players to ensure their support throughout the project.

1.4 Project manager—Identifies for the project process groups, what information to compile and store and what format to keep it in to create their project's project notebook.

1.5 Initiating Process Group Procedures (IPG):

1.6 IPG and PM—Engage client/sponsor in scope conversation; results in the ***project definition***.

1.7 IPG—Receives all authorization necessary for the expenditure of identified resources and initiation of project work.

1.8 IPG—Collects information for the Project Notebook throughout their operation.

1.1 Select the project manager:

The project is assigned to the individual selected to perform as the project manager for the project.

1.2 Identify all project team members

Select the individual or the group of individuals that will perform the functions in each of the five "Project Management Process Groups":

1. Initiating Process Group
2. Planning Process Group
3. Executing Process Group
4. Monitor and Controlling Process Group
5. Closing Process Group

Additionally, identify the team members that work within other organizations outside of your company. Identify both the internal members (within your company) and external participants (people that work with other organizations). Team members outside of the assigned process groups are individuals that help produce project deliverables and whose support is necessary for an on-time, on-budget, with the quality required project result.

1.2-a: Initial team communication process

Identify formal and informal team members.

- Formal team member—assigned as part of your team
- Informal team member—a person in a vital supporting role (has the power or position to enhance or complicate the project management process).

Introduce the team members to each other. Communicate to each team member his or her importance to the successful outcome of the project. Thank them for being part of OUR team and let them know how glad you are that they will be assisting you in defining, planning, and executing our project.

Your purpose in this communication is to first, build rapport and relationships with the team members, to get their support and buy-in for the project, and to assign team responsibilities, i.e., to which process group(s) they are assigned to and what duties they are to perform.

1.3 Project management key player reciprocity program

In order to ensure resource availability, deliverable consensus and acceptance, and process support, the project manager must identify all "Key Players." **Key players are individuals in a position that can play a role in the successful completion of the project**. In other words, key players are people that by the nature of their position have the power to negatively or positively affect your project—without even trying.

Example: The dock manager at the company that supplies the steel for the ten-story office building you are the project manager for. He or she ensures that the right gauge of steel goes to the right place at the right time. If they do not have a positive relationship with you (the project manager), they will not be overly concerned whether or not you get the right materials at the right time.

Identify all stakeholders who are in a position to have a significant positive or negative impact on the project's execution and/or outcome. In the opening days of the project, contact these stakeholders or "Key Players" in person when possible, by phone if not, and inquire about and determine their individual definition of success for your project. Offer any tangible assistance or service to them you have available. In other words, offer to help them --help you! Ask them what they need from you to be able to support you on your project. Your goal as the project manager is to communicate to them that you understand their definition of success for the project and are committed to delivering that result. Additionally, you want to create rapport with the stakeholder winning his/her support and ensuring he knows he has your support. Key players may be:

- Organizational leaders
- Procurement officers
- Vendors
- Suppliers
- Department managers
- Government employees or officials
- Functional managers within organizations
- Functional employees
- Subject matter experts

ETC…

1.4 Project notebook construction

In order to create historical data for training, efficiency, and future project ease and execution, all project team members must keep and store all information during the project that tells the story of how we (project team) did what we did. How did we complete the project on-time, on-budget, and with the quality required? This is a record of the lessons learned, what works, and what doesn't work. It is also captures templates of the "Work Break Down Structure" (WBS), critical path analysis, and risk analysis. Follow-up continuously throughout the project to ensure the necessary information is being stored and is being stored in your desired format (make certain you tell them at the beginning of the project what your desired format is).

To make the data effective for use, the PM must outline for all team members and process groups what information to keep and what format to keep it in. Possible formats are by functional area or processes. For example: if you were building a building, you may require your team members in each process group to store information in the following functional areas:

- Foundation
- Framing
- Roofing
- Plumbing
- Electrical
- Finishing
- Etc.

1.5 Initiating process group (definition phase) procedures

Scope *Template*

The purpose of the scope phase is to discover the exact requirements and deliverables of the proposed project. To facilitate a quick and accurate conversation identifying all the deliverables required in their sequence of production, this S.O.P. uses a brainstorming or "Mind Mapping" process. The process uses a brainstorming software application, research and questioning techniques, and specific knowledge of the physical aspects of the project.

Template instructions—Use the mind mapping tool (*see figure 1*) to quickly acquire the project's required deliverables. Begin by entering the overall client's project desired result in the center, then question client or clients' as to the particular functions (deliverables) and features they would like to have as result of undertaking the project. The deliverables will be on branches around the central idea (project result) starting from top right and going around to top left. You can drop and drag and move the content around to give the customer an exact visual image of what their project is. Use closed questions based on desired project results and where necessary, offer the client options (equipment or deliverables) that facilitate the result they are after.

1.6 Scope (project definition) communication:

This is the foundation of the project's success. Our goal here as the project manager is to get a specific definition for the project. We seek the exact picture of the 'successful project result' that is agreed upon by all sponsors and provides a *clear understanding of what the project is and the unified vision of the project agreed upon by all*. To that end, we are going to use both the tools and techniques that will facilitate that stated result. Participants in this conversation should include all sponsors, the initiating process group (or at least some members of the group), and the project manager. Including the initiating process group creates team buy-in, project goal(s) understanding, and generation of effective planning ideas from the process group's team members.

NOTE: It is understood that not all Scope definition conversations will include all the desired parties. As the PM, we must use the process with what and who is available to secure the clear understanding of the project's precise definition.

Using "Concept Draw Mind Map" (part of a project management software suite) or a like program, we will quickly and sequentially lead the entire group through the scope definition conversation to a unified consensus and end the session by providing every sponsor and group member with a printed copy of the definition of the agreed upon project.

The next step is to (in a dynamic project management tool such as Concept Draw Office Suite or Microsoft Project) input all the tasks required to generate the project's desired results. If using "Mind Map" you can import them directly from the mind map you created in the SCOPE conversation. After the import you will have your tasks in your project management software. You may need to add sub-tasks

once you verify through your "Work Break Down Structure" the complete list of tasks and activities required to produce the desired SCOPE or project. In the project management software you can then assign to each task, its required materials, duration, and labor (along with associated costs). Once you have entered the salary information, work units, and material costs into Concept Draw Project or like software and have assigned resources and durations to each task, the software will compute the costs of each task and place the task in the overall project schedule. Information included:

- Amount and type of labor required with hourly costs
- Material needed w/costs
- Supervision cost (PM)

It will also allow us to provide our customer with an accurate estimate based on the requested work scoped out and identified through the project definition process.

Leading the session at the opening, the project manager will introduce them self and the team members (the *Initiating Process Group*, if possible) and outline for the sponsors that the presence of the team members is to ensure customer results, satisfaction, and project quality along with expediting project planning.

The project manager will then move the meeting forward with a statement like, "I want to thank you all for coming; I know you are all very important to the organization and very busy individuals. In order to get you back to the important things you need to be doing, I will use this software ("Mind Map") to allow us to quickly capture the required project definition information and get you back to work. Is everyone alright with me using this visual aid to facilitate this conversation and get you back quickly to the important things you do?"

Stress how important and busy they are and how your only desire is to ensure their result and return to their important duties.

IMPORTANT:

In order to better facilitate the conversation the project manager must have read the project charter (provides maximum amount of resources that will be given to the project) and the desired deliverables or "End Result(s)". He/she must have a solid understanding of the general constrains in time, costs, people, and quality as well as physical and technical constraints.

Map out the conversation in a sequential format from the beginning or first deliverable, to the end and overall project desired result. Ensure every deliverable is identified and agreed upon. Use "Mind Map" to post and discuss each deliverable as you go through your conversation, recording each agreed upon deliverable in the "Mind Map" software.

Where there is disagreement on a point, offer potential options and alternatives based on the physical, technical, monetary (from the Charter) and any other constraints. Focus on what will provide the overall desired result and remind the sponsors that a consensus **must be reached now (during this meeting)** to move forward with the project.

Use the visual (Mind Map) to keep the SCOPE conversation participants focused on where in the definition conversation you are and the end result. Once the scope definition conversation is complete, print out a copy of the agreed upon scope definition for every participant to take with them.

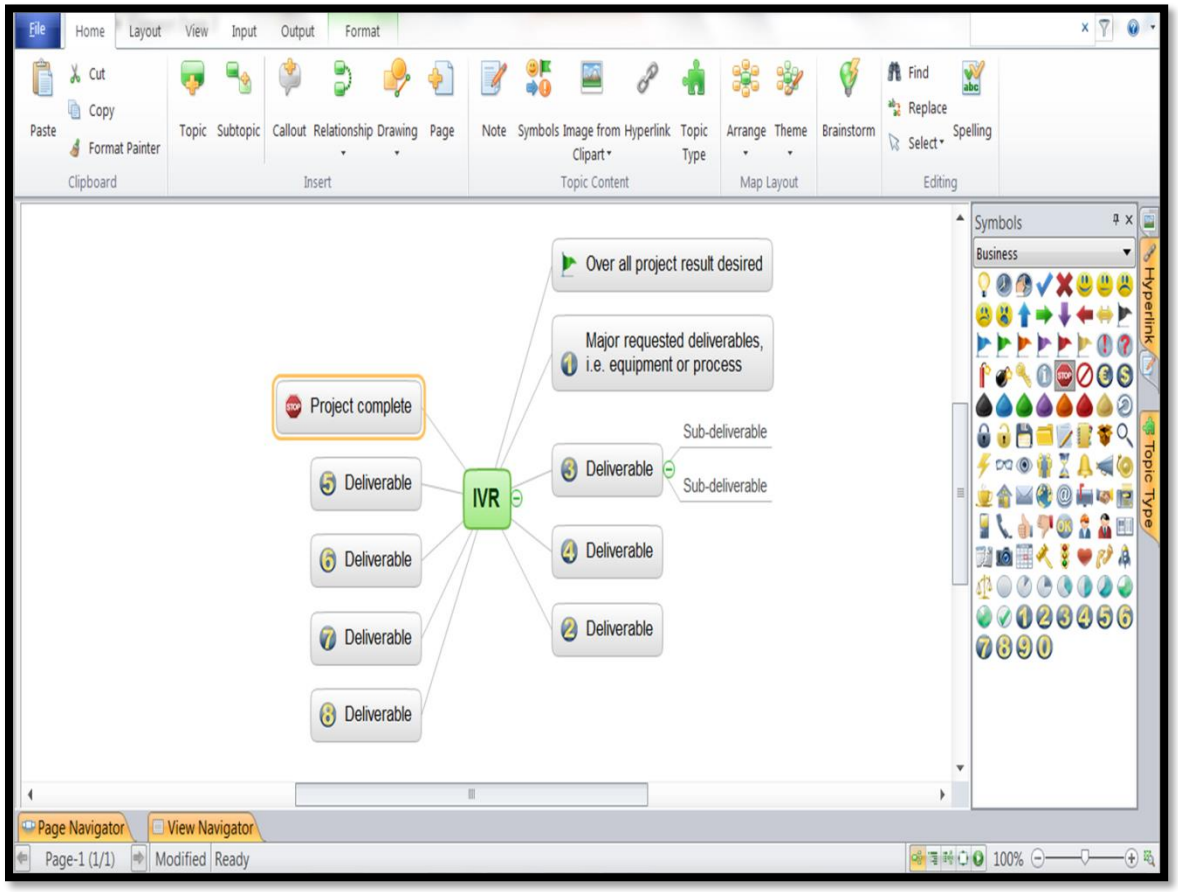
Integrated communication change process

Next, discuss and agree upon the way changes to the scope will be requested and responded to. Get the sponsors' buy-in for the Integrated Communication Change Process. Remind them; all changes must go through the agreed upon process to ensure their quality result. In project management, we use the process called, "The Integrated Communication Change Process" to ensure all scope change is authorized and funded and to keep every participant on the same project all the time. Before you close the SCOPE conversation with the sponsors, get agreement on using "The Integrated Communication Change Process." State to the sponsors, "I assume developing the project on-time and on-budget is important to all of you, is that a correct assumption?" The odds are you will get a yes to this question. Then state, "There is a change process used in project management methodology that keeps all participants on the same project all the time and uses controlled change instead of chaotic change saving time and money, would you like me to use it?"

After they respond with yes, outline the process and get their commitment that everyone involved in the project (including the sponsors) will use the process so we can bring the project in on-time on-budget, and with the quality required.

NOTE: Further into the project's lifecycle (processes) the PM will (if necessary) revisit the scope with the sponsors to clear up any particular points or questions and define details that were unavailable during the scope definition conversation. This will be performed during the Monitoring and Controlling Process and by the Monitor and Controlling Process Group.

Figure 1: Example of a very basic project's Mind Map



Focus your inquiry on desired project results and the deliverables that will achieve the required end result.

Definition example questions:

- What do you (the sponsors) want to be done?
- How will things be different if the project is successfully completed?
- If time, money, and feasibility were not an issue, what would you really like?
- If you ranked the various needs you have right now, where would this one fit?
- What are all the benefits you might get from this project?
- How important is this project to you?

- Research the need.
- Explore alternative solutions.
- Prepare a preliminary objective.
- Test your objective with the sponsor/client.

2. Project planning/planning process group (PPG):

2.1 Scope definition and planning

See S.O.P. section 1.5—the exact physical deliverables are identified as well as the processes (process deliverables) that will be needed to produce the required deliverables (using the "Mind Map" or like process). In the initiation stages of a project there are often deliverables that are discussed and known to be a required part of the project by the PM but are not detailed enough at that stage in the project to completely plan for them. These deliverables are known as *Rolling Wave Planning*, planning issues that are identified in the Planning phase for the Monitoring and Controlling Group to define the details of as the project moves forward and the details of those deliverables become able to be determined.

2.2 PPG—collects information for the Project Notebook throughout their operation.

2.3 PPG—use as TEMPLATE for future like projects—produces Work Breakdown Structure and activity definitions for all tasks required to produce the desired result (completed project).

2.4 PPG—produces:

a) Activity resource estimates
b) Activity duration estimating
c) Cost estimating (use as template for future like projects) and spreadsheet)
d) Cost Budgeting (use as template for future like projects) and spreadsheet)
e) Schedule and budget
f) Quality planning (minimum verses desired standard with stage checks)
g) Project communications planning (any required path or policy for sharing information and data)
h) Plan contracting (outside vendors needed)
i) Risk identification(use as template for future like projects)

2. Project planning

2.1 Creating the project lifecycle

After the SCOPE definition is developed by the IPG, the information is given to the *Planning Process Group* (PPG). The PPG will choose the necessary processes to build the Project's Lifecycle (the logical and sequential overarching path from the project's beginning to its completion) and create the desired results (successful project completion).

Since no two projects are the same, each project may have a different lifecycle. However, organizational projects do usually fall within the organization's area of expertise, meaning most projects undertaken by the organization will be similar in nature and execution to the project before it and to the next project. To that end, you should (as an organization and project manager) develop lifecycle templates over time to assist future organizational project managers in choosing an effective lifecycle for their (like) projects. In addition, using the previous like project's templates will greatly increase quality, efficiency, and reduce planning time and costs drastically.

One possible life cycle example for a product development project could be:

- Research and development
- Product design
- Prototype testing
- Marketing
- Etc.

Or:

- Define
- Plan
- Implement
- Monitor and adjust
- Close

Or:

- Foundation
- Framing
- Roofing
- Wiring
- Plumbing
- Finishing

Ensure you create the lifecycle that most effectively serves as a sequential path from the beginning of the project, smoothly, through to its completion.

The Project Life Cycle is simply the over-arching path to sequentially accomplish the project. The five process groups can be used on projects where they fit (ex. IT projects), however, often it is advantageous to make a more tailored life cycle (EX: for a house: foundation, framing, roofing, wiring, plumbing, finishing etc.). Within these lifecycle areas, the PM and the Planning Process Group will determine the most effective processes to achieve these life cycle objectives and will create a project plan using the identified processes. For example, what is the best way to determine the exact product the customer/client needs, to produce the result they desire? A possible process may be to have a client scope verification telephone conversation. The process could consist of the PM or planning team member calling the client with a predetermined set of relevant questions to ensure all the needed deliverables are identified, documented, and planned for.

2.2 Acquire and store information for the project's notebook

This document is a historical record that tells the story of how the project was undertaken and successfully completed. To that end, each process group must gather and store all information that tells us what we learned to do and what we learned not to do to achieve successful completion of the project. The information will be stored in a format that makes the information easy to use; examples may be by functional area, process, or even lifecycle phases. Unless otherwise specified by the PM, all groups will use the project's lifecycle phases to capture and store information for uniformity and ease of use. Creating a project notebook allows an organization and project managers to continually refine the processes they use resulting in greatly increased efficiency, quality, and dramatically reduced planning time. This is the result of using the major end items in the project plan (SCOPE statement, Work Break Down Structure, Budget, Schedule, Risk Analysis, etc.) as templates, in addition to the lessons learned.

2.3 Work breakdown structure (WBS) development

The WBS is a master list of all the tasks and activities required to successfully achieve the project's result. The Work Breakdown Structure is an integral part of an effective project plan. It tells the project manager what tasks, with what materials and how much manpower is required for every task and activity in the project. The WBS is a master list of all the tasks and activities required to produce the end result of the project. There are three rules we use when creating the WBS for a project:

1. **The 80 hour rule**—No task or activity should be in the WBS that takes over 80 man-hours to perform. If possible, decompose all tasks and activities to work packages that take less than 80 hours to perform. Meaning; break the tasks down into smaller segments of work if possible. It allows us to track and plan for the tasks more effectively.

2. **The 100% rule**—The WBS should contain 100% of the activities and tasks required to give us the result of the scope (the finished project), no less and no more.

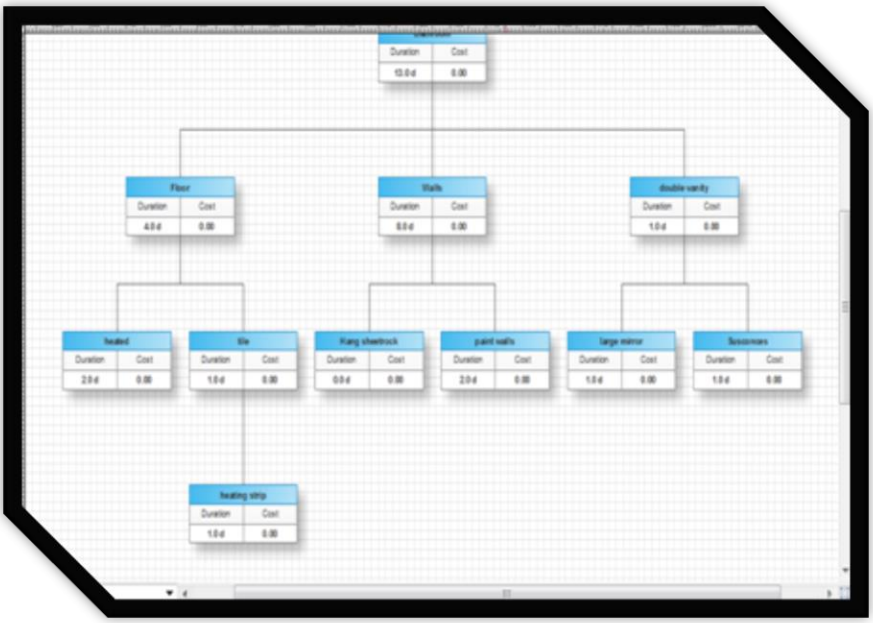
3. **The common sense rule**—All tasks and activities must be outcome and results oriented. If the task or activity does not provide a clear outcome or result to the project's overall result, then it should not be listed in the WBS.

Tips for creating the WBS:

- Use a task tree and decompose the project from the end result (completed project), down to the work package level (the task is small enough where we can manage the manpower and materials it takes to complete the task).
- Identify major work groups.
- Break the work groups down into tasks.
- Only break down the tasks and activities to a point where the manpower and materials can be effectively managed.
- Brainstorm the tasks with all team members and get subject matter experts (from those who can accurately identify what tasks are involved) guidance where necessary.
- Identify tasks, sub-tasks, and sub-subtasks.
- Identify task owners.
- Include industry standards and governmental regulations as minimum quality standards for each task.
- Consult subject matter experts to completely identify all tasks required to obtain the result of the finished project.

Examples of the two types of WBS formats:

Standard Format WBS (example, figure 2):



Outline Format WBS (example):

Title: *Design a training program*

1. Develop a goal analysis

    1.1 Meet with client
    1.2 Create a recommendation
    1.3 Obtain client approval
2. Develop a needs analysis
    2.1 Create analysis strategy
    2.2 Conduct needs analysis
    2.3 Review results with client

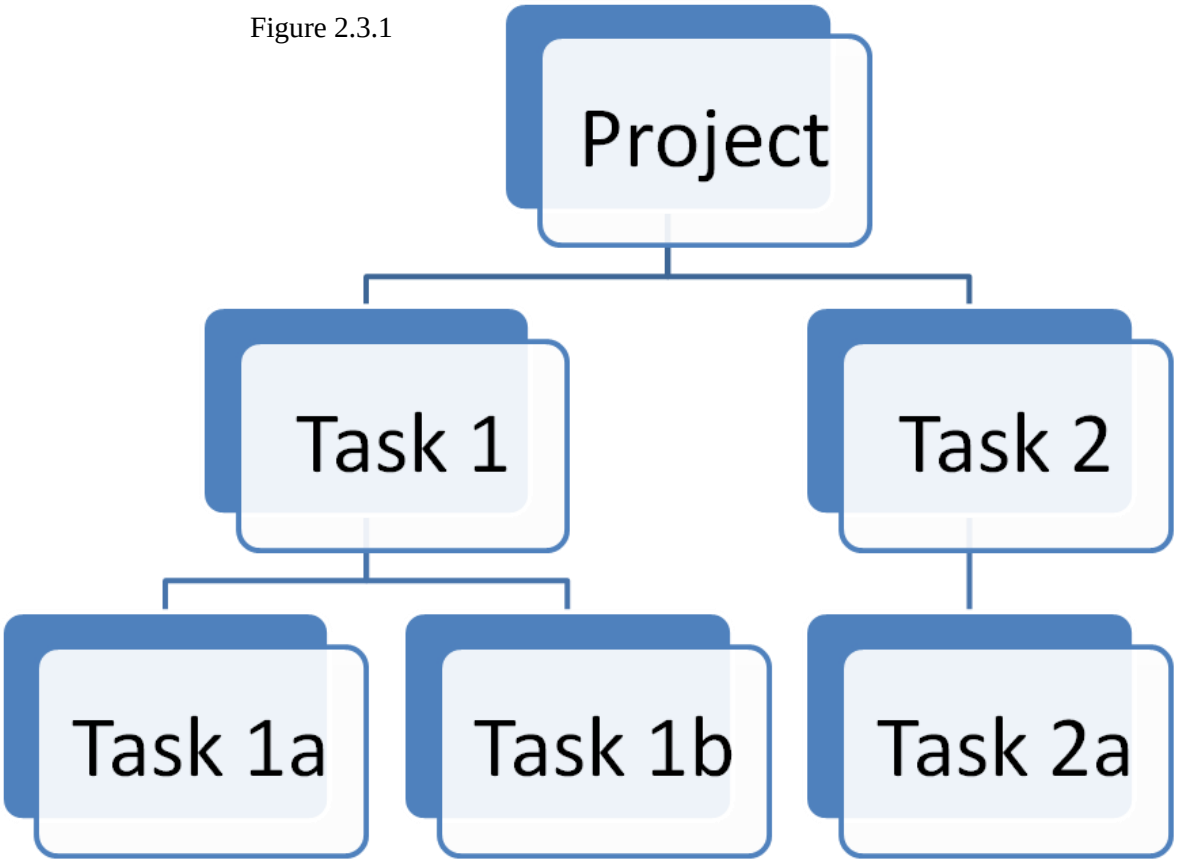
Figure 2 is produced by project management software (Concept Draw Office Suite in this case). The outline format is produced using a Microsoft Word or Project or some other software. The information in the two formats is exactly the same:

- Task name
- Task duration
- Task dependencies
- Task performers (i.e., electrical contractor or software developer)
- Task predecessors

2.3.1 Work break down structure (WBS) *template*

Create a flow chart (figure 2.3.1) like the one below. Use a task tree and start at the top with the overall project. Then decompose the project by starting with the tasks immediately before or one level below the finished project, then the tasks below those tasks etc. Continue to go lower in task levels until you get to the tasks that you know the amount of resources in time, cost, and people it takes to perform each task and you can manage the execution and completion of each task effectively.

Figure 2.3.1



Once you have identified all the tasks and activities required to create the project, determine the required labor, materials, and duration for each task and activity. Record that information with the task list so all tasks have with them the amount of material and labor requirements (this is done in project management software as materials and manpower are assigned to tasks). Add the supporting specific specifications and technical requirements in the WBS dictionary under the same task identification number or attach them to each task in the project management software.

2.3a The work break down structure (WBS) dictionary

The WBS will also be accompanied by a WBS dictionary. The WBS dictionary is a document that gives the specifications and details for each task, for example: hypothetical task 7.1.1 may be listed in the WBS as, “Develop hardware existing system integration software.” In the WBS dictionary the supporting specifics may be, task 7.1.1 “Develop hardware existing system integration software,” existing system format is OS2; converter interface to be installed is an IBM 27x3.

Use template (2.3.1a) below to list the required information for each task and activity required to produce the project. Include all the necessary specifications, procedures, and supporting information required to accurately complete all tasks to the minimum required quality standard. Fill out the below information for each task. Have the information with the WBS.

Task # __

Task Name _____

Task specifications:

Task performance requirements:

2.4 Project plan specifics

2.4a Activity resource estimates

After developing the WBS, the required activity resource amounts will be available. By using the WBS and compiling the required resources for each task, a total of the required materials, personnel, and special requirements can be obtained.

This can be accomplished by performing a task analysis on each task (use worksheet) which identifies the required resources for each task and then compiling the totals.

2.4b Activity duration estimates

After developing the WBS, the required activity duration periods will be available. By using the WBS and compiling the required resources for each task, a total of the time required to complete the activities or tasks can be obtained.

This can be accomplished by performing a task analysis on each task (use worksheet) which identifies the task duration for each task and then compiling the totals.

2.4c Project cost estimating

Cost estimating is a qualitative assessment of the likely costs of the resources required to complete scheduled activities. This includes but is not limited to; labor, materials, equipment, services, facilities, information technology, and special categories such as inflation allowance or cost contingency reserves. Using the WBS and its accompanying dictionary you can accurately estimate the labor and materials cost for each task and activity. Place in an excel spreadsheet with the following headings (can be done with project management software such as Concept Draw Project or Microsoft Project) (2.4c):

Figure 2.4c Cost estimating *template*

Task #	Task name	Labor cost	Material cost	total task baseline

Insert the formulas into excel to add up the cumulative totals. From the totals of all task and activities determines and overall required cost baseline for the project.

2.4d **Project cost budgeting**

Cost budgeting involves aggregating the estimated costs of individual scheduled activities or work packages to establish a total cost baseline for measuring project performance.

1. Create an excel spreadsheet with the following headings:

Figure 2.4d

Task segment 1	Task segment 2	Task segment 3	Task segment 4	Total project budget

2. Break your segments down into either quarters of the projects overall duration or process. Assign the labor costs based on the actual tasks and where in the budget the tasks are performed. Assign the materials costs in the same manner. Keep a daily cumulative total of the actual expenditures and balance the actual expenditures against the budget. Create a spreadsheet or use a PM software that will continuously update and calculate the running totals of expenditures versus actual budget.

3. Use the four factors: time, cost, people, and quality to keep the project's budget within the planned parameters.

2.4e **Schedule and budget**

Using the task durations and the cost estimates and budgeting we can now produce the project's schedule and budget. Produce a schedule representation, i.e., Gantt chart to be used in tracking and monitoring the project's progress.

Assign costs and expenditures based on the phases of the project's lifecycle or for a single-phase life cycle, break the budget and expenditures into smaller increments. The project's duration can be broken into quarters (divide the project's projected duration by 4), or the budget can be based on functional areas or processes, i.e., hardware installation, software development, integration process. Choose the method most effective to control expenditures for the particular project you are managing.

2.4f Project quality planning

Project manager will identify and choose quality standards testing and verification tasks to:

a. ensures the required quality based on industry standards, government regulations, and project requirements are met.

b. receives customer/client verification and deliverable approval

These tasks will be listed in the WBS and will include the testing process, materials, participants, and quality standards to be met.

Quality planning (minimum verses desired standard with stage checks)

For every project, there is a minimum required quality to be met. Using specifications, industry standards, and any regulated requirements, determine the minimum quality standard (materials and specifications) for the project being planned. Verify the quality standard with the client and management. Discuss the additional costs and results associated with increased quality.

Choose incremental project quality verification checks to formally schedule quality assurance. Schedule quality verification processes to demonstrate for and get quality verification and approval from the customer/client.

2.4g Project communications planning

(See EPG project communications process)

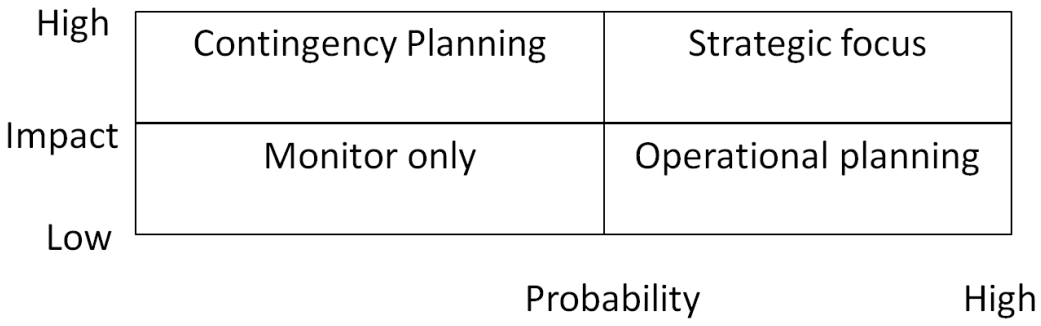
2.4h Project plan contracting

PM must identify any required external task performance requirements and include associated time and budget requirements into the project's overall plan.

2.4i Project risk identification/planning

The risk analysis is performed to identify all the potential problems that can stop or negatively affect the project in the categories: time, cost, people, and quality. To identify potential problems, a brain storming session and a data capture program, for instance "Mind Map", are used to compile a complete list of potential issues in each of the four areas. After the potential issues are identified, plans to negate the issues and prepare for them are generated by analyzing each issue by selecting the amount of risk you believe the issue generates (Low) (Medium) (High). The issues are each evaluated based on their *Probability* and *Impact*. Each is judged by the degree of damage (percentage) the project would suffer if the issue where to take place. Once each potential issues impact has been assessed [(Low) (Medium) (High)], then using the below (figure 3) problem solution planning matrix, determine the actions to be taken to plan for and prepare for each of the potential issues and ensure it has a negligible effect on the project.

Figure 3 Risk identification template:



1. Using excel or word, break your project down into the areas: Time, Costs, People, and Quality. Next, taking each area one at a time, identify every issue that can go wrong in that area that would potentially stop or delay the project.

2. After compiling the list for each area, determine whether the issue, if it were to occur, would have a high impact on the project or a low impact.

3. Determine if the issue has a high probability or a low probability of happening. Using the above chart (figure 3), determine a course of action.

4. Record, for each issue, what step(s) must be taken to negate the damage in the event the issue materializes during the project.

5. Have the information on your created action plans available in one collective body of information (standard operating procedure) with the entire team knowing where the plans are and knowing how to use the information.

2.5 Project notebook construction

In order to create historical data for training, efficiency, and effectiveness, all project team members must keep and store all information during the project that tells the story of how we (PM team and organization) did what we did. How did we complete the project on-time, on-budget, and with the quality required? What did we learn that works? What could we do differently on the next project to increase our effectiveness? This is a record of the lessons learned, what works, what doesn't. Follow-up continuously throughout the project to ensure the necessary information is being stored and is being stored in your desired format.

To make the data effective for use, the PM must outline for all team members and process groups what information to keep and what format to keep it in. Possible formats are by functional area or process. For example, if you were building a building you may require your teams to store information in the following functional areas: Foundation, Framing, Roofing, Plumbing, Electrical, Finishing, Etc.

3. Executing process group (EPG)

EPG will provide a complete inventory of all the processes to be executed to the CPG to allow for the closing and verification of deliverables for each project process.

3.1 Perform quality assurance process

Administer and execute QA program as outlined in section 2.4f

3.2 Process identification and execution

Using the processes outlined in section 2. Planning Process Group, assign team members to each task and brief them on the task outputs, activities, deliverables, and scheduling.

3.3 Project Notebook construction

In order to create historical data for training, efficiency, and effectiveness, all project team members must keep and store all information during the project that tells the story of how we (PM team) did what we did. How did we complete the project on-time, on-budget, and with the quality required? This is a record of the lessons learned, what works, what doesn't. Follow-up continuously throughout the project to ensure the necessary information is being stored and is being stored in your desired format.

To make the data effective for use, the PM must outline for all team members and process groups what information to keep and what format to keep it in. Possible formats are by functional area or process. For example, if you were building a building you may require your teams to store information in the following functional areas: Foundation, Framing, Plumbing, Electrical, Etc.

4. Monitor and controlling process group (MCPG)

4.1 Scope verification process and rolling wave planning

MCPG—Review all project required deliverables, identify deliverables which could not be completely decomposed and/or outlined in detail at the onset of the project; identify at what point the necessary details for each deliverable will become available and schedule them to be completely scoped out (details defined) when the opportunity arises.

An example of a deliverable that could not be completely decomposed could be a stadium parking lot. When you begin the stadium project, you know there will be a parking lot but until the footprint of the stadium is down you don't know how much land you have left so you can choose the proper design and identify all the tasks required to create the parking area.

Create a schedule and definition process to gather the necessary details for each deliverable. For each deliverable that now can be seen in detail, the monitor and controlling process group identifies all tasks and activities it takes to create that deliverable. Once all details are acquired for a deliverable the information is provided to the planning process group for insertion into the project plan. The planning process group then issues a new plan to everyone involved in the project. This process ensures everyone is always working on the same project.

Provided to the PPG is the complete list of all the tasks and activities required to produce the completed deliverable for the project. If you (as an individual) are the project team (alone), incorporate these new deliverable details into the existing project plan to include: SCOPE, WBS, budget, work schedules. Brief all stakeholders on the identified deliverables and their details as outlined in the communication process.

4.2 Disposition all scope change requests

Project planning and execution requires a dynamic plan, monitoring, and management—not static one. On a project of any size or complexity, change is a daily occurrence. In order for us as the project manager to have a workable and efficient plan that will ensure our success, we must use techniques and tools that will allow for change but in a manner that does not require unnecessary time and energy to maintain.

Change in a project is understood to be a constant. In order to ensure that change in a project is controlled instead of chaotic, all change is managed using the *Integrated Communication Change Process*. All change requests are submitted to the MCPG stating the requested changes.

Once the change request is received by the MCPG, they then add to the request form what effect the requested change would have on the project and how much it would cost in time, manpower, and materials. The MCPG also includes a date (I call a drop-dead date). If the sponsors of the project have not made a decision on the requested change by that date and return that decision to the MCPG, the project

will be in that area the change that was requested will mean undoing what has already been done, resulting in a waste of materials and resources.

If the change is approved, the MCPG identifies all tasks and activities it takes to produce the approved change deliverables and provides that information to the PPG. The PPG then adds the new and/or adjusted tasks and activities to the project plan and issues the new project plan to all project participants ensuring that all project participants are always working on the same project all the time.

4.3 Schedule control monitoring process

Monitor task scheduling, predecessors, dependencies, along with special requirements and ensure all resources are in place and available for each task to be initiated on time. Monitor the Critical Path Tasks and ensure they are supported so they ***will*** start and finish on schedule. Use the communications process to notify key-players of upcoming tasks they are involved in.

4.4 Cost control monitoring process

Based on your chosen method of budgeting as outlined in 2.4e, use a tracking devise (software, i.e., excel) to continuously monitor expenditures. Measure daily-accumulated expenditures against the budget for the quarter or functional area, depending on the method of budgeting you have chosen.

If you find you are over budget, look at the time, costs, quality, and people in the project. Look for places whereby using one or adjusting one you can make up ground in the other. For instance, often times a piece of machinery can offset the salaries of several people. The initial equipment fee may be significant but the purchase actually saves money throughout the entire life of the project. Alternatively, it could be the reverse; a few salaried individuals may be able to do the work as well as a costly piece of equipment. The goal here is to adjust through the four management categories, time, cost, people, and quality and ensure you stay within your budgeted amount for the tracking period.

4.5 Quality control monitoring

Quality standards for your project were identified by the PPG. Using the required quality standards and the scheduled project stage checks, continuously monitor the quality of the project. Ensure the correct specifications are adhered to, the correct materials are used, and the correct deliverables are designed and created. Ensure quality testing is performed as scheduled and the required standards are met.

Using the WBS, determine and record the required quality standards for each task involved in the production of the overall project result. These standards were identified by the PPG. Use the below template for each task to determine its quality is met or exceeded:

Figure 4.5 quality control verification *template*:

Quality Control Verification

Task #:

Required quality standard:

Task deliverable:

Quality status:

Recommended quality changes:

4.6 Monitor and manage all processes

Monitor all processes being performed on the project. Ensure each process and task has the material and resource support required for a successful outcome. Ensure that each task performer is aware of upcoming tasks and are prepared for the on-time beginning and ending of the tasks and processes. Pay close attention to all critical path tasks (tasks that if they begin late put the entire project behind); it is imperative that these tasks have all the materials and resources and are started on-time or before time if possible.

Use time, costs, people, and quality to adjust and keep each task and process on-time and on-budget, with the quality required. Use a Gantt chart and/or a PERT chart to track the scheduling and actual execution of the tasks and processes. A Gantt Chart easily tracks the scheduling dates for tasks, the miles stones of the project, the tasks that are dependent on other tasks (both internal to your team and tasks being performed by external participants, i.e., contractor or vendors), and it displays the critical task currently in the scheduling window.

A PERT chart is the most effective “project management” device but is unnecessary if the project is not a complex project and if the duties of the task performers are not within the same skills arena. For most projects, a Gantt chart will provide the level of scrutiny, monitoring, and management needed to bring the project in on-time, on-budget, with the quality required.

4.7 Performance reporting process

Using the communications process, use the outlined process to report the project's status to all stakeholders through the methods and methodologies the process provides.

4.8 Manage project stakeholders

Using the communications process, use the outlined process to communicate the project's status, needed changes, delivery completion, and next steps to all stakeholders through the methods and methodologies the process provides.

Use the outlined time periods and methodologies adjusted based on the personalities of the different communications styles of the key players, team members, and stakeholders in your project. Use the below template to identify the communication style of project participants and adjust to their communication needs to ensure their continued support of the project plan.

Figure 4.8:

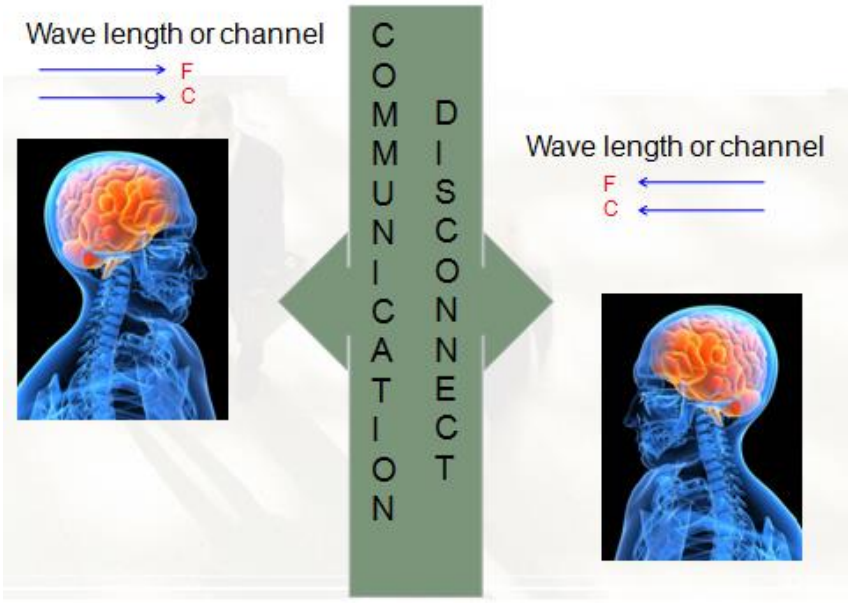


Figure 4.8a: *Due to different belief systems and communications styles of individuals, people communicate on different wavelengths or channels. We often hear and understand the words they use (English), but do not understand why they are using the words the way they are.*

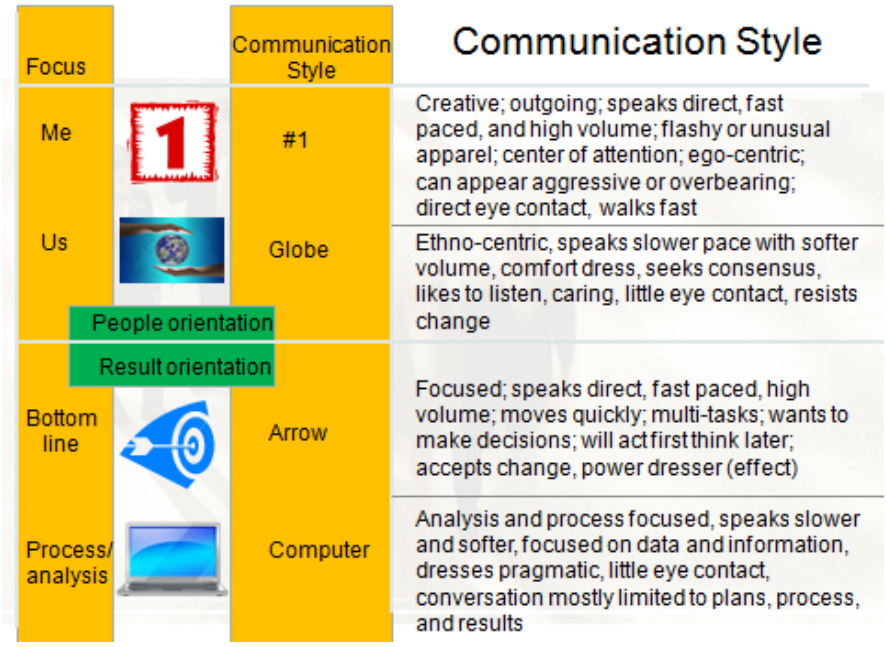
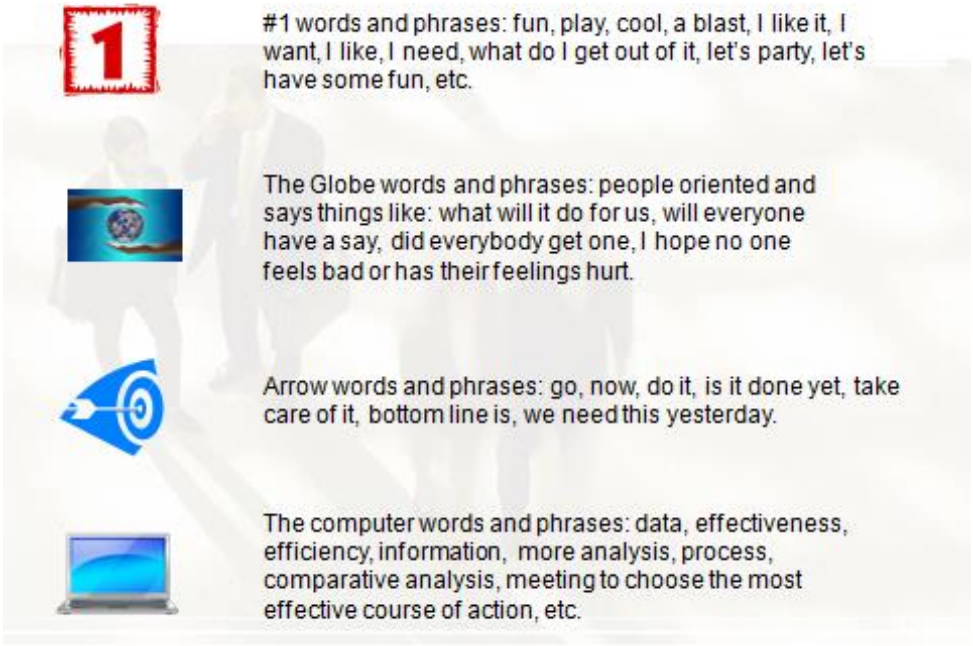


Figure 4.8b: *In the above figure, we see the traits and characteristics of the four different communications styles. In order to effectively manage project key players, team members, and stakeholders we must first identify their individual communication style. Next, when we communicate to them we do it through their words, phrases, and focus so they understand what we said; why we said it, and most importantly, they liked the way we said it. This information is a consensus-building tool. Ensure all communication is provided through the receiving individual's communication style.*

Figure



4.8b *The above figure shows the types of words the different communication styles use. Use the information to learn to recognize and use each individual's communication style and develop rapport or instant likeability with them.*

Additionally, ensure when you speak to project participants your communication is *assertive*:

- Mission focused
- Fact based
- Results oriented
- With no negative emotions

Provide individuals with the facts that produce the desired results that lead to the successful completion of the mission. You can smile and be as polite as you wish and will not distract the individual from the content of your message. However, if you use negative emotions: no smile, stoic gaze, anger, or inpatients, etc., the receiver will be more focused on the delivery style of your information than they will the content of the message.

4.9 Risk monitoring and controlling

MCPG will use the risk analysis provided by the PPG as a guideline to monitor the project's potential risks. In addition to the risk analysis, the MCPG will monitor the project's plan and its deliverables looking for any unidentified risks. Any unidentified risks will be written into the risk analysis with the appropriate planning performed based on the analysis and solution matrix.

MCPG will submit process changes needed based on the identified risks to management for change approval.

4.10 Contract administration—monitoring, reporting, and meeting contract requirements

MCPG and/or PM will communicate all contract deliverables met as outlined through the communications process.

4.11MCPG **Project notebook construction**

In order to create historical data for training, efficiency, and effectiveness, all project team members must keep and store all information during the project that tells the story of how we (PM team) did what we did. How we completed the project on-time, on-budget, and with the quality required? This is a record of the lessons learned, what works, what doesn't. Follow-up continuously throughout the project to ensure the necessary information is being stored and is being stored in your desired format.

To make the data effective for use, the PM must outline for all team members and process groups what information to keep and what format to keep it in. Possible formats are by functional area or processes. For example if you were building a building, you may require your teams to store information in the following functional areas: Foundation, Framing, Roofing, Plumbing, Electrical, Finishing, Etc.

5. Closing process group (CPG)

5.1 Close out all executed project processes

CPG will receive an inventory of project processes from the EPG. Using the process inventory, schedule, and the project plan, the CPG verifies the completion and acceptance of every project deliverable. The verification authority is the sponsor/client or their representative. Schedule a meeting to verify the outlined project deliverables or determine another verification process, i.e., emailed scope deliverable agreed upon deliverables with an outline of their competition, requesting sponsor verification and reply. Every deliverable should be verified with the sponsor for acceptance as it is completed. Closing each deliverable out or getting acceptance for them as they are completed ensures we do not waste time or resources. In addition, if any mistakes are made the change is to one deliverable, NOT several or many.

5.2 Initiate project and/or phase verification process

Use the list of project deliverables from the initiating and planning process groups and use the below template to verify deliverable acceptance by the project sponsors:

Deliverable acceptance *template*

Deliverable Acceptance Template

Project phase _____

Deliverable name _____

Required quality standard (s) and specifications:
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Verification Date_____

Verifying sponsor name _____

Meets standards ☐ Does not meet standard ☐

For a multi-phase project, the CPG will verify with the sponsor all the deliverables agreed upon to be produced during the entire project and/or each phase of a multi-phase project.

5.3 Compile project notebook

CPG gets from each process group, the information they are compiling for the project's notebook. Keep the information in the outlined categories as directed by the PM. Have the project's notebook completely assembled to include: table of contents, index, and glossary and provide for the PM so they can give their end of project report using the notebook.

Project Communication Plan

Initiating Communications Processes

Key player communication

Initial team communication

Scope definition communication

Planning Communications Processes

Planning task assignments communication

Daily follow-up contacts (team)

Client periodic contact communication

Executing Communications Processes

Planning execution communication

Monitor and Controlling Communications Processes

Progress reporting stakeholder communication

Closing Communications Processes

Process and phase completion communication

Key player communications process

Identify key players

Key players are people that by the nature of their position, they have the power to force a project off schedule and budget without even trying. Ex., you are building a ten story building downtown. You are getting your steel from IWD Steel. The Dock manager (Bob) at IWD Steel ensures the right steel goes out to the right place at the right time. Can Bob just by not ensuring you get the right steel at the right time knock you off schedule and budget? Unfortunately, the answer is yes. Every project has "Key Players." Our job as the project manager is to identify them and build a relationship with them so they care whether we get the right steel at the right time and even ensure we do. This is where your *Reciprocity Program* comes into play.

Identify all key players in the opening days of the project, contact these key players in person, when possible, by phone if not, inquire about and determine what you can do for them to give them a result they want and need. Offer any tangible assistance or service to them you have available that will meet a need they have. If what you do for them isn't something they need and want, your gesture will have no effect. Ask them is there anything they need to help them support your project. Let them know anything they need you will immediately try to meet that need. Do this on a regular basis. Make certain the conversations are focused on you trying to help them and not what they can do for you. If you do this right, when you do need something you will have built up enough relationship with them and good will so they will be there for you and the project.

Key players may be:

- Organizational leaders
- Procurement officers
- Vendors
- Suppliers
- Government employees or officials
- Functional managers within organizations
- Functional employees
- Subject matter experts
- ETC…

Initial team communication process

Identify formal and informal team members.

Formal team member—assigned as part of your team

Informal team member—a person in a vital supporting role (has the power or position to enhance or complicate the project management process)

Outline and introduce the team members and their team roles to one another. Communicate to each team member his or her importance to the successful outcome to the project. Thank them for being part of OUR team and let them know how glad you are that they will be assisting you in defining, planning, and executing the project.

Your purpose in this communication is to first, build rapport and relationship with the team members, second, to get their support and for the project, and third, assign team member responsibilities.

PM will discuss the Project Notebook creating process with all team members, including what information to save and in what format to save it. Effective methods of saving information are by process or functional area.

Scope definition communication

This is the foundation of the project's success. Our goal here is to get a specific and agreed upon by all sponsors understanding of what the project is. To that end, we are going to use both the tools and techniques that will get us that agreed upon project definition. Participants in this conversation should include all sponsors, the initiating process group, and the project manager. Including the initiating process group creates team buy-in, project goal understanding, and generation of effective planning ideas form the process group team members.

Using Concept Draw Mind Map (or like brain storming tool) we will quickly and sequentially lead the entire group through the scope conversation to a unified consensus and end the session by providing every sponsor and group member with a printed consensus of what the project is.

Leading the session at the opening of the SCOPE conversation, the project manager will introduce himself and the team members and outline for the sponsors the need for the presence of the team members—which is to ensure customer results, satisfaction, and project quality.

The project manager will then move the meeting forward with a statement like, "I know you are all very important to your organization and very bust individuals. In order to get what we need to ensure your desired results and get you back to your vital activities, I will use this software, "Mind Map" to get us quickly through our conversation, gather consensus, and get to work on your desired result. Is every one alright with me using this visual aid to facilitate this conversation?"

Stress how important and busy each sponsor is and how your only desire is to ensure their result and return to their important duties.

IMPORTANT:

In order to have this conversation the project manager must have read the project charter and the desired deliverables. He must have a solid understanding of the general constrains in time and budget, as well as, physical and technical.

Map out the conversation in a sequential format from the beginning or first deliverable, to the end and overall project definition with all deliverables identified. Ensure every deliverable is discussed and agreed upon. Use "Mind Map" to record and discuss each deliverable as you go through the SCOPE conversation.

Where there is disagreement on a point, offer options based on the physical, technical, and other constraints. Focus on what will provide the overall desired results and ensure a consensus is reached on each deliverable keeping the project moving forward.

Use the visual to keep participants focused on where in the conversation you are and to keep them focused on the process. Once the scope definition conversation is complete, print out a copy of the agreed upon scope definition for every participant to take with them at the close of the meeting.

Next, discuss and agree upon the process that changes to the scope will be requested and carried out. Ask the sponsor(s) if they would like you to run the project with minimum material waste and stay on schedule? Most likely, they will say absolutely. Introduce them to the Integrated Communication Change Process and let them know if they will all agree to use the process, it will greatly increase the possibility of an on-time, on-budget, with the quality required project completion.

Planning communications process

Planning task assignment communication

As soon as the Scope is agreed upon, the PM gathers the team and with them, selects the processes that are appropriate for each particular project. Due to similarities in projects, templates are available for project planning and able to be tailored to each specific project. All tasks in the plan must be assigned to include completion deadlines. PM, ask for volunteers for the tasks and on completion deadlines. Use the project's needed results to get flexibility from team members on task assignments and completion dates.

Daily follow-up contacts

Since meeting with team members in many different locations are impractical, the PM must use another methods to receive, disseminate information, and build team member relationships. The project manager must also use a method that builds team commitment, sets common expectations, and allows for potential problems to be spotted early. To that end, the PM will schedule a morning period (i.e. from 9am to 10am) daily, to contact all team members and offer support, check on results and availability of resources, and learn about any potential issues.

This communication consists of calling each team member daily and asking: "do you need anything, anything I can do for you, you got anything for me?"

This will take a few seconds for each team member, most will say, "No, no, and no." What it will do is show your support, let them know you are looking after their wellbeing and success, and provide a scheduled opportunity to share needed information on both parts. You might have a meeting coming up so this will be a good time to let them know quickly, when and where. They may have found out something the PM needs to know about yesterday afternoon or first thing in the morning; the regular scheduled conversations give the PM the ability to quickly get needed information, provide needed information, build relationships, and eliminate the need for most meetings.

Let them know at the start of the project you will use this method to take care of them and keep the project running smooth as well as the lines of communication open.

Client periodic contact communications

As an added service to the clients and sponsors, the PM will communicate to them the status of the project twice weekly. Let the client know that they do not have to chase down information. The PM will communicate the project's statues to the client(s) twice weekly by one of the follow formats of their choice:

- Phone
- E-mail
- Instant messaging
- Tele-video

Executing communications process

Planning execution communication

The PM will, through his daily communication with his team, address every upcoming process to be executed and inquire as to the method that will be used to execute the plans. The purpose here is not to micromanage but rather to ensure that a process is being used that will provide the needed result, the PM is aware of the project's status at all times, and the PM gets buy in and commitment by having the team members to share their plan and what result it will bring.

As an additional service and project communication improvement, the PM will notify informal team members and necessary stakeholders at the start of the processes that will require their participation and will follow up with their next steps.

Monitor and controlling communications process

Progress reporting stakeholder communication

Rolling-wave planning issues that are identified by the Monitor and Controlling Process Group will be provided to the PM through the daily communication with team members. The PM will communicate the planning needs to the Planning Process Group.

As an additional service, every task and its completion status will be provide to all stakeholders on a weekly basis, in writing.

Closing communication process

Process and phase completion communications

The Closing Process Group will provide the PM with official notification as each process is completed. The PM will provide this update to all stakeholders with an update of the tasks remaining to be completed. If a multiphase project, the closing group will communicate the phase's scope verification status to the PM as well.

Index

Project Charter—The initial commitment and decision to undertake a project outlining a desired result and resources committed, includes a Statement of Work and Contract or for internal projects, a feasibility study.

Reciprocity—the act of initiating interaction and eventually a positive relationship with others by taking the first step and providing them things that will give them a result they need and want. Because they received a result they wanted with no strings attached, they will automatically feel they need to reciprocate and return the favor.

Subject matter expert—an individual professionally qualified with proven experience and results in the task or tasks being identified, researched, and discussed.

Work Break Down Structure Dictionary can be attached to tasks or in a separate document. Each task requiring technical information, or any other required information to successfully perform the task. Ex. assembling an automobile differential the gear variances, size, and type of gears to be used.

Work package level-The level to where a task has been decomposed or broken down to the point where the manpower and materials can be effectively managed. Ex: You would provide for the carpenter where to build the wall, what it is for structurally, and its dimensions, you would not tell them what type of nails to use or how to assemble the wall. The carpenter can use their expertise to perform their profession and as the project manager, you can manage or ensure the right materials are being used the right way without telling them how to perform the details of their profession.

Project management software

Project management is a dynamic process requiring the ability to quickly update planning and assimilate change. Small simple projects require much less flexibility than large complex projects. Projects that are repetitive and performed by organizational areas or the same group of people require an emphasis on network communication and collaboration. Projects that have an assigned project manager who is responsible for the daily activities and overall results require a complete project planning, monitoring, and management tool. This type of tool is dynamic. A change to any part of the plan is instantly updated throughout the plan.

These tools provide not only for the tracking of a project but they also provide for all the major planning processes in project management not included in most self-titled project management tools. I call these tools fully functional project management tools, examples are: Microsoft Project and Concept Draw Office Suite. Both of these software tools are full project management dynamics tools.

There are many other softwares and online tools that provide different levels of project management functionality, however, most only provide communication tools comparable to e-mail or tracking like a Gantt Chart. These less than fully functional project management tools are more static than they are dynamic when it comes to the instant updating and changing of the project plan.

To simplify the choice of tools for the proper project management tools for tracking, monitoring, and managing your project, here are a few softwares you can choose from. Keep in mind there are many more, however there are basically three levels of project management software.

Level 1—This is a software with emphasis on communication and collaboration. Here individuals in different locations can be assigned tasks and sent messages. Access can be controlled by the administrator or project manager. These softwares would be good to share activities with coworkers and customers. An example would be an online software named Base Camp. It has a relatively small monthly fee.

Level 2—This level provides the level one capability but has enhanced project tracking capabilities. These softwares operate through a Gantt chart format and have lots of flexibility with tracking tasks and schedule. An example is an online software named Smart Sheet. This program has a much greater level of capability but doesn't have the dynamic flexibility and advanced project management process capability of the level three fully functional tools. Also, leve1 and 2 are centered around collaboration, shared responsibilities, and less complex more static types of projects.

Level 3—These tools are focused around a single project manager responsible for the planning, managing, and execution of the project. It provides the ability to share information from the software in several formats, i.e., e-mail, Power Point, Excel, Xms file, Mind Map, PDF. These softwares provide for the advanced processes in project management: Work Break Down Structure and Critical Path Analysis. Examples: Concept Draw Office Suite and Microsoft Project.

Project Management Planning Checklist

Project charter received by project manager.

Project manager pre-analysis assessment (Can it be done? Do I have what it takes to get it done?).

Management support meeting and resource acquisition meeting.

Assign team members to process groups.

Key player identification.

Initiate key player reciprocity program.

Scope meeting (using Mind Map if possible) (include members of the Initiating Process Group).

Get buy-in from sponsors for the use of the Integrated Communication Change Process.

Team buy-in and project planning meeting.

Outline for team members what information to keep in what format to create your project's notebook.

Choose project lifecycle and milestones.

Create project plan in its entirety including all components and processes: WBS, budget, schedule, risk analysis, etc.

Use the correct level of planning, managing, and executing tool. Static can be used for small simple projects but dynamic is required for large or complex projects.

Ensure rolling wave planning and progressive elaboration are constantly monitored and adjusted for.

Update plan daily to ensure accuracy and success.

Communicate daily with project team members focusing on relationship building, scheduling adherence, and information sharing multi-directionally.

GLOSSARY

Drop Dead Date: the date that if the decision is not made by the project will be past that point and any change after that date will cost more time and money. Tasks may have to be undone and resources wasted as well.

Dynamic: Dynamic projects are constantly changing and must have tools that can facilitate the plan's constant change (update) without spending lots of time performing administrative paperwork.

Integrated Communication Change Process (the path)**:**

1. *Change request form is submitted by a project stakeholder defining the change they are requesting and why they want it.*
2. *The change request form is submitted to the monitor and controlling process group.*
3. *The monitor and controlling process group researches and identifies the time and cost of the change and how it would affect the project's outcome. The monitor and control group then sends the change request to the project sponsors with a drop dead date.*
4. *The sponsors make a decision by the drop dead date and send their decision back to the monitor and controlling process group.*

PMBOK: "Project Management Body of Knowledge".

Project: A project is a **temporary** endeavor undertaken to create a **unique** product service or result.

Project Life Cycle: the overall process used to manage and complete a project. Each stage of the life cycle should be defined in a formal project plan. A project's lifecycle is made of processes chosen by the project manager and the project team and is design based on the specific needs of the project being worked on.

Physical deliverable: the actual results or outcomes of the projects activities. When you are done what you are looking at as a result of the efforts are your physical deliverables.

Process deliverables: the processes necessary to produce the physical deliverables, i.e., inspections, briefings, design phases, etc.

Progressive elaboration: are unforeseeable challenges that are present in all dynamic projects (static as well, just not nearly as much) requiring timely adjustments using the integrated communication change process.

Project Manager or PM: The delegated person assigned to oversee the macro and micro aspects of a project through to completion.

Project Process Groups: There are five Project Management process groups required for any project. These five process groups have clear dependencies and are performed in the same sequence on each project. These process groups are working within a single phase project or within each phase of a multiphase project.

1. **Initiating Process Group**–defines and authorizes a project or project phase.
2. **Planning Process Group**–defines and refines objectives, and plans the course of action required to obtain the objectives and scope that the project was undertaken to address.
3. **Executing Process Group**–Integrates people and other resources to carry out the project management plan for the project.
4. **Monitor and Controlling Process Group**–regularly measures and monitors progress to identify variances from the project management plan so the corrective action can be taken when necessary to meet project objectives.
5. **Closing Process Group**–Formalizes acceptance of the product, service, or result and brings a project or a project phase to an orderly end.

Reciprocity: a relationship between people involving the exchange of goods, services, favors, or obligations.

Rolling wave planning: As the project moves forward, variables in the environment change requiring that the plan is changed to reflect the environmental changes.

Static: not moving or changing, or fixed in position.

Successful Estimating; In order to create and accurately schedule and budget, we must have accurate task duration for all tasks in our project.

Weighted Average Technique:

O–the most optimistic time to finish the task

P–the most pessimistic time to finish the task

M–the most likely time to complete the task

E–estimated task duration

Work Breakdown Structure (WBS): The Work Breakdown structure is an integral part of the project plan. It tells the project manager who does what tasks with what materials and how much man power is required for every task and activity in the project. The WBS is a master list of all the task and activities in the project. There are three rules we use when creating the WBS for a project:

1. **The 80 hour rule**–No task or activity should be in the WBS that takes over 80 man hours to perform. If possible, decompose all tasks and activities to work packages that take less than 80 hours to perform.
2. **The 100% rule**–The WBS should contain 100% of the activities and tasks required to give us the result of the scope (the finished project), no less and no more.
3. **The common sense rule**–All tasks and activities must be outcome and results oriented. If the task or activity does not give a clear and task related outcome or result, it should not be listed in the WBS.