

PROCESSES

Domains or Process Groups Knowledge Areas	INITIATING (13%)	PLANNING (24%)	EXECUTING (30%)	MONITOR & CONTROL (25%)	CLOSING (8%)
INTEGRATION	Develop Project Charter	Develop Project Management Plan	Direct and Manage Project Work	Monitor & Control Project Work Perform Integrated Change Control	Close Project or Phase
SCOPE		Plan Scope Management Collect Requirements Define Scope Create WBS		Validate Scope Control Scope	
TIME		Plan Schedule Mgt. Define activities Sequence activities Estimate activities resources Estimate activities duration Develop Schedule		Control Schedule	
COST		Plan Cost Management Estimate Costs Determine Budget		Control Costs	
QUALITY		Plan Quality Management	Performance Quality Assurance	Control Quality	
HUMAN RESOURCES		Plan Human Resources Management	Acquire Project Team Develop Project Team Manage Project Team		
COMMUNICATION		Plan Communication Management	Manage Communication	Control Communication	
RISK		Plan Risk Management Estimate Risk Perform Qualitative Analysis Perform Quantitative Analysis Plan risk response		Control Risk	
PROCUREMENT		Plan Procurement Management	Conduct Procurement	Control Procurement (or Administer Procurement)	Close Procurement (include Legal Lessons Learned – LLL or "procurement audit")
STAKEHOLDER	Identify Stakeholders	Plan Stakeholder Management	Manage Stakeholder Engagement	Control Stakeholder Engagement	

DEFINITIONS

Need to know / Need to do	Processes that begin the project (start-begin)	Processes that create plans to govern the work (create-develop-identify)	Proc. that execute the plans and create work (manage-acquire)	Proc. that compare results & make adjust. (validate-review-M&C)	Proc. that complete the project, phase and create records (close)
<p>Focused in the bigger picture. Make sure that every part of the project is coordinated. High Level view. Bodywork analogy. Orchestra tuning and retuning concept.</p>	<p>Officially starts the projects. No charter → No project High level description of product, service or result of the project.</p>	<p>Guides the project execution. Specifies who, what, when, where. Progressively elaborated Used to document subsidiary plans</p>	<p>Here is where things get done! Creation of Deliverables for customers to review</p>	<p>Are deliverables aligned with project's plan? Track, review progress to meet performance objectives. Access how changes in project's scope impact the project. Review, aprov. and manage chg. to deliverables</p>	<p>Shutting down the project and/or phase properly. Review the scope baseline to ensure completion. Finalize ALL activities. Transfer of project products to operations, production or next phase.</p>
<p>Logical Processes to understand the scope and verify if the product was completed correctly. PM should rigidly control de scope and changes should be handled in a structured, procedural and controlled manner.</p>	<p>Deliverable oriented, hierarchical decomposition of project work</p>	<p>Overview all scope processes and plans. How scope will be delivered. what is needed to satisfy stakeholders and meet project objectives deeper understanding of project's requirements Center of project info. It is the primary tool for controlling project scope</p>	<p>Perform Int. Chg. Ctrl. is focused on managing changes to the project scope while Monitor & Direct Proj. Work is focused on managing the way that scope is executed</p>	<p>Ensure that product, serv. or result of the project matches the scope. Formalize acceptance of completed project deliverables. Used to accept deliverables. Maintain control of the project by preventing scope change requests from overwhelming the project. Allows the scope baseline to be maintained through proj.</p>	
<p>Project Manager should be in control of Schedule, which is derived from Scope Baseline and other information. Schedule is managed throughout the life of the project. Schedule should consider calendar requirements, constraints and strategic goals</p>		<p>Defines how the Schedule Mgt. Process will be carried out Create a list that represents all activities that need to take place to complete project Arrange the activities in order that they must be performed Analyze the proj. activities to determine the resource requirements Estimate how long each activity will take Creation of the project's schedule</p>	<p>Analyze act. sequences, durations, resources, req. and constraints to create schedule</p>	<p>Compare the work results with the plan. Make sure that time related performance on the project is in line with the plan. Schedule should be controlled proactively. Constantly performed until all scheduled activities has been completed. Monitor status of proj. activities and manage changes to schedule baseline.</p>	<p>Elements of Quality: 1) Customer Satisfaction 2) Prevention over inspection 3) Continuous Improvement or "Kaizen", Just in Time, "Kanban" (Perform Qty. Assurance process) 4) Mgt. Responsibility 5) Cost of quality 6) DIRFT – "Do it right the first time" Monitor and record results of executing quality activities to assess performance and recommend necessary. Changes. Measurements we have in place to detect and repair any remaining defects.</p>
<p>Object: Complete project within the approved budget Need to constantly monitor cost. Life Cycle Costing: total cost of ownership from creation to disposal – analyze the bigger picture of costs. Value Engineering: get more out of the project in every possible way</p>	<p>Cost Management should happen early in the project and requires a clear scope and work breakdown structure Cost and Scope are tightly connected.</p>	<p>Create policies, procedures and docs. for managing costs. Analyze schedule activities to evaluate time, resources and costs (How Much?) Aggregate estimated costs of individual activities to establish baseline (When?)</p>	<p>Approximate the resources and related costs to complete the project. Linked to Estimate Costs Budget is determined by Expert Judgement (anyone)</p>	<p>Primary concern is cost variance. Measure what was executed with what was planned to have accurate planning. Keep project on budget. Monitor and update project costs and manage changes to cost baseline.</p>	
<p>Quality: analyze the degree to which a set of inherent characteristics fulfill requirements</p>	<p>Key terms: Total Quality Mgt. (TQM); Kaizen, Just in Time (Kanban), ISO 9000, Standard Devi., Prevention</p>	<p>Identify quality standards and how the project will implement them</p>	<p>Ensure quality mgt. plan and metrics are followed. Prevent defects (Prevention) Implement quality standards</p>	<p>Measurement and analysis of the tests results on the deliverables to make sure quality metrics are met.</p>	
<p>HR Mgt. is related to define a role for everyone on the project and to define the responsibilities for each of these roles. PMs must be team leaders and lead the team to give their best for the project.</p>		<p>Defines the roles and responsibilities to staff, manage, team-build, assess and improve project team</p>	<p>Provide staffing for the project and confirm resources availability Build a sense of team, improve and enhance its performance Actively manage proj. team to ensure and track perform. according to the plan</p>		
<p>Covers all tasks related to producing, compiling, sending, storing, distributing, and managing project records.</p>	<p>How comm. will be distrib.? Format of comm. What will be communicated? When and who will receive comm.?</p>	<p>Develop communication approach based on StkH needs. Plan is continuous and regularly reviewed.</p>	<p>Create, collect, distribute, store, retrieve & dispose of communications in accord. with Communications Plan</p>	<p>Compare comm. execution with its original plan to find problems/failures. Ensure comm. meets StkH needs</p>	
<p>Risk is related to uncertain events Risk might affect projects for good or for bad. PM should be in control and proactively manage events, avoiding problems as much as possible, anticipate and identify risks and how to qualify, quantify and respond when they occur.</p>	<p>Types of Risk: Business, Pure, Insurable, Known (anticipated) and Unknown The more people involved in identifying risks, the more risks can be identified Assign numerical rating to prioritized risks; quantify uncertainty to plan action; Enhance positive and reduce negative risks with adequate responses</p>	<p>Process of defining how to conduct and approach risk activities for a project Identify which risks can impact the project and understand its nature Determine which risks are the higher priority on the project (Prioritization) Assign values to quantify the risks, analyze the effect of project risks numerically Create and document the plan to handle positive and negative risks.</p>		<p>Iterative process to confirm if the risks has been properly planned; Track identified risks, identify new ones and ensure risk management effectiveness Ensure that risks responses are implemented and effective. Do nothing about the risks themselves, but ensure risk responses are effective</p>	
<p>Formal process related to obtaining goods, services, or scope from outside of the organization</p>	<p>Point of Total Assumption or PTA=Target Cost+(ceiling price-target price) / ABC % share of cost overrun</p>	<p>Determine which components or services will be performed internally and which will be outsourced.</p>	<p>Select sellers and service providers and award the procurement, usually in the form of a contract</p>	<p>Continuously review the contract by buyer and seller to ensure that work results match the contract</p>	<p>Termination of the contract (i) by delivery of contracted items; (ii) by default or (iii) by convenience (strong reason)</p>
<p>Manage expectations that drive StkH satisfaction. "Creation and maintenance of relationships with the aim to satisfy needs."</p>	<p>List all stakeholders and describe their involvement and main expectations on the project.</p>	<p>How the team will relate to the StkH and what will be its involvement & expectation in all aspects of the project.</p>	<p>Use communications and the issue log to ensure proper StkH involvement to meet their expectations</p>	<p>How the plan of engaging and involving stakeholders lines up with the results. Keep StkH engaged</p>	

INPUTS (always tangibles, *i.e.* assets, documents, plans) + **common INPUTS:**
Organization Process Assets* (OPA) & Enterprise Environment Factors (EEF) except ✘**

Process Groups Knowledge Areas	INITIATING	PLANNING	EXECUTING	MONITOR & CONTROL	CLOSING
INTEGRATION The Project Title and its Description explains what is the project	Proj. Statement of Work (SOW) Business Case Selection Methods (formulas) Agreements	Project Charter Outputs from Planning Processes	Project Mgt. Plan Approved Change Requests	Project Mgt. Plan Schedule & Cost Forecasts Validated Changes Project Mgt. Plan Work Performance Reports Change Requests	Project Mgt. Plan Accepted Deliverables ✘
SCOPE	↓ Proj. SOW – written description of project, product, service or result. The Customer or Project Sponsor provides it. It is done before the project itself. Contains what is to be done, the business reason for doing it, and how the project supports the organization strategy The Business Case explains why the project is being done. Written before the project and contains feasibility studies, costs, benefits, options and recommendations. The reason projects are undertaken can be the following: 1) Market Demand 2) Business Need 3) Customer Request 4) Technological Advance 5) Legal Requirement 6) Ecological Impact 7) Social Need	Project Management Plan Project Charter Stakeholder Register ✘ Scope, Requirements & Stakeholder Mgt. Plan Project Charter ✘ Scope Mgt. Plan Project Charter ✘ Req. Documentation Scope Mgt. Plan Proj. Scope Statement Req. Documentation		Project Mgt. Plan ✘ Req. Documentation Req. Traceability Matrix Verified Deliverables Work Performance Data Work Performance Data ✘ Project Mgt. Plan Req. Documentation Req. Traceability Matrix	*OPA: historical information or knowledge that an organization has at its disposal, which may be used in future projects **EEF: Conditions not under the immediate control of the team, that influence, constrain or direct the project, program or portfolio
TIME		Proj. Mgt. Plan Project Charter Schedule Mgt. Plan Scope Baseline Schedule Mgt. Plan Activity & Milestone List Proj. Scope Statement Schedule Mgt. Plan Activity List & Risk Register Resource Calendars Schedule Mgt. Plan Activity List & Res. Require. Resource Calendars Sch. Mgt. Plan Activity List & Res. Calendar Network Diagrams&Duration		Project Mgt. Plan ✘ Project Schedule Work Perf. Data Project Calendars Schedule Data	
COST		Proj. Mgt. Plan Project Charter Cost & HR Mgt. Plan Scope Baseline Proj. Schedule & Risk Reg. Cost Mgt. Plan, Basis of Estimates, Resource Calendars, Agreements, Scope Baseline, Activity Cost Estimates Proj. Schedule & Risk Register ✘		Proj. Mgt. Plan ✘ Project Funding Req. Work Performance Data	
QUALITY		Scope, Cost Sch. & Baseline StkH & Risk Register Req. Documentation	Quality Mgt. Plan ✘ Process Improvement Plan Quality Metrics, Quality Ctrl. Measurements, Proj. Docs	Proj. Mgt. Plan, Deliverables ✘ Quality Metrics & Checklist Work Performance Data, Pro.Docs,App.Chg.Requests	
HUMAN RESOURCES		Proj. Mgt. Plan Activity Resource Req.	HR Mgt. Plan HR Mgt. Plan ✘ Project Staff Assignments Resource Calendars HR Mgt. Plan, Issue Logs ✘ Project Staff Assignments, Team Perfor.Assessments,WorkPerfor.R		
COMMUNICATION		Proj. Mgt. Plan StkH Register	Comm. Mgt. Plan ✘ Work Perf. Reports	Proj. Communications Issue Log ✘ Work Perf. Reports	
RISK		Project Mgt. Plan Project Charter Stakeholder Register Activity Cost and Duration Estimates, StkH Register, Proj Docs, Proc. Documents; Risk; Cost; Schedule; Quality and HR Mgt. Plans; Scope Baseline, Risk Management Plan Scope Baseline ✘ Risk Register Risk Management Plan Cost & Schedule Mgt. Plan Risk Register Risk Management Plan ✘ Risk Register	Procurement SOW Defines the scope of work to be performed as part of the procurement effort. It is created by the customer to specify for the vendor the deliverables it wants created. SOW can be related to performance, functional or design. SOW can be used as contract itself when agreed by both parties or can be used as a companion to the contract.	Proj. Mgt. Plan ✘ Risk Register Work Performance Data Work Performance Reports	
PROCUREMENT		Req. Documentation, Risk Register, Act. Resource Req., Proj. Schedule, Act. Cost Estimates, StkH Reg.	Proc. Mgt. Plan, Proc. Docs ✘ Source Selection Criteria, Seller Proposals, MakeBuy Decisions, Procurement SOW, ↑	Project Mgt. Plan ✘ Proc. Docs & Agreements Approved Change Requests Work Perfor. Reports & Data	Project Mgt. Plan ✘ Procurement Docs.
STAKEHOLDER	Project Charter & Procurement Docs.	Project Mgt. Plan Stakeholder Registry	Stakeholder Mgt. Plan ✘ Communications Mgt. Plan Change Log	Project Mgt. Plan ✘ Issue Log Work Performance Data	

TOOLS & TECHNIQUES

(Always have an associated quality action i.e. gather, compile, methods)

Process Groups Knowledge Areas	INITIATING	PLANNING <small>Meetings are common TT for all Knowledge Area Plans</small>	EXECUTING	MONITOR & CONTROL	CLOSING
INTEGRATION	Expert Judgment Meetings	Expert Judgment Facilitation Techniques	Expert Judgement Project Mgt. Information System (PMIS) Meetings	Analytical Techniques PMIS Expert Judgment Meetings & Change Control Tools	Expert Judgment (key tool for Closing Process). Analytical Techniques Meetings
SCOPE	Proj. Managers should act as facilitators to help group reach consensus Interviews, Focus Groups, Facilitated Workshops, Group Creativity Techniques; Decision Making Tech.; Questionnaires & Surveys; Observations; Prototypes; Doc. Analysis; Context Diagrams; Benchmarks; Brainstorming and Nominal Group Techniques (<i>prioritize Brainstorm</i>) Decompose to reach "Work Packages": lowest level of WBS for which cost and duration can be estimated and managed	Meetings Expert Judgement Facilitated Workshops and Alternative Generation, Product Analysis, Expert J. Decomposition	PMIS: helps in project execution. Part of EEF, provide access to automated tools, such as scheduling cost, performance indicators, databases, records, and financials.	Inspection or "reviews" (<i>point by point review of the scope and the associated deliverable</i>) Variance Analysis (EVM formulas) Measure differences between what was defined in the scope baseline and what was created	Integrated Change Control System. The set of procedures and processes that you need to apply in order to make a change Change Control Board (CCB): a chartered group responsible for reviewing, evaluating, approving, delaying or rejecting changes to the project.
TIME	Resource Optimiz. Tech. "Resource Leveling" or "Smoothing" is making adjustments in the schedule to accommodate changes in resources. LEADS – allow an activity to start early, anticipate the activity. LAGS – creating mandatory delays in a project schedule (ex.: wait for concrete to dry). Both can be made with lump sums or Percentages. Modeling Techniques WHAT-IF SCENARIO ANALYSIS – aka "Monte Carlo Analysis", used with risk monitoring to review various scenarios and bring schedule into alignment with Proj. Management Plan	Expert Judgment Analytical Techniques Meetings Decomposition Rolling Wave Planning Expert Judgement Precedence Diagr. Method Dependency Determination Leads and Lags Expert Judgment, Alternative Analysis, Published Estimating Data, Bottom Up estimates, Proj. Mgt. Software Analogous, Parametric, Three Point Estimates (Bottom up is not applicable) Critical Path Method (CPM), Critical Chain Method, Resource Optimization Techs., Modeling Tech., Leads & Lags, Schedule Compression (crash & fast track)	Critical Path Method Estimate minimum project duration and schedule flexibility Critical Chain Method Created by Eliyahu Goldratt, based on the theory of constraints. To create contingency reserves he suggest the identification of "bottlenecks" in the projects and add buffers between activities. Once a buffer is added the critical path – the longest path in a project – becomes the "critical chain".	Performance Reviews <i>Determine how the project is progressing against the schedule</i> Proj. Mgt. Software Modeling Techniques Leads and Lags Schedule Compression Scheduling Tools	Float= EF- ES or LF - EF FreeFloat=(EFsuc-ESpre)-1 Difference of 1 day of float is called "near critical path." Lack of float, implies risk of being late → Risk Schedule
COST	Three Point Estimates PERT – Prog. Evaluation and Review Technique Beta Distribution: $\frac{P+4M+O}{6}$ Triangular Distr.: $\frac{P+M+O}{3}$	Expert Judgment Analytical Techniques Meetings Expert, Analogous, Parametric, Bottom-Up, PERT, Reserve Analysis, Cost of Quality, Software, Vendor Bid Analysis, Group Decision-Making Techn. Cost Aggregation, Historical Relationships, Funding Limit Reconciliation, Reserve Analysis Expert Judgement	BAC = proj. original cost PV = planned % work x BAC EV = actual % work x BAC AC = money spent in a given period of time CV = EV - AC (costs running higher or lower than planned) SV = EV - PV (ahead/behind schedule)	Earned Value Mgt. (methodology that combines scope, schedule and resource measurements to assess proj. performance and progress.) Forecasting EVM and Forecasting are the best report performance tools	CPI = EV / AC (Worth of performance for dollar invested) Cum CPI = EV / AC SPI = EV / PV (pace expected of project progression) EAC = BAC / CPI ETC = EAC - AC VAC = BAC - EAC TCPI = (BAC-EV)/(BAC-AC) Or TCPI=(BAC-EV)/Remaining Funds
QUALITY	Quality Mgt. Tools (7QC)*, Cost benefit Analysis, Cost of Quality, Benchmarking, Design of Experiments, Statistical Sampling and additional Quality Planning Tools**		Quality Mgt. & Ctrl. Tools Quality Audits & Reviews Process Analysis (to identify improvements)	Quality Mgt. Tools Inspection	
HUMAN RESOURCES	7QC: Cause and Effect Diagrams (Fishbone, Ishikawa, Why-Why), Flowchart, Checksheets, Pareto, Histograms, Control Charts and Scatter Diagrams. **Additional Quality Planning Tools Brainstorming, Force Field Analysis, Nominal Group Technique, Quality Mgt. & Control Tools and Meetings	Organization Charts (OBS) Organ. Breakdown Structure Describe Depts., Proj. Teams Resp. Assignment Matrix (RACI Chart: Responsible, Accountable, Consult, Inform) Networking aka Interactions Organizational Theories (understand how groups form, develop and behave)	Pre-Assignment (is a constraint), Negotiation (KEY!), Acquisition, Virtual Team, Multi-Criteria Decision Analysis Interpersonal Skills, Training, Team Building Activities, Ground Rules, Colocation, Recognition & Rewards, Personal Asses. Tools Observation & Conversation Conflict Management Project Performance Appraisals (360 degree feedback)	Theories of Motivation Hierarchy of Needs (Maslow) Expectancy (Vroom): Expected outcomes McGregor's X and Y; Unmotivated v. Motivated Contingency (Fidler): Task v. Relationship	Hygiene (Herzberg) Hygiene + Motivation Fact Three Need (McClelland) Achiev. + Power + Affiliation Theory Z (William Ouchi) Permanent Job – loyalty Forms of Power: Reward & Expert (favored)
COMMUNICATION	Channels = N x (N - 1) / 2 Effective Listening; Active Listening (paraphrase, ask questions, clarify & followup)	Communication Requirement Analysis; Models; Technology; Methods; and Meetings	Performance Reporting Communications Analysis Info. Mgt. Systems (anything that helps manage information and gets it to stakeholders)	Info. Mgt. Systems Expert Judgement Meetings	Conflict Mgt. Approach Problem Solving Collaboration Compromise Forcing Smoothing Withdrawal
RISK	Docs Reviews and Information Gathering Techniques (Brainstorming, Delphi, Interviews, Root&Cause Analysis) Strategies for Negative Risks or Threats Accept; Avoid; Mitigate and Transfer Strategies for Positive Risks or Opportunities Accept; Exploit; Enhance and Share	Analytical Techniques Expert Judgement Meetings and Decomposition (only for the RBS) Checklist/Assump. Analysis Diagram, Tech. (Fishbone, Ishikawa, Influence, SWOT), Risk Probability and Impact Assessment (PI Assess.) Prob. and Impact Matrix 1) Data Gathering & Representation 2) Risk Analysis & Modelling Strategies for Negative and Positive Risks (Threats and Opportunities)	Determine risk response according to the priority: High: Avoidance or Transfer; Medium: Transfer or Mitigate Low: Mitigate or accept Ex.: Fishbone Diagram is used to categorize risks and make easier to handle risks (area, root cause, etc.) 1) Collect & Display Interviews; Probability Distribution; Exp. Judgment 2) Analyze & Simulate Sensitivity Analysis; EMV; Decision Tree; Modeling; Exp	Risk Assessment & Reassessment Review of each individual risk Risk Audits Ensure effectiveness of all risk mgt. activities Variance and Trend Analysis Compare performance date vs. baselines Reserve Analysis Compare planned vs. actual to create a contingency Technical Performance Measurement Meetings	Constructive Team Roles Initiators; Information Seekers; Information Givers, Encouragers; Clarifiers; Harmonizers; Summarizers Gate Keepers Destructive Team Roles Aggressors; Blockers; Withdrawers; Recognition Seekers; Topic Jumpers; Dominators; Devil advocates
PROCUREMENT	Teaming Agreements Not in PMBOK – joint venture agreement to get resources for a project	Make or Buy Analysis Expert Judgment Market Research Meetings	Bidder Conference Proposal Eval. Techniques Independent Estimates Procur. Negotiation (win/win)	Contract Change Ctr. Sys. Inspection, Audits, Performance Reports, Claims Administration, "On site performance review", Records Mgt. System	Procurement Audits Procurement Negotiations Records Mgt. System (ADRs options preferred for conflict resolution)
STAKEHOLDER	Stakeholders Analysis: who, what how communications should be shared with StkH; Power & Influence Grid	Expert Judgment, Meetings StkH Engagement Assess. Matrix (unaware, resistant, neutral, supportive, leading)	Communication Methods (Face to face – preferred) Interpersonal Skills (act. Listening) Mgt. Skill (writing, speak, etc)	Information Mgt. Systems Expert Judgment Meetings	Info Mgt. Systems: processes and procedures to collect and distribute info. In physical /electronic format

OUTPUTS

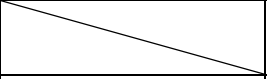
(Always tangibles i.e. documents, plans, report updates)

Process Groups Knowledge Areas	INITIATING	PLANNING	EXECUTING	MONITOR & CONTROL	CLOSING
INTEGRATION	Project Charter Based on a need, signed by organization senior mgt., written by sponsor, name PM and give authority, high-level requirements, milestones and a summary level preliminary project budget.	Project Mgt. Plan: aka "Program Mgt. Plan" Include all Mgt. Plans, all baselines (scope, schedule & cost), Process Improvement, Change Mgt. and Configuration Mgt. Plan	Deliverables (products, services or results that must be completed) Work Performance Data	Change Requests (corrective, preventive, repair) Work Performance Reports Approved Change Requests Change Logs, Proj. Mgt. Plan and Docs. Updates	Acceptance of final Product, Service or Result Transition OPA Updates Historical Files
SCOPE	Configuration Mgt. Plan: defines items that are "configurable", i.e. deliverables, processes. Part of Conf. Mgt. System in PMIS. Scope Mgt. Plan: How requirements will be analyzed, documented and managed	Scope Mgt. Plan Requirements Mgt. Plan	Req. Documentation: Describe what needs to be performed and why each requirement is import for the project. RTM: Link requirements to their origin and track them through the life cycle of the project	Accepted Deliverables Change Requests Work Performance Info.	Work Performance Data Raw observations (unprocessed) and measurements identified during activities to carry out project work
	Defines the project work & produced deliverables with acceptance criteria, expectations, requirements, assumptions and StkH thresholds	Proj. Scope Statement Scope Baseline* Scope Statement + WBS + WBS Dictionary	Details pertaining project scope, deliverables, assumptions, scope and scope exclusions	Work Performance Info. Change Requests PM Plan updates OPA	Work Performance Reports Inform project status compiled in project documents memos or notes. Physical or electronic representation of WPI complied in project documents intended to generate decisions, actions or awareness.
TIME		Schedule Mgt. Plan	Act. List – list with all schedule activities (tasks) on the project Act. Attributes – Description of activities and its components: person responsible, geographic area of work and level of effort. Milestone List – significant points or events in a project.	Work Performance Info. Schedule Forecasts Change Requests	Work Performance Info. Is a project artifact and consists in Performance data collected from various controlling processes, analyzed in context and integrated based on relationships across areas; Jeff Furman: "WPI is the analyzed and interpreted data, for example using raw data that the project is late and over budget to calculate earned value measurements (PV, EV, SPI, CPI, etc.). This work performance information is later formatted, contextualized and "prettied up" for your stakeholders." Include info. about project progress, such as deliverables, their progress and acceptance
		Activity List Activity Attributes Milestone List			
	Sch. Baseline: Accepted and approved version of schedule by Stakeholders	Activity Resource Require. Resource Breakdown Structure (RBS)	Float Amount of time an activity can take without making the project late Free-Float Extra time between two activities	Proj. Mgt. Plan; Proj. Docs. OPA Updates	
COST	Project Schedule enables de creation of a cost baseline or time-phased budget and works as a project calendar with a timeline	Activity Duration Estimates Schedule Baseline*, Project Schedule, Milestone Chart, Bar Chart, PND, Schedule Data, Calendar	units of measure, level of precision, accuracy, thresholds organizational procedure links, rules of performance, reports	Work Performance Info. Cost Forecasts Change Requests Proj. Mgt. Plan Updates Proj. Docs. Updates OPA Updates	
	Cost Baseline is the current and approved budget, excluding "Management Reserves".	Cost Management Plan	Basis of estimates, provide the details of estimates, ranges, level of confidence and assumptions		
	Proj. Funding Requirements Total and periodic (quarterly, annually) funding require. Derived from cost baseline.	Activities Cost Estimates Basis of Estimates Proj. Docs. Updates Cost Baseline* Proj. Funding Requirements Proj. Docs. Updates			
QUALITY	Process Improv. Plan: how qty is improved, identify waste and evaluate imprvm.	Quality Mgt. Plan Process Improvement Plan Quality Metrics / Checklists	Change requests Proj. Mgt. Plan Updates Proj. & OPA updates	Quality Control Measurem. Validated Changes Verified Deliverables	
HUMAN RESOURCES	RBS is decomposed to the same level as the WBS so Resources can be linked to activities. RACI chart is developed based on the identified resources in the RBS and the activities. R&R provides the project manager with specific information	HR Mgt. Plan and its subsidiary documents: 1) Roles & Responsibilities aka as "R&R" (to define role, authority, responsibility and competency) 2) Reporting Relationships 3) Staff Mgt. Plan: location of each team member and costs associated with each team member	Project Staff Assignments Resources Calendars Proj Mgt. Plan Updates Team Perform. Assessments EEF Updates Change Requests General Updates	*Scope, Schedule and Cost Baseline also contain the Performance Measurement Baseline, used to compare executed project work, measure and manage performance, technical and quality parameters and is used in connection with EVM. Perf. Measurement Baseline include contingency reserve and exclude Mgt. Reserve.	
	The Comm. Mgt. Plan contains info. about the issue escalation process and time frame to resolve issues	Comm. Mgt. Plan Project Docs. Updates	Project Communications Proj. Mgt. Plan Updates Proj. Docs. & OPA Updates	Work Performance Info Change Requests Proj. Docs. & OPA Updates	
RISK	Describe tolerable risk threshold allowed and reminder of all risk info. The RBS indicates only the categories of risks	Risk Management Plan Risk Breakdown Struc.(RBS)	Procurement Docs Issued by the Buyer and used in bids and proposal activities, such as:	Work Performance Info. Change Requests	Different types of Change Requests : -Corrective actions -Preventive Actions -To formally update controlled docs
	Contains: Catalogue of risks, initial risk response, root cause, and risk categories	Risk Register (not static) Updated RBS	RFI-Request for information IFB-Invitation for Bid RFP-Requirement for proposal RFQ-Requirement for Quotation	Proj. Mgt. Plan Updates	
	Determine Probability Reduce level of uncertainty Focus on high probability and high impact risks	Prob. And Impact Matrix (including risk scores) Proj. Docs. Updates	Procurement SOW is not final until the contract is signed	Proj. Docs. Updates (Risk register)	
	Will add the Rankings of risks to the Risk Register.	Proj. Mgt. Plan Updates (EMV including values and updated Risk register)		OPA Updates	
PROCUREMENT	Also provide updates do Schedule, Cost, Quality and Proc. Mgt. Plans and all Baselines	Proj. Mgt. Plan Updates (updated Risk Register)			
	Explain in detail a section of the Scope, WBS and WBS Dictionary to sellers so they decided to pursue the work or not	Proc. Mgt. Plan Procurement SOW & Docs. Source Selection Criteria Make/Buy Decisions, Change Requests	Selected Sellers Agreements Resource Calendars Change requests, PM Plan and Docs Updates	Work Performance Info. Change Requests Proj. Mgt Plan; Docs.; and OPA updates	Deliverable Acceptance Closed Procurements OPA Updates (Debarred List)
STAKEHOLDER	Stakeholder Register	Stakeholder Mgt. Plan Project Docs. Updates	Issue Log Change Requests Proj. Mgt. Plan Updates Proj. Docs. Updates & OPA	Work Performance Info. Change Requests OPA Updates Seller Performance Report	Issues are risks that actually occurred. Issue Log is a doc. used to record questions or in dispute btw. project StkH.

PM TERMS, VOCABULARY & ADDITIONAL NOTES

Process Groups Knowledge Areas	INITIATING	EXECUTING	MONITOR & CONTROL	CLOSING	
INTEGRATION Project Life Cycle; should not be confused with Process Groups. 1) Start the Project; 2) Plan Work 3) Carry out the work; 4) Close de project	Proj. Charter is high-level Once approved is not updated Issued and signed by the project initiator OR sponsor, someone outside the project executing organization	Rolling Wave – Form of progressive elaboration: work to be accomplished in future is planned in detail; future work in a higher level How project will be managed, executed and controlled. Single & Detailed document and input to all Planning Plans in the group	Status reports, performance measurement & forecasts. How scope is executed. Changes approved by Change Ctrl. Board are not Scope Creep. The PM is responsible for handling all change requests in the project	Happens for every phase and every complete project. "Close Procurements" happens first and after, we have "Close Project/Phase process"	
	SCOPE* Competing Constraints* Scope Creep is agreeing to requests to add and change the scope and implies higher costs. Goldplating happens when the project team adds new features not requested by customer and not approved by Change Ctrl. Board	Scope Creep and Goldplating Also done through "Observations" and Job Shadowing Similar to Proj. Charter, but more detailed WBS → Diagrams Proj. Schedule → Gantt	"100% Rule": WBS represents all products and project. WBS is finished by assigning the work packages to a "Control Account" with an identifier called "Code of Accounts." The Control Accounts have "Planning Packages". WBS Dictionary provides the details of work packages.	"Validate Deliverables", as it validates de deliverables against the scope. Not to be confused with Control Quality Process. Inspec. of deliv by customer	Joseph Juran: quality is fitness for intended use Pareto Law: 80/20 Pareto Charts Philip Crosby: Zero Defects (asp. Quote) Prevention Not Inspection "Quality is free" Cost of Quality (CQ): cost of doing things wrong. It includes the costs in preventing nonconformance to requirements, appraising the product or service for conformance to requirements and failing to meet requirements (rework)
TIME* Contingency Reserve ≠ Management Reserve Amount of project budget withheld for management control purposes, reserved for Unknown-Unknown, that can affect the project and is NOT included in the cost baseline. Management Reserve is only added to Cost Baseline IF approved The project budget include the cost baseline plus the management reserves	Schedule Compression Techniques to shorten the schedule duration without changing the Project Scope. Crashing – add more resources (increase cost) Fast Tracking – reorder activities to be performed in parallel (increase risk). Loses the effectiveness of how resources are used. Schedule Network Analysis Technique that generates the project schedule model.	PDM Relationships or Dependencies F→S; S→S; F→F or S→F The S→F relationship is based on "letters of intent" where you give the product before getting paid or in another example is the first guard that cannot finish its shift until the second guard starts. Dependencies can be (i) Mandatory (or hard logic); (ii) Discretionary (or soft logic, preferred, preferential) or (iii) External, when involves external factors such as holidays, laws or deadlines.	The Schedule Baseline is used to control de schedule. View notes on definitions	CQ= Prevention Costs + Appraisal Costs (aka conformance) + Failure Costs (aka nonconformance) Prevention Costs – related to prevention Appraisal Costs – related to testing Failure Costs – money spent to fix issues Process Improvement Plan should contain the following: 1) Process Boundaries 2) Process Configuration 3) Process Metrics 4) Target for Improved Performance Quality Metrics "What cannot be measured, cannot be improved" 1) Ensure stability and performance; 2) Describe a project or product feature 3) Defined in planning 4) Focuses on defects as they occur & compliance Quality is a multi level responsibility: 1) Senior Mgt. – Company 2) Proj. Manager – Project 3) Resources – work package	
	Cost Mgt. Plan establishes how cost will be planned, structured and controlled Develop an approximation of monetary resources needed to complete proj. activities Definition: aggregate cost of activities and work packages for cost baseline	Control Account: integrate and compare scope, budget, cost and schedule to EVM to evaluate performance. Cost Aggregation: summing the lower-level cost estimates of the work packages in a WBS			Process to keep the project on budget and on scale. Perf. Meas. Baseline ↔ EVM Rebaselining is only acceptable when there is major change approved by client/customer that reflects in a change in any of the project baselines (costs, schedule or scope)
COST* Iterative process Concepts of Direct, Indirect, Fixed, Variable, Sunk and Opportunity costs Fig. 7-8, page 213 of PMBOK Project Budget = Mgt. Reserve + Cost Baseline	Levels of Estimates (Accuracy) 1) ROM (rough order of magnitude): -25% / +75% 2) Definitive Estimate: -5% / +10%	Quality planning should be performed with other planning processes.	No inspection, focus on defect prevention. Improved processes yields to improved products Control Quality: deliverables meet quality standards Focus on defects identification	Process Improvement Plan should contain the following: 1) Process Boundaries 2) Process Configuration 3) Process Metrics 4) Target for Improved Performance Quality Metrics "What cannot be measured, cannot be improved" 1) Ensure stability and performance; 2) Describe a project or product feature 3) Defined in planning 4) Focuses on defects as they occur & compliance Quality is a multi level responsibility: 1) Senior Mgt. – Company 2) Proj. Manager – Project 3) Resources – work package	
QUALITY* Determine quality policies and objectives so that project satisfies the needs for which it was undertaken	Project Team – all individuals working on the project. Proj. Mgt. Team is a subset of Proj. Team, consisting on the Proj. Manager + the Project Mgt. Staff There is only one person accountable for the project	EEF → based on the different types of organizational structure: functional, projectized or matrix Who do you need? What skills? Responsibilities? When do they start/leave? Report to whom? Reward?	Staff Assignment will also depend on organization type: Matrix vs. Projectized Balance btw. Hard Skills and Soft Skills Lead and administratively run the team	Information Mgt. Systems Facilities, processes and procedures used to collect, store and distribute information between producers and consumers of information in a physical or electronic format.	
HUMAN RESOURCES* Soft Skills are associated with speaking, writing, listening, interpersonal and emotional intelligence	Consider all possible EEFs Comm. Methods: Interactive or Multi-Directional; Push and Pull	What StkH wants to know. Enable efficient and effective communication flow. SHOW TIME! Qualitative risk analysis can be made by: P&I impact assessments P&I impact matrix: Risk Categorization Quantitative Risk Analysis: Can be skipped if risks don't warrant such approach. The Proj. Scope Statement defines what you need to deliver and can be an input as well 15=68.26%, 25=95.46%, 35=99.73% and 65=99.99%	Control Comm. is related to Performance Reports. Review communication. "Information Gatekeeper"	Project Team does not carry out quality assurance as it would not allow objective qty assurance measurements	
COMMUNICATION (Soft skills)	Risk Mgt. Plan ties back with Roles and Responsibilities of who will execute the risk mgt. plan, and the cost (budget) to manage the risk (contingency and management reserves); understand scheduling. Review the Cost Impact Definition Table, used to describe, define and assign the impact of the risks (i.e. low, medium, high, super high)	Resources needed for risk mgt.; How risks are doc., escalated and communicated Risks can become issues. Iterative process (ongoing) Everybody is responsible Subjective → Rating Prioritize Risks as low, medium and high priority Objective → Number EEF: Industry studies, risk databases, company culture Define Risk Triggers! Residual and Secondary Risks remain after response	Consequences of this process: lessons learned and historical information; review assumptions for risks. Workaround is also part this process. It is a response to unforeseen risk event.	Tools selection works best when based on the needs of the StkH The issues log contain not resolved AND resolved issues for future reference	
RISK* Processes in risk management area are iterative, they happen constantly during the whole project	EEF → contracts & labor laws ALWAYS perform make/buy analysis. Lessons learn. and EEF are key for make/buy analysis	Fixed Price Ag. aka "Lump Sum" – set the fee paid for work regardless of cost or effort. Cost Reimbursement – pay seller actual costs plus a fee for seller's profit. Time & Material – hybrid containing aspects of Fixed Price and Cost Reimbursement.	Contract Change Ctrl. System processes by which the procurement can be modified: Procu. Changes "Legal validate scope"	Close one proc. per time; Silence ≠ termination; Partial term; Formal Closure: accept. or nonconformance with deliverables. SIGNOFF	
PROCUREMENT Vendor Mgt. Strategies: Change Nature of Demand; Leverage Competition; Manage Spend; Seek joint advantage with Supplier	Anyone affected or influenced by proj. outcome. Identify; Analyze; Document. StkH Power & Classification	Process highly connected with Communications knowledge area. How to engage StkH duri. Proj cycle	Methods for StkH Communi.: Push, Pull and Interact Done Proactively across the whole project.	Process maintains/increases efficiency of strategies re. StkH Engagement activities	Finalize open claims, update records to reflect final results archive info for future use. Happens for every contract.
STAKEHOLDER Competitors are NOT considered Project Stakeholders					

PRACTICE SHEET

									
	█		█		█				
	█		█			█			
	█		█				█		
	█		█					█	
	█		█		█				
	█		█			█			
	█		█						█
	█		█				█		
	█		█					█	
					█				