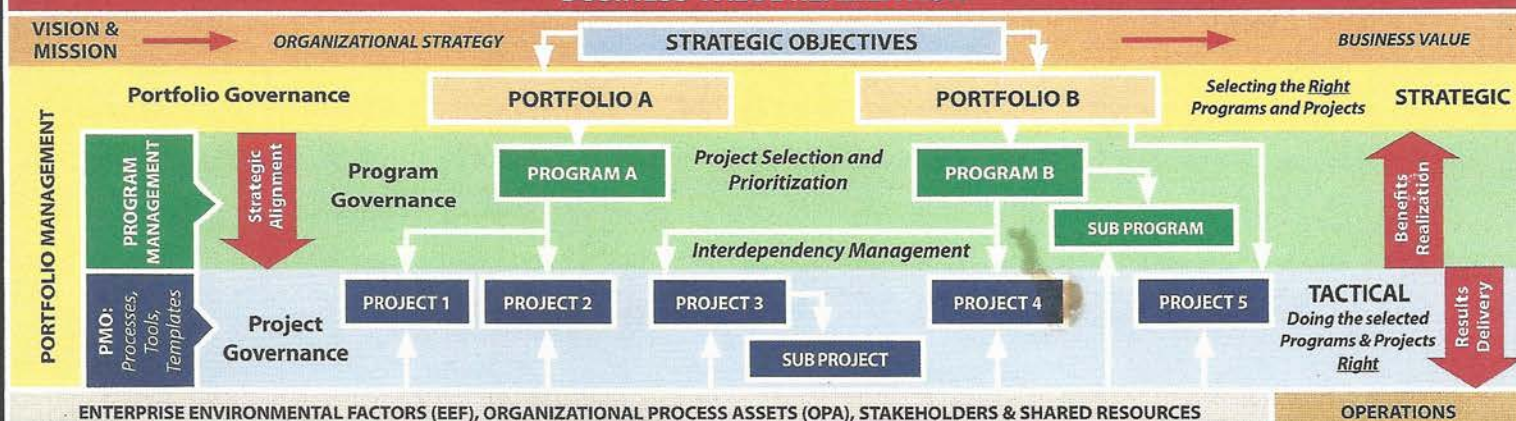


Project Management Professional (PMP)[®] SUCCESS SHEET

BUSINESS VALUE REALIZATION



FOUNDATIONAL ELEMENTS (not all-inclusive)

***Agile/Adaptive Environments:** Expectations of the project manager do not change, but control of detailed planning and delivery is delegated to the team, emphasis on collaborative decision making and ensuring the team has the ability to respond to changes.

***Business Value:** Net quantifiable benefit derived from a business endeavor, and is the return, in the form of elements such as money, goods, or intangibles in return for something exchanged.

***Projects Drive Change:** A project is aimed at moving an organization from one state to another state in order to achieve a specific objective.

***Projects Enable Business Value Creation:** Benefit may be tangible, intangible, or both.

PROJECT LIFE CYCLE



***Project Life Cycle:** The series of phases that a project passes through from start to completion (through "Phase Gates" (PG)).

***Organizational Project Management (OPM):** A framework in which portfolio, program, and project management are integrated with organizational enablers to achieve strategic objectives.

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

***Project Management:** The application of knowledge, skills, tools and techniques to project activities to meet project requirements.

***Program:** Related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually.

***Program Management:** The application of knowledge, skills, tools, and techniques to a program to achieve program objectives and obtain benefits and control not available by managing program components individually.

***Portfolio:** Projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives.

***Portfolio Management:** The centralized management of one or more portfolios to achieve strategic objectives.

10 KNOWLEDGE AREAS	5 PROJECT MANAGEMENT PROCESS GROUPS AND 49 PROCESSES				
	INITIATING 2	PLANNING 24	EXECUTING 10	MONITORING & CONTROLLING 12	CLOSING 1
PROJECT INTEGRATION MANAGEMENT 7	• Develop Project Charter	• Develop Project Management Plan	• Direct and Manage Project Work • Manage Project Knowledge	• Monitor and Control Project Work • Perform Integrated Change Control	• Close Project or Phase
PROJECT SCOPE MANAGEMENT 6		• Plan Scope Management • Collect Requirements • Define Scope • Create WBS		• Validate Scope • Control Scope	
PROJECT SCHEDULE MANAGEMENT 6		• Plan Schedule Management • Define Activities • Sequence Activities • Estimate Activity Durations • Develop Schedule		• Control Schedule	
PROJECT COST MANAGEMENT 4		• Plan Cost Management • Estimate Costs • Determine Budget		• Control Costs	
PROJECT QUALITY MANAGEMENT 3		• Plan Quality Management	• Manage Quality	• Control Quality	
PROJECT RESOURCE MANAGEMENT 6		• Plan Resource Management • Estimate Activity Resources	• Acquire Resources • Develop Team • Manage Team	• Control Resources	
PROJECT COMMS MANAGEMENT 3		• Plan Communications Management	• Manage Communications	• Monitor Communications	
PROJECT RISK MANAGEMENT 7		• Plan Risk Management • Identify Risks • Perform Qualitative Risk Analysis • Perform Quantitative Risk Analysis • Plan Risk Responses	• Implement Risk Responses	• Monitor Risks	
PROJECT PROCUREMENT MANAGEMENT 3		• Plan Procurement Management	• Conduct Procurements	• Control Procurements	
PROJECT STAKEHOLDER MANAGEMENT 4	• Identify Stakeholders	• Plan Stakeholder Engagement	• Manage Stakeholder Engagement	• Monitor Stakeholder Engagement	

4.0 INTEGRATION MANAGEMENT

PROCESS GROUPS

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4.1 Develop Project Charter

- Bus Docs: *Bus Case, Benefits Mgt Plan*
- Agmts
- Enterprise Environmental Factors (EEF)
- Organizational Process Assets (OPA)

- Expert Judgment (EJ) • Data Gathering: *Brainstorming, Focus Grps, Interviews*
- Interpersonal & Team Skills: *Conflict Mgt, Facilitation, Mtg Mgt*
- Mtgs
- PC
- Assumption Log

4.2 Develop Project Mgt Plan

- Proj Charter (PC)
- Outputs from Other Processes
- EEF
- OPA

- EJ • Data Gathering: *Brainstorming, Checklists, Focus Grps, Interviews*
- Interpersonal & Team Skills: *Conflict Mgt, Facilitation, Mtg Mgt*
- Mtgs
- PM Plan

4.3 Direct & Manage Project Work

- PM Plan: *Any Comp* • Proj Docs: *Change Log (CL), Lessons Learned Register (LLR), Milestone List (ML), Proj Comms, Proj Sch, Rqmts Traceability Matrix (RTM), Risk Register (RR), Risk Rpt*
- Aprvd Change Rqsts (CR) • EEF • OPA

- EJ
- PM Info System (PMIS) • Mtgs

- Deliverables • WP Data
- IL • CR • PM Plan Updates: *Any Comp* • Project Docs Updates (PDU): *Activity List, AL, LLR, Rqmts Doc, RR, SR*
- OPA Updates

4.4 Manage Project Knowledge

- PM Plan: *Any Comp* • Proj Docs: *LLR, Proj Team Asgmts, Resource Breakdown Structure (RBS), Source Selection (SS) Criteria, Stakeholder Register (SR)* • Deliverables
- EEF • OPA

- EJ • Knowledge Mgt • Info Mgt
- Interpersonal & Team Skills: *Active Listening, Facilitation, Ldrshp, Networking, Political Awareness*

- LLR
- PM Plan Updates: *Any Comp*
- OPA Updates

4.5 Monitor & Control Project Work

- PM Plan: *Any Comp* • Proj Docs: *Assumption Log (AL), Basis of Est (BoE), Cost Forecasts, Issue Log (IL), LLR, ML, Quality Rpts (QR), RR, Risk Rpt, Sch Forecasts*
- Work Perf (WP) Info
- Agmts • EEF • OPA

- EJ • Data Analy: *Alt Analy, Cost-Benefit Analy, Earned Value (EV) Analy, Root Cause Analy, Trend Analy, Variance Analy*
- Decision Making
- Mtgs

- WP Rpts
- CR
- PM Plan Updates: *Any Comp*
- PDU: *Cost Forecasts, IL, LLR, RR, Sch Forecasts*

4.6 Perform Integrated CC

- PM Plan: *Change Mgt Plan, Config Mgt Plan, Scope Baseline (BL), Sch BL, Cost BL*
- Proj Docs: *BoE, RTM, Risk Rpt*
- WP Rpts
- CR
- EEF • OPA

- EJ • Change Control Tools • Data Analy: *Alt Analy, Cost-Benefit Analy* • Decision Making: *Voting, Autocratic Decision Making, Multicriteria Decision Analy (MDA)* • Mtgs

- Aprvd CR
- PM Plan Updates: *Any Comp*
- PDU: *CL*

4.7 Close Project or Phase

- PC • PM Plan: *Any Comp* • Proj Docs: *AL, BoE, CL, IL, LLR, ML, Proj Comms, Quality Control (QC) Meas, QR, Rqmts Doc, RR, Risk Rpt* • Acptd Deliverables
- Bus Docs: *Bus Case, Bus Mgt Plan* • Agmts • Procurement Doc • OPA

- EJ
- Data Analy: *Doc Analy, Regression Analy, Trend Analy, Variance Analy*
- Mtgs

- PDU: *LLR*
- Final Product, Service or Result Transition
- Final Rpt
- OPA Updates

***Business Case:** A documented economic feasibility study used to establish validity of the benefits of a selected component lacking sufficient definition and that is used as a basis for the authorization of further project management activities.

***Project Charter:** A document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the project manager the authority to apply organizational resources to project activities.

***Project Mgt Plan:** A formally approved document that defines how the project is executed, monitored and controlled, and closed.

***Project Mgt Information System (PMIS):** An information system consisting of the tools and techniques used to gather, integrate, and disseminate the outputs of project management processes.

***Issue Log:** A project document where information about issues is recorded and monitored.

***Change Request:** A formal proposal to modify any document, deliverable, or baseline.

***Knowledge Management:** tools and techniques connect people so they can work together to create new knowledge, share tacit knowledge, and integrate the knowledge of diverse team members.

INTEGRATION MANAGEMENT

Reviewing all of the 49 processes in the PMBOK® Guide and determining how they are integrated into the project plan to work together seamlessly to ensure a successful project.

Project Plan

Process A, B...

5.0 SCOPE MANAGEMENT

PROCESS GROUPS

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5.1 Plan Scope Mgt

- PC • PM Plan: *Quality Mgt (QM) Plan, Proj Life Cycle Description, Development Approach*
- EEF
- OPA

- EJ • Data Analy: *Alt Analy* • Mtgs

- SM Plan
- Rqmts Mgt Plan

5.2 Collect Requirement

- PC • PM Plan: *Scope Mgt (SM) Plan, Rqmts Mgt Plan, Stakeholder Engagement (SE) Plan*
- Proj Docs: *AL, LLR, SR*
- Bus Docs: *Bus Case*
- Agmts
- EEF • OPA

- EJ • Data Gathering: *Brainstorming, Interviews, Focus Grps, Questionnaires & Surveys, Benchmarking* • Data Analy: *Doc Analy* • Decision Making: *Voting, MDA* • Data Rep: *Affinity Diag, Mind Mapping* • Interpersonal & Team Skills: *Nominal Grp Technique, Observation/Conversation, Facilitation* • Context Diag • Prototypes

- Rqmts Doc
- RTM

5.3 Define Scope

- PC
- PM Plan: *SM Plan*
- Proj Docs: *AL, Rqmts Docs, RR*
- EEF
- OPA

- EJ • Data Analy: *Alt Analy* • Decision Making: *MDA* • Interpersonal & Team Skills: *Facilitation*
- Product Analy

- Proj Scope Stmt
- PDU: *AL, Rqmts Doc, RTM, SR*

5.4 Create WBS

- PM Plan: *SM Plan*
- Proj Doc: *Proj Scope Stmt, Rqmts Doc*
- EEF • OPA

- EJ
- Decomp

- Scope BL
- PDU: *AL, Rqmts Doc*

5.5 Validate Scope

- PM Plan: *SM Plan, Rqmts Mgt Plan, Scope BL*
- Proj Docs: *LLR, QR, Rqmts Doc, RTM*
- Verified Deliverables
- WP Data

- Inspection
- Decision Making: *Voting*

- Acptd Deliverables
- WP Info • CR
- PDU: *LLR, Rqmts Doc, RTM*

5.6 Control Scope

- PM Plan: *SM Plan, Rqmts Mgt Plan, Change Mgt Plan, Config Mgt Plan, Scope BL, Perf Meas BL* • Proj Docs: *LLR, Rqmts Doc, RTM*
- WP Data • OPA

- Data Analy: *Variance Analy, Trend Analy*

***Scope:** The sum of the products, services, and results to be provided as a project.

***Scope Baseline:** The approved version of a scope statement, work breakdown structure (WBS), and its associated WBS dictionary, that can be changed using formal change control procedures and is used as a basis for comparison to actual results.

***Scope Management Plan:** A component of the Project Management Plan that describes how the scope will be defined, developed, monitored, controlled, and validated.

***Requirement:** A condition or capability that is necessary to be present in a product, service, or result to satisfy a business need.

***Requirements Management Plan:** A component of the Project Management Plan that describes how project and product requirements will be analyzed, documented, and managed.

***Requirements Traceability Matrix:** A grid that links product requirements from their origin to the deliverables that satisfy them.

***Scope Creep:** The uncontrolled expansion to product or project scope without adjustments to time, cost, and resources.

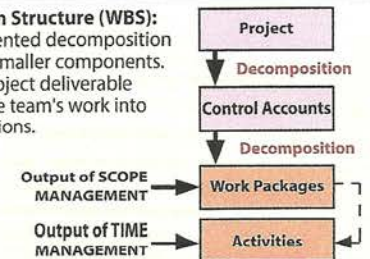
***Work Breakdown Structure (WBS):** A hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables.

***WBS Dictionary:** is a document that provides detailed deliverable, activity, and scheduling information about each component in the work breakdown structure.

***Work Package:** The work defined at the lowest level of the work breakdown structure for which cost and duration are estimated and managed.

Work Breakdown Structure (WBS):

A deliverable-oriented decomposition of a project into smaller components. A WBS is a key project deliverable that organizes the team's work into manageable sections.



Decomposition is an important technique used in WBS creation (Scope Management) and definition of activities (Time Management). It is the subdivision of the project deliverables into smaller, more manageable components until the work and deliverables are defined to the **work package** level, whereby **activities** can then be scheduled.

6.0 SCHEDULE MANAGEMENT

PROCESS GROUPS

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6.1 Plan Schedule Mgt

• PC
• PM Plan: SM Plan, Development Approach
• EEF • OPA

• EJ • Data Analy
• Mtgs

• Sched Mgt Plan

6.2 Define Activities

• PM Plan: Sched Mgt Plan, Scope BL
• EEF • OPA

• EJ
• Decomp
• Rolling Wave Planning
• Mtgs

• Activity List
• Activity Attributes
• ML • CR
• PM Plan Updates: Sched BL, Cost BL

6.3 Sequence Activities

• PM Plan: Sched Mgt Plan, Scope BL • Proj Docs: Activity Attributes, Activity List, AL, ML
• EEF • OPA

• Precedence Diagramming Method (PDM) • Dependency Determination & Integration • Leads & Lags • PMIS

• Proj Sched Network Diag
• PDU: Activity Attributes, Activity List, AL, ML

6.4 Estimate Activity Durations

• PM Plan: Sched Mgt Plan, Scope BL • Proj Docs: Activity Attributes, Activity List, AL, LLR, ML, Proj Team Asgmts, RBS, Res Calendars, Res Rqmts, RR
• EEF • OPA

• EJ • Analogous Est
• Parametric Est
• 3-Point Est
• Bottom-Up Est
• Data Analy: Alt Analy, Res Analy
• Decision Making
• Mtgs

• Duration Est
• BoE
• PDU: Activity Attributes, AL, LLR

6.5 Develop Schedule

• PM Plan: Sched Mgt Plan, Scope BL • Proj Docs: Activity Attributes, Activity List, AL, BoE, Duration Est, LLR, ML, Proj Sched Network Diag, Res Calendars, Res Rqmts, RR • Agmts
• EEF • OPA

• Sched Network Analy
• Critical Path Method • Res Opt
• Data Analy: What-If Scenario Analy, Simulation
• Leads & Lags
• Sched Compression
• PMIS • Agile Release Planning

• Sched BL • Proj Sched • Sched Data • Proj Calendars • CR • PM Plan Updates: Sched Mgt Plan, Scope BL
• PDU: Activity Attributes, AL, Duration Est, LLR, Res Rqmts, RR

6.6 Control Schedule

• PM Plan: Sched Mgt Plan, Sched BL, Scope BL, Perf Mgt BL
• Proj Doc: LLR, Proj Calendars, Proj Sched, Res Calendar, Sched Data
• WP Data
• OPA

• Data Analy: EV Analy, Iteration Burndown Chart, Performance Reviews, Trend Analy, Variance Analy, What-If Scenario Analy
• Critical Path Method • PMIS
• Res Optimization • Leads & Lags
• Sched Compression

• WP Info • Sched Forecasts • CR
• PM Plan Updates: Sched Mgt Plan, Sched BL, Cost BL, Perf Meas BL
• PDU: AL, BoE, LLR, Proj Sched, Res Calendars, RR, Sched Data

SCHEDULE FORMULAS

Triangular Distribution = $tE = (tO + tM + tP) \div 3$
tM = most likely; tO = optimistic; tP = pessimistic

TF = LS - ES or LF - EF

SD = P-O ÷ 6

PERT = (O+4ML+P) ÷ 6

PERT Var = [(P-O) ÷ 6]²

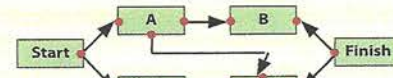
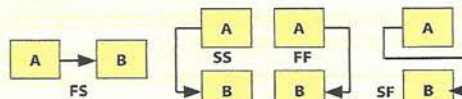
***Earned Value Management** is a methodology that combines scope, schedule, and resource measurements to assess project performance and progress.

***Schedule Variance (SV)** is a measure of schedule performance expressed as the difference between the earned value and the planned value. **SV = EV - PV**

***Schedule Performance Index (SPI)** is a measure of schedule efficiency expressed as the ratio of earned value to planned value.

*Precedence Relationships

- **Finish-to-Start (FS)** - B cannot start till A finishes.
- **Start-to-Start (SS)** - B cannot start till A starts
- **Finish-to-Finish (FF)** - B cannot finish till A finishes.
- **Start-to-Finish (SF)** - B cannot finish till A starts (rare)



***Precedence Diagramming Method (PDM)**: A technique used for constructing a schedule model in which activities are represented by nodes and are graphically linked by one or more logical relationships to show the sequence in which the activities are to be performed.

***Critical Path**: The sequence of activities that represents the longest path through a project, which determines the shortest possible duration.

***Crashing**: A technique used to shorten the schedule duration for the least incremental cost by adding resources.

***Fast Tracking**: A schedule compression technique in which activities or phases normally done in sequence are performed in parallel for at least a portion of their duration.

***Float**: The amount of time a schedule activity can be delayed without delaying the project finish date.

7.0 COST MANAGEMENT

PROCESS GROUPS

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7.1 Plan Cost Mgt

• PC • PM Plan: Sched Mgt Plan, RM Plan
• EEF • OPA
• EJ • Data Analy
• Mtgs

• CM Plan

7.2 Estimate Costs

• PM Plan: Cost Mgt (CM) Plan, QM Plan, Scope BL
• Proj Docs: LLR, Proj Sched, Res Rqmts, RR
• EEF • OPA

• EJ • Analogous Est • Parametric Est
• Bottom-Up Est • 3-Point Est
• Data Analy: Alternatives Analy, Res Analy, Cost of Quality
• PMIS • Decision Making: Voting

• Cost Est
• BoE
• PDU: AL, LLR, RR

7.3 Determine Budget

• PM Plan: CM Plan, Res Mgt Plan, Scope BL • Proj Docs: BoE, Cost Est, Proj Sched, RR • Bus Docs: Bus Case, Benefits Mgt Plan • Agmts • EEF • OPA

• EJ • Cost Aggregation
• Data Analy: Res Analy
• Historical Info Review • Funding Limit Reconciliation • Financing

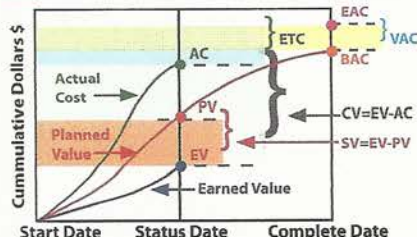
Cost BL
• Proj Funding Rqmts
• PDU: Cost Est, Proj Sched, RR

7.4 Control Costs

PM Plan: CM Plan, Cost BL, Perf Meas BL
• Proj Docs: LLR • Proj Funding Rqmts
• WP Data • OPA

• EJ • Data Analy: EV Analy, Variance Analy, Trend Analy, Res Analy
• To-Complete Perf Index • PMIS

WP Info • Cost Forecasts • CR • PM Plan Updates: Cost Mgt Plan Updates, Cost BL, Perf Meas BL • PDU: AL, BoE, Cost Est, LLR, RR



Actual Costs (AC): The actual cost of work done

Budget at Complete (BAC): The total planned value for the project

Cost Performance Index (CPI): A measure of cost efficiency on a project. (CPI < 1 indicates an unfavorable condition e.g. -.91)

Cost Variance (CV): Amount of budget deficit or surplus

Earned Value (EV): The value of the work done

Estimate at Complete (EAC): What project will cost at completion

EARNED VALUE FORMULAS

Note: ^c = Cumulative

EV = Actual % X BAC	CV = EV - AC	TCPI = (BAC-EV) ÷ (BAC-AC)	CPI = EV ÷ AC
PV = Planned % X BAC	EAC = BAC ÷ CPI	VAC = BAC - EAC	SPI = EV ÷ PV
AC = Sum of actual costs	ETC = EAC - AC	SV = EV - PV	CPI ^c = EV ^c ÷ AC ^c

Estimate to Complete (ETC): Estimated cost to complete the project from the current point in time

Forecasting: EAC, ETC, and VAC are all forecasted values

Planned Value (PV): The work scheduled to be done, (Performance Measurement Baseline)

Schedule Performance Index (SPI): A measure of schedule efficiency on a project. SPI equal to or greater than one is favorable (e.g. -1.1)

Schedule Variance (SV): Amount by which the project is ahead or behind the planned delivery date

S-Curve: Graphic display of cumulative costs, labor hours, etc., plotted against time

To-Complete Performance Index (TCPI): Ratio of remaining work to remaining budget

Variance at Complete (VAC): Actual or potential difference in BAC & EAC

8.0 QUALITY MANAGEMENT

PROCESS GROUPS

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M

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8.1 Plan Quality Management

• PC • PM Plan: *Rqmts Mgt Plan, RM Plan, SE Plan, Scope BL* • Proj Docs: *AL, Rqmts Doc, RTM, RR, SR* • EEF • OPA

• EJ • Data Gathering: *Benchmarking, Brainstorming, Interviews* • Data Analy: *Cost Benefit Analy, Cost of Quality (CoQ)* • Decision Making: *MDA* • Data Rep: *Flowcharts, Logical Data Model, Matrix Diag, Mind Mapping* • Test & Inspection Planning • Mtgs

• QM Plan • Quality Metrics
• PM Plan Updates: *RM Plan, Scope BL*
• PDU: *LLR, RTM, RR, SR*

8.2 Manage Quality

• PM Plan: *QM Plan* • Proj Docs: *LLR, QC Meas, Quality Metrics, Risk Rpt* • OPA

• Data Gathering: *Checklists* • Data Analy: *Alternatives Analy, Doc Analy, Process Analy, Root Cause Analy* • Decision Making: *MDA* • Data Rep: *Affinity Diag, Cause & Effect Analy, Flowcharts, Histograms, Matrix Diag, Scatter Diag* • Audits • Design for X • Problem Solving • Quality Improvement Methods

QR • Test & Eval Docs • CR • PM Plan Updates: *QM Plan, Scope BL, Sched BL, Cost BL* • PDU: *IL, LLR, RR*

8.3 Control Quality

• PM Plan: *QM Plan* • Proj Docs: *LLR, Quality Metrics, Test & Eval Docs* • Aprvd CR • Deliverables • WP Data • EEF • OPA

• Data Gathering: *Checklists, Check Sheets, Statistical Sampling, Questionnaires & Surveys* • Data Analy: *Perf Reviews; Root Cause Analy* • Inspection • Testing/Product Evaluations
• Data Rep: *Cause & Effect Diag, Control Charts, Histogram, Scatter Diagrams* • Mtgs

• QC Meas • Verified Deliverables • WP Info • CR
• PM Plan Updates: *QM Plan*
• PDU: *IL, LLR, RR, Test & Eval Docs*

***Quality:** The degree to which a set of inherent characteristics fulfills requirements.

Product Quality: Conformance to requirements or specifications and fitness for use.

Process Quality: The ability of the project processes used to create the desired outcome of the project.

***Cost of Quality:** All costs incurred over the life of the product by investment in preventing nonconformance to requirements, appraisal of the product or service for conformance to requirements, and failure to meet requirements.

Prevention Costs - Costs related to the prevention of poor quality in the products, deliverables, or services of the specific project.

Appraisal Costs - Costs related to evaluating, measuring, auditing, and testing the products, deliverables, or services of the specific project.

Failure Costs (Internal/External) - Costs related to nonconformance of the products, deliverables, or services to the needs or expectations of the stakeholders.

***Cost-Benefit Analysis:** A financial analysis tool used to determine the benefits provided by a project against its costs.

Grade: The characteristics and features of a product.

Grade vs. Quality: Low quality is usually not acceptable, however, low grade might be, e.g., a software system might be high quality (no bugs and works as advertised), but low grade (meaning it has few features).

QUALITY RESEARCHERS

Deming	Poor Quality is Due: *85% Process *15% Worker	14 Key Principles
Juran	Quality Trilogy: 1) Planning 2) Control 3) Assurance	
Shingo	Mistake Proofing / Poka-Yoke	Source Inspection
Crosby	Quality is Free	Zero Defects
Ishikawa	Ishikawa Diagram (Fishbone)	Design Statistics
Shewart	PDCA - Plan, Do, Check, Act	

9.0 RESOURCE MANAGEMENT

PROCESS GROUPS

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9.1 Plan Resource Mgt

• PC • PM Plan: *QM Plan, Scope BL* • Proj Docs: *Proj Sched, Rqmts Doc, RR, SR* • EEF • OPA

• EJ • Data Rep: *Hierarchical Charts, Responsibility Asgmt Matrix, Text-Oriented Formats* • Org Theory • Mtgs

• Res Mgt Plan
• Team Charter
• PDU: *AL, RR*

9.2 Estimate Activity Resources

• PM Plan: *Res Mgt Plan* • Scope BL • Proj Docs: *Activity Attributes, Activity List, AL, Cost Est, Res Calendars, RR* • EEF • OPA

• EJ • Bottom-Up Est
• Analogous Est
• Parametric Est
• Data Analy: *Alt Analy* • PMIS • Mtgs

• Res Rqmts
• BoE
• RBS
• PDU: *Activity Attribute, AL, LLR*

9.3 Acquire Resources

• PM Plan: *Res Mgt Plan, Procurement Mgt Plan, Cost BL* • Proj Docs: *Proj Sched, Res Calendars, Res Rqmts, SR* • EEF • OPA

• Decision Making: *MDA*
• Interpersonal & Team Skills: *Negotiation*
• Pre-Asgmt
• Virtual Teams

• Physical Res Asgmts • Proj Team Asgmts • Res Calendars
• CR • PM Plan Updates: *Res Mgt Plan, Cost BL* • PDU: *LLR, Proj Sched, RBS, Res Rqmts, RR, SR* • EEF Updates • OPA Updates

9.4 Develop Team

• PM Plan: *Res Mgt Plan* • Proj Docs: *LLR, Proj Sched, Proj Team Asgmts, Res Calendars, Team Charter* • EEF • OPA

• Colocation • Virtual Teams • Comm Tech • Interpersonal & Team Skills: *Conflict Mgt, Influencing, Motivation, Negotiation, Team Bldg* • Recognition & Awards • Training • Individual & Team Assessments • Mtgs

• Team Perf Assessments • CR
• PM Plan Updates: *Res Mgt Plan* • PDU: *LLR, Proj Sched, Proj Team Asgmts, Res Calendars, Team Charter* • EEF Updates • OPA Updates

9.5 Manage Team

• PM Plan: *Res Mgt Plan* • Proj Docs: *IL, LLR, Project Team Asgmts, Team Charter* • WP Rpts • Team Perf Assess • EEF • OPA

• Interpersonal & Team Skills: *Conflict Mgt, Decision Making, Emotional Intelligence, Influencing, Ldrshp* • PMIS

• CR • PM Plan Updates: *Res Mgt Plan, Sched BL, Cost BL* • PDU: *IL, LLR, Proj Team Asgmts* • EEF Updates

9.6 Control Resources

• PM Plan: *Res Mgt Plan* • Proj Docs: *IL, LLR, Physical Res Asgmts, Proj Sched, RBS, Res Rqmts, RR* • WP Data • Agrmts • OPA

• Data Analy: *Alt Analy, Cost-Benefit Analy, Perf Reviews, Trend Analy* • Problem Solving • Interpersonal & Team Skills: *Negotiation, Influencing* • PMIS

• WP Info • CR
• PM Plan Updates: *Res Mgt Plan, Sched BL, Cost BL*
• PDU: *AL, IL, LLR, Physical Res Asgmts, RBS, RR*

***Responsibility Assignment Matrix (RAM):** A grid that shows the project resources assigned to each work package.

***Plan Resource Management:** The process of defining how to estimate, acquire, manage, and utilize physical and team resources.

***Resource Management Plan:** Part of the Project Plan that provides guidance on how project resources should be categorized, allocated, managed, and released.

***Team Charter:** A document that records the team values, agreements, and operating guidelines, as well as establishing clear expectations regarding acceptable behavior by project team members.

***Resource Breakdown Structure:** A hierarchical representation of resources by category and type.

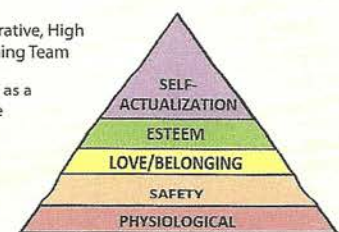
Internal resources are acquired from functional or resource managers.

External resources are acquired through the procurement processes.

***Emotional Intelligence:** The ability to identify, assess, and manage the personal emotions of oneself and other people, as well as the collective emotions of groups of people.



Tuckman's Stages of Team Development



Maslow's Hierarchy of Needs

10.0 COMMUNICATIONS MANAGEMENT

PROCESS GROUPS

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P

E

M

C

10.1 Plan Communications Mgt

• PC • PM Plan: *Res Mgt, SE Plan* • Proj Docs: *Rqmts Doc, SR* • EEF • OPA

• EJ • Comm Rqmts Analy • Comm Technology • Comm Models • Comm Methods • Interpersonal & Team Skills: *Comm Styles Assess, Political Awareness, Cultural Awareness* • Data Rep: *SE Assess Matrix* • Mtgs

• Comms Plan • PM Plan Updates: *SE Plan* • PDU: *Proj Sched, SR*

10.2 Manage Communications

• PM Plan: *Res Mgt, Comms Plan, SE Plan* • Proj Docs: *CL, IL, LLR, QR, Risk Rpt, SR* • WP Rpts • EEF • OPA

• Comm Technology • Comm Methods • Comm Skills: *Comm Competence, Feedback, Nonverbal, Presentations* • PMIS • Proj Reporting • Interpersonal & Team Skills: *Active Listening, Conflict Mgt, Cultural Awareness, Mtg Mgt, Networking, Political Awareness* • Mtgs

• Proj Comms • PM Plan Updates: *Comms Plan, SE Plan* • PDU: *IL, LLR, Proj Sched, RR, SR* • OPA Updates

10.3 Monitor Communications

• PM Plan: *Res Mgt, Comms Plan, SE Plan* • Proj Docs: *IL, LLR, Proj Comms* • WP Data • EEF • OPA

• EJ • PMIS • Data Analy: *SE Assess Matrix* • Interpersonal & Team Skills: *Observation/Conversation* • Mtgs

WP Info • CR • PM Plan Updates: *Comms Plan, SE Plan* • PDU: *IL, LLR, SR*

***Communication Requirements Analysis:** An analytical technique to determine the information needs of the project stakeholders through interviews, workshops, study of lessons learned from previous projects, etc.

***Communication Technology:** Specific tools, systems, computer programs, etc., used to transfer information among project stakeholders.

***Communication Models:** A description, analogy, or schematic used to represent how the comm process will be performed for the project.

***Communications Management Plan:** A component of the project, program, or portfolio management plan that describes how, when, and by whom information about the project will be administered and disseminated.

Communication Mgt Plan:

- ✓ Who Sends-Who Receives
- ✓ What is Sent and How
- ✓ Frequency of Updates
- ✓ Glossary of Terms

11.0 RISK MANAGEMENT

PROCESS GROUPS

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11.1 Plan Risk Mgt

• PC • PM Plan: *All Comp* • Proj Docs: *SR* • EEF • OPA

• EJ • Data Analy: *Stakeholder Analy* • Mtgs

• RMP

11.2 Identify Risks

• PM Plan: *Rqmt Mgt Plan, SM Plan, CM Plan, QM Plan, Res Mgt Plan, RM Plan, Scope BL, Sched BL, Cost BL* • Proj Docs: *AL, Cost Est, Duration Est, IL, LLR, Rqmts Doc, Res Rqmts, SR* • Agrmts • Procurement Doc • EEF • OPA

• EJ • Data Gathering: *Brainstorming, Checklists, Interviews* • Data Analy: *Root Cause Analy, Assumption & Constraint Analy, SWOT Analy, Doc Analy* • Interpersonal & Team Skills: *Facilitation* • Prompt Lists • Mtgs

• RR • Risk Rpt • PDU: *AL, IL, LLR*

11.3 Perform Qualitative Risk Analysis

• PM Plan: *RM Plan* • Proj Docs: *AL, RR, SR* • EEF • OPA

• EJ • Data Gathering: *Interviews* • Data Analy: *Risk Data Qual Assess, Risk Probability & Impact Assess, Assess of other Risk Parameters* • Interpersonal & Team Skills: *Facilitation* • Risk Categorization • Data Rep: *Probability & Impact Matrix, Hierarchical Charts* • Mtgs

• PDU: *AL, IL, RR, Risk Rpt*

11.4 Perform Quantitative Risk Analysis

• PM Plan: *RM Plan, Scope BL, Sched BL, Cost BL* • Proj Docs: *AL, BoE, Cost Est, Cost Forecasts, Duration Est, ML, Res Rqmts, RR, Risk Rpt, Sched Forecasts* • EEF • OPA

• EJ • Data Gathering: *Interviews* • Interpersonal & Team Skills: *Facilitation* • Rep of Uncertainty • Data Analy: *Simulations, Sensitivity Analy, Decision Tree Analy, Influence Diag*

• PDU: *Risk Rpt*

11.5 Plan Risk Responses

• PM Plan: *Res Mgt Plan, RM Plan, Cost BL* • Proj Docs: *LLR, Proj Sched, Proj Team Asgmts, Res Calendars, RR, Risk Rpt, SR* • EEF • OPA

• EJ • Data Gathering: *Interviews* • Interpersonal & Team Skills: *Facilitation* • Strat for Threats • Strat for Opps • Contingent Res Strat • Strat for Overall Proj Risk • Data Analy: *Alt Analy, Cost-Benefit Analy* • Decision Making: *MDA*

• CR • PM Plan Updates: *SM Plan, CM Plan, QM Plan, Res Mgt Plan, Procurement Mgt Plan, Scope BL, Sched BL, Cost BL* • PDU: *AL, Cost Forecasts, LLR, Proj Sched, Proj Team Asgmts, RR, Risk Rpt*

11.6 Implement Risk Responses

• PM Plan: *RM Plan* • Proj Docs: *LLR, RR, Risk Rpt* • OPA

• EJ • Interpersonal & Team Skills: *Influencing* • PMIS

• CR • PDU: *IL, LLR, Proj Team Asgmts, RR, Risk Rpt*

11.7 Monitor Risks

• PM Plan: *RM Plan* • Proj Docs: *IL, LLR, RR, Risk Rpt* • WP Data • WP Rpts

• Data Analy: *Tech Perf Analy, Reserve Analy* • Audits • Mtgs

• WP Info • CR • PM Plan Updates: *Any Comp* • PDU: *AL, IL, LLR, RR, Risk Rpt* • OPA Updates

THREAT Strategies

OPPORTUNITY Strategies

Escalate- When outside the scope or exceeds PM authority

Avoid

Exploit

Transfer

Share

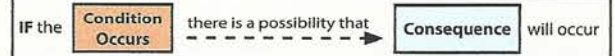
Mitigate

Enhance

Accept (Active / Passive)

***Risk:** An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives.

Opportunity: A condition or situation favorable to the project. **Threat:** A condition or situation unfavorable to the project. **Qualitative Risk Analysis:** A method of evaluating the probability and impact of project risks and conditions, and classifying them as high, moderate, and low. **Quantitative Risk Analysis:** A method of measuring the probability and impact of risks and estimating their impact on project objectives. ***Risk Register:** A repository in which outputs of risk management processes are recorded.



12.0 PROCUREMENT MANAGEMENT

PROCESS GROUPS

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12.1 Plan Procurement Management

• PC • Bus Docs: *Bus Case, Benefits Mgt Plan* • PM Plan: *SM Plan, QM Plan, Res Mgt Plan, Scope BL* • Proj Docs: *ML, Proj Team Asgmts, Rqmts Doc, RTM, Res Rqmts, RR, SR* • EEF • OPA

• EJ • Data Gathering: *Market Research* • Data Analy: *Make-or-Buy Analy* • SS Analy • Mtgs

• Procurement Mgt Plan • Procurement Strategy • Bid Docs • Procurement SOW • SS Criteria • Make-or-Buy Decisions • Independent Cost Est • CR • PDU: *LLR, ML, Rqmts Doc, RTM, RR, SR* • OPA Updates

12.2 Conduct Procurements

• PM Plan: *SM Plan, Rqmts Mgt Plan, Comms Mgt Plan, RM Plan, Procurement Mgt Plan, Config Mgt Plan, Cost BL* • Proj Docs: *LLR, Proj Sched, Rqmts Doc, RR, SR* • Procurement Doc • Seller Proposals • EEF • OPA

• EJ • Advertising • Bidder Conferences • Data Analy: *Proposal Eval* • Interpersonal & Team Skills: *Negotiation*

• Selected Sellers • Agrmts • CR • PM Plan Updates: *Rqmts Mgt Plan, QM Plan, Comms Mgt Plan, RM Plan, Procurement Mgt Plan, Scope BL, Sched BL, Cost BL* • PDU: *LLR, Rqmts Doc, RTM, Res Calendars, RR, SR* • OPA

12.3 Control Procurement

• PM Plan: *Rqmts Mgt Plan, RM Plan, Procurement Mgt Plan, Change Mgt Plan, Sched BL* • Proj Docs: *AL, LLR, ML, QR, Rqmts Doc, RTM, RR, SR* • Agrmts • Procurement Doc • Aprvd CR • WP Data • EEF • OPA

• EJ • Claims Admin • Data Analy: *Perf Reviews, EV Analy, Trend Analy* • Inspection • Audits

• Closed Procurements • WP Info • Procurement Doc Updates • CR • PM Plan Updates: *RM Plan, Procurement Mgt Plan, Schedule BL, Cost BL* • PDU: *LLR, Res Rqmts, RTM, RR, SR* • OPA Updates

Project Management Professional (PMP)[®] SUCCESS SHEET

Contract: Mutually binding agreement that obligates the seller to provide the product, service or result and the buyer to pay for it.

IFB: Invitation for Bid on potential work, used when selection is based on price.

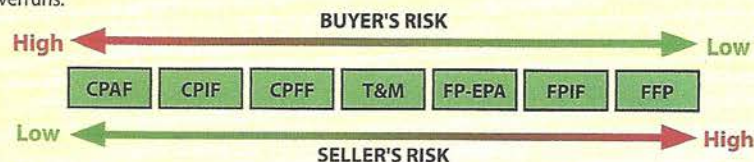
Point of Total Assumption: Cost point where Seller assumes responsibility for all cost overruns.

RFI: Request for Information regarding proposed work.

RFP: Request for Proposal from seller on work, used when skill or technical capabilities are required.

RFQ: Request for Quotation from seller on proposed work, typically used when selection is based on price.

Target Price = Target Cost + Target Fee



13.0 STAKEHOLDER MANAGEMENT

PROCESS GROUPS

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13.1 Identify Stakeholders

- PC • Bus Docs: Bus Case, Benefits Mgt Plan • PM Plan: Comms Mgt Plan, SE Plan
- Proj Docs: CL, IL, Rqmts Doc
- Agrmts • EEF • OPA
- EJ • Data Gathering: Questionnaires & Surveys, Brainstorming
- Data Analy: Stakeholder Analy, Doc Analy
- Data Rep: Stakeholder Mapping/Rep
- Mtgs
- SR • CR • PM Plan Updates: Rqmts Mgt Plan, Comms Mgt Plan, RM Plan, SE Plan • PDU: AL, IL, RR

13.2 Plan Stakeholder Engagement

- PC • PM Plan: Res Mgt Plan, Comms Mgt Plan, RM Plan
- Proj Docs: AL, CL, IL, Proj Sched, RR, SR
- Agrmts • EEF • OPA
- EJ • Data Gathering: Benchmarking
- Data Analy: Assumption & Constraint Analy, Root Cause Analy • Decision Making: Prioritization/Ranking • Data Rep: Mind Mapping, SE Assess Matrix • Mtgs
- SE Plan

13.3 Manage Stakeholder Engagement

- PM Plan: Comms Mgt Plan, RM Plan, SE Plan, Change Mgt Plan
- Proj Docs: CL, IL, LLR, SR
- EEF • OPA
- EJ • Comm Skills: Feedback • Inter-personal & Team Skills: Conflict Mgt, Cultural Awareness, Negotiation, Observation/Conversation, Political Awareness • Ground Rules • Mtgs
- CR • PM Plan Updates: Comms Mgt Plan, SE Plan • PDU: CL, IL, LLR, SR

13.4 Monitor Stakeholder Engagement

- PM Plan: Res Mgt Plan, Comms Mgt Plan, SE Plan • Proj Docs: IL, LLR, Proj Comms, RR, SR
- WP Data
- EEF • OPA
- Data Analy: Alt Analy, Root Cause Analy, Stakeholder Analy • Decision Making: MDA, Voting • Data Rep: SE Assess Matrix • Comm Skills: Feedback, Presentations • Interpersonal & Team Skills: Active Listening, Cultural Awareness, Ldrshp, Networking, Political Awareness • Mtgs
- WP Info • CR
- PM Plan Updates: Res Mgt Plan, SE Plan
- PDU: CL, IL, LLR, SR



Power-Interest Grid: Grouping stakeholders based on their level of authority (power) and their level of concern (interest) in the project outcome. Other methods include: the power/influence grid, and impact/influence grid

Stakeholder Analysis: Approach for gathering and analyzing information to determine whose interest should be taken into account for the project, relating the interests, expectations, and influence to its purpose

Stakeholder Engagement Assessment Matrix: Used to document stakeholder level of engagement vs desired level of engagement in five categories: Unaware, Resistant, Neutral, Supportive, Leading.

Stakeholder Management Plan: Provides guidance on how stakeholders can be best involved in the project

Stakeholder Register: Used to plan ways to engage project stakeholders and contains all details related to identified stakeholders, including identification info, assessment info, and stakeholder classification. Updated throughout the lifecycle of the project as stakeholders may change or new ones are identified

PMP EXAM TIPS

There is not enough room to spell out every process name for this Success Sheet; use it as a memory jogger in combination with the PMBOK[®] Guide, and a proven training class.

Before the Exam

- Select a training provider with a proven track record of success.
- Complete the PMI exam application process at www.pmi.org.
- After receiving PMI approval, schedule your test with Prometric.
- Use practice exams to measure progress, target 90% or better.
- Bring 2 forms of ID & eligibility letter, ensure the names match.
- Pre-visit the Prometric test center and plan to arrive 30 minutes early.

- Get a good night's rest before the exam – don't cram the night before.

While Taking the Exam

- When the exam begins, **take 10 minutes to create a formula sheet**, and capture any other memory aids for ready reference during the exam.
- Read all four answers; many will seem correct, but only one is the best answer.
- Do not choose any answer that involves skipping steps or shortcuts.
- There is no penalty for a wrong answer. Be sure to answer ALL 200 questions.
- Remember that PMs do not delegate decision making, PMs always make the decision.
- Do not be tempted to answer questions on the exam based on your experience, PMI's view is the only one that counts.
- Sequence processes from inputs and outputs, do not bypass a process.

- Sometimes it helps to scan the answers first, read the question, and then read the answers again.
- Stay calm – don't stress. Take a break if needed.
- Do not be confused with distracting information, learn how to eliminate information provided that is not relevant to answering the question.
- Many questions have 2 obviously correct answers and 2 that are obviously incorrect. Learn to spot the incorrect answers.
- Statements that represent all-inclusive generalizations are usually incorrect, so pay attention for words like "never", "always", "must", and so on. However, words such as "often", "may", "sometimes", "could" usually indicate carefully qualified statements and are generally correct.
- Prometrics will offer ear plugs, many find them helpful to reduce distractions.

DO YOU NEED HELP WITH PROJECT MANAGEMENT?

Reed provides on and off site PMP prep, as well as expert services and training in Acquisition, Advanced Analytics, Risk Management, Project & Program Management, and Systems Engineering. We also provide project management process improvement using Reed's Proprietary Process Management Maturity Model RPM3. It is also easy to contract with us; contact Reed to learn how we can help you.

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