



Security Project Management Training

- 5. Execution
- 6. Monitoring
- 7. Closing

Execution

Part V to Planning,
Organizing, & Controlling
Resources during a Project



Execution Learning Objectives



Focus

Key Points for Project Execution



- ✓ Plan Execution & Management
- ✓ Installation of Security System Technologies
- ✓ Scope & Change Management
- ✓ Labor Management
- ✓ Time Management
- ✓ Communications Management
- ✓ “Always be Closing”

Execution: Time & Scope Management

Conscious management of project time & scope.

Calendar time allocation – “time blocking”

- Manage time allocation per project activities
- Prioritize daily “to do” items with Project Team
- Increase effectiveness, efficiency, productivity
- Utilize:
 - Leadership skills & experience
 - Team resources
 - Software tools





Time Management Actions:

- ✓ Execute against defined Project Plan
- ✓ Manage & re-align activity prioritization
- ✓ Complete Tasks start to finish
- ✓ Set project labor activity expectations daily
- ✓ Track durations to gain time if possible
- ✓ Monitor & update schedule 2X min weekly

Execution: Time & Scope Management



Scope and time management:

- Map a weekly plan to execute specific schedule activities
- Break down daily expectations as needed
- Set a specific time for Team daily check-in
 - What was achieved yesterday
 - What will be achieved today
 - Any road blocks
- Understand & coordinate activities that can happen simultaneously.
- Time is limited: have the most time at project start.
- Time is always short! Get stuff done early or on time.

Execution: Monitor Activity Sequencing

Integration project activities are multiple & overlapping to complete scope.

- Be aware of & manage dependencies.
- Prioritize conflicts & activities to critical path.
- Sequence prioritizations weekly or daily.
- Re-access, re-align, update regularly.
- Communicate continuously with your team.
- Document & monitor: updates: progress, lack-of, changes, road-blocks, etc.





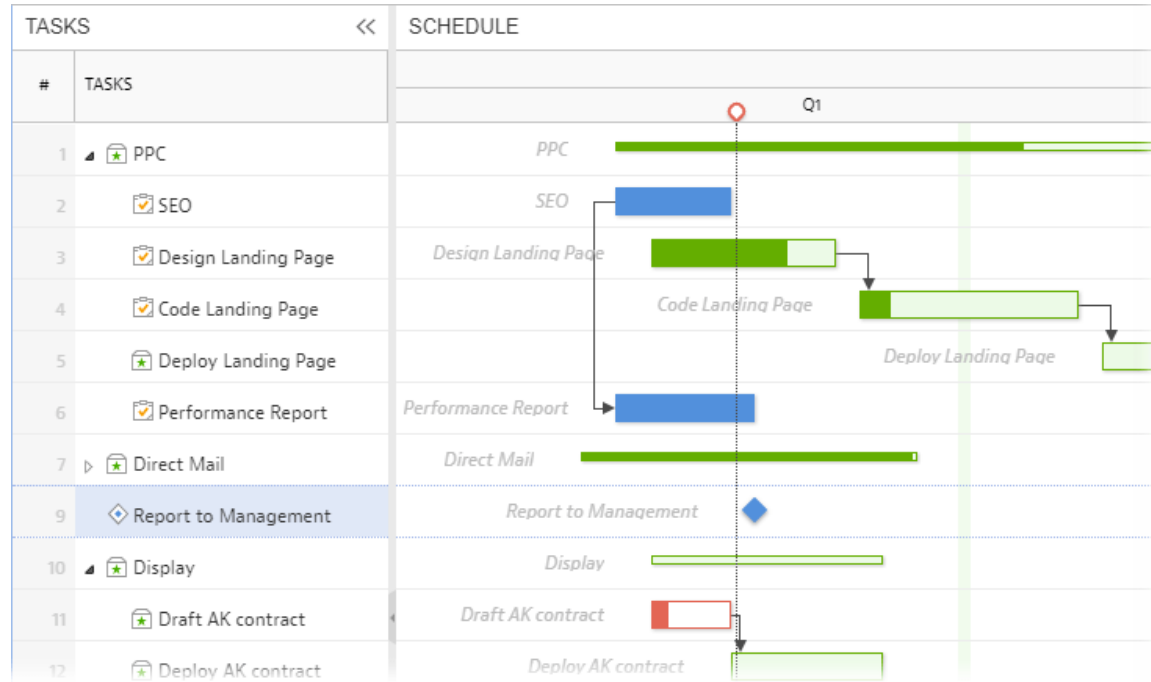
Manage Time Required for Project Activities

ID	Task Name	Start	Finish	Duration	Feb 2004										
					18	19	20	21	22	23	24	25	26		
1	Order Cameras	2/18/2004	2/19/2004	2d	█	█									
2	Pull Wire	2/19/2004	2/20/2004	2d		█	█								
3	Install and terminate Cameras	2/23/2004	2/23/2004	1d							█				
4	Install and terminate Multiplexer	2/24/2004	2/24/2004	1d								█			
5	Start-up system	2/25/2004	2/25/2004	1d									█		

Manage Project Scope Activities

Easy to see:

- Project phasing
- Specific Tasks
- Current implementation
- Activities complete
- Dependencies
- Time frame(s)
- Responsible parties/resources
- Communication – scheduled!



Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	2014																
						February				March				April				May				
						27	03	10	17	24	03	10	17	24	31	07	14	21	28	05		
DESIGN		121	45	08-Oct-13A	04-Apr-14																	
TENANT IMPROVEMENT		45	45	03-Feb-14	04-Apr-14																	
B2330	IGE RFP Responses Due	8	8	03-Feb-14	12-Feb-14	IGE RFP Responses Due																
B2340	GSA IGE Award	4	4	13-Feb-14	18-Feb-14	GSA IGE Award																
B1560	GSA TI Price Proposal IGE	10	10	19-Feb-14	04-Mar-14	GSA TI Price Proposal IGE																
B2030	GSA Loading Dock IGE	10	10	19-Feb-14	04-Mar-14	GSA Loading Dock IGE																
B1590	TI Price Proposal Review/Approval	23	23	05-Mar-14	04-Apr-14	TI Price Proposal Review/Approval																
B2040	Loading Dock Review/Approval	23	23	05-Mar-14	04-Apr-14	Loading Dock Review/Approval																
DESIGN PHASE SERVICES		73	17	06-Nov-13 A	25-Feb-14																	
CORE / SHELL & TI		73	17	06-Nov-13 A	25-Feb-14																	
D1720	Light Fixture Submittals	15	2	06-Nov-13 A	04-Feb-14	Light Fixture Submittals																
D1750	Fire Alarm Submittal	20	2	06-Nov-13 A	04-Feb-14	Fire Alarm Submittal																
D1780	Firesprinkler Shop Dwg Submittal	15	2	06-Nov-13 A	04-Feb-14	Firesprinkler Shop Dwg Submittal																
D1810	Sheetmetal Shop Dwg	15	2	06-Nov-13 A	04-Feb-14	Sheetmetal Shop Dwg																
D1840	Fire Damper Submittals	15	2	06-Nov-13 A	04-Feb-14	Fire Damper Submittals																
D1960	Optical Turnstile Submittal	15	2	06-Nov-13 A	04-Feb-14	Optical Turnstile Submittal																
D1990	Inspection Booth Color Approvals	10	5	25-Nov-13 A	07-Feb-14	Inspection Booth Color Approvals																
D1370	Exterior Glazing - Fabrication	37	9	28-Nov-13 A	12-Feb-14	Exterior Glazing - Fabrication																
D2420	Gen Yard Rebar Submittal	10	5	13-Jan-14 A	07-Feb-14	Gen Yard Rebar Submittal																
D1730	Light Fixture Submittal Approvals	15	15	05-Feb-14	25-Feb-14	Light Fixture Submittal Approvals																
D1760	Fire Alarm Submittal Approval	15	15	05-Feb-14	25-Feb-14	Fire Alarm Submittal Approval																
D1790	Firesprinkler Shop Dwg Submittal Approval	15	15	05-Feb-14	25-Feb-14	Firesprinkler Shop Dwg Submittal Approval																
D1820	Sheetmetal Shop Dwg Approvals	5	5	05-Feb-14	11-Feb-14	Sheetmetal Shop Dwg Approvals																
D1850	Fire Damper Submittal Approvals	5	5	05-Feb-14	11-Feb-14	Fire Damper Submittal Approvals																
D1970	Optical Turnstile Approval	15	15	05-Feb-14	25-Feb-14	Optical Turnstile Approval																
D1520	Physical Security Coord Meeting	1	1	10-Feb-14	10-Feb-14	Physical Security Coord Meeting																
D2430	Gen Yard Rebar Submittal Approvals	5	5	10-Feb-14	14-Feb-14	Gen Yard Rebar Submittal Approvals																
D1300	Exterior Glazing Delivery	2	2	13-Feb-14	14-Feb-14	Exterior Glazing Delivery																
ENVIRONMENTAL REMEDIATION		65	6	08-Oct-13 A	10-Feb-14																	

- Establish project phases
- Create Milestones
- Add line item detail
- Include sub-trades
- Assign responsibilities
- Establish time required: Days/Hrs
- Roll up to Phase totals
- Show: Holidays / black out dates / vacation time
- Schedule important communications
- Consider “personal” time out (i.e. vacation)
- Include SOV/Invoice submission dates

Scope Execution & Management

Schedule Control

The project schedule is changing constantly.

Adjust & update regularly with consideration for:

- Completed work
- Delayed work
- Other relevant Trade work
- New and completed dependencies
- Changes - verify as approved & insert or add / adjust where appropriate
- Contingency allowances
- Risk: backup plans
- Overall completion dates

BOM Management

- ✓ Scheduling procurement
- ✓ Site delivery
- ✓ Stored materials
- ✓ Document changes from original
- ✓ Deviation from prior Change Orders
- ✓ Maintain clear history
- ✓ Date specific notes
- ✓ Keep eye on cash flow needs



Schedule of Values

Detailed Statement furnished by:

- Construction Contractor
- Builder
- Others
- Outlines portions of contract sum
- Allocates values for parts of work
- Used as basis for submitting and reviewing payments

G702 APPLICATION and CERTIFICATE for PAYMENT

To:	Project:	Application No:	Distribution to:
From:		App. Date:	<input type="checkbox"/> OWNER
		Period to:	<input type="checkbox"/> CONSTRUCTION MGR.
		Project Nos:	<input type="checkbox"/> ARCHITECT
		Contract Date:	<input type="checkbox"/> CONTRACTOR
			<input type="checkbox"/> OTHER
Contract For:	Via Architect:		

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, G703, is attached.

1. ORIGINAL CONTRACT SUM	<input type="text"/>
2. Net Change By Change Orders	<input type="text"/>
3. CONTRACT SUM TO DATE	<input type="text"/>
4. TOTAL COMPLETED AND STORED TO DATE	<input type="text"/>
5. RETAINAGE:	
a. of Completed Work	<input type="text"/>
b. of Stored Material	<input type="text"/>
TOTAL RETAINAGE	<input type="text"/>
6. TOTAL EARNED LESS RETAINAGE	<input type="text"/>
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	<input type="text"/>
8. CURRENT PAYMENT DUE	<input type="text"/>
9. BALANCE TO FINISH, INCLUDING RETAINAGE	<input type="text"/>

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:
By: _____ Date: _____

State of: _____ County of: _____
Subscribed and sworn to before me this _____ day of _____

The above personally appeared before me, the undersigned notary public, and provided satisfactory evidence of identification to me. The person who signed this document in my presence and swore or affirmed to me that the contents of this document are truthful and accurate to the best of his/her knowledge and belief.

Notary Public: _____ My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents based on on-site observations, the data comprising this application, and conversations to the Owner, to the best of the Architect's knowledge, information and belief the Work has progressed as indicated in the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED: _____

(Action explanation if amount certified differs from the amount applied for: Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT:
By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CAUTION: You should use an original document which has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced.

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Execution: Change Order Management

Change Order Process

- Out of Scope documentation
- Positive, Negative, No Cost
- Add “1” of these “on the fly”

Approval Process

- Use approved document
- Define specific scope
- Document cost
- Manage approval prior to start

Process for Close Out

Turnover
Payables / Receivables
Project invoicing & payment



Execution: Change Management Considerations

- ✓ Documentation of Scope Change
 - Deviation from contract
 - Impact from other trade changes
- ✓ Personnel Availability
 - Internal Team
 - External Team
- ✓ Product obsolescence during project
- ✓ Job site conditions
- ✓ Weather factors (snow to hurricanes)
- ✓ Mobilization/re-mobilization
- ✓ Weekly/monthly Progress Reports
- ✓ Start Dates, Targeted Completion Dates, Completion Dates
- ✓ Assigned Resources



Change Order Execution

- ✓ Change Orders requests
- ✓ Execution of Change Orders
- ✓ Closing out Change Orders
- ✓ Effect on schedule, resources, additions to base job
- ✓ Approval to proceed





What the customer really
needed



Monitoring

Part VI to Planning,
Organizing, & Controlling
Resources during a Project



Monitoring Learning Objectives



Monitoring

Processes performed to observe project execution and identify potential problems in a timely manner so that corrective action can be taken.

Monitoring helps improve performance and achieve results.

Goal: improve current and future management of project outcomes and impacts.

Monitoring: WHY to Monitor and Assess?



- ✓ Assess results: if and how objectives are met
- ✓ Improve PM process & planning
- ✓ Promote learning: general applicability; approaches & outcomes; impact; what works, what doesn't
- ✓ Understand Stakeholders perspective

Monitoring: Efficiency, Effectiveness & Relevance

- ✓ **Efficiency** the time and resources (effort) relative to outcomes.
Applying: less expensive, less time-consuming, more appropriate approach to reach same objectives.
- ✓ **Effectiveness:** measures usefulness of process to reach positive outcome.
- ✓ **Relevance or appropriateness:** usefulness, ethics and flexibility within the particular context.

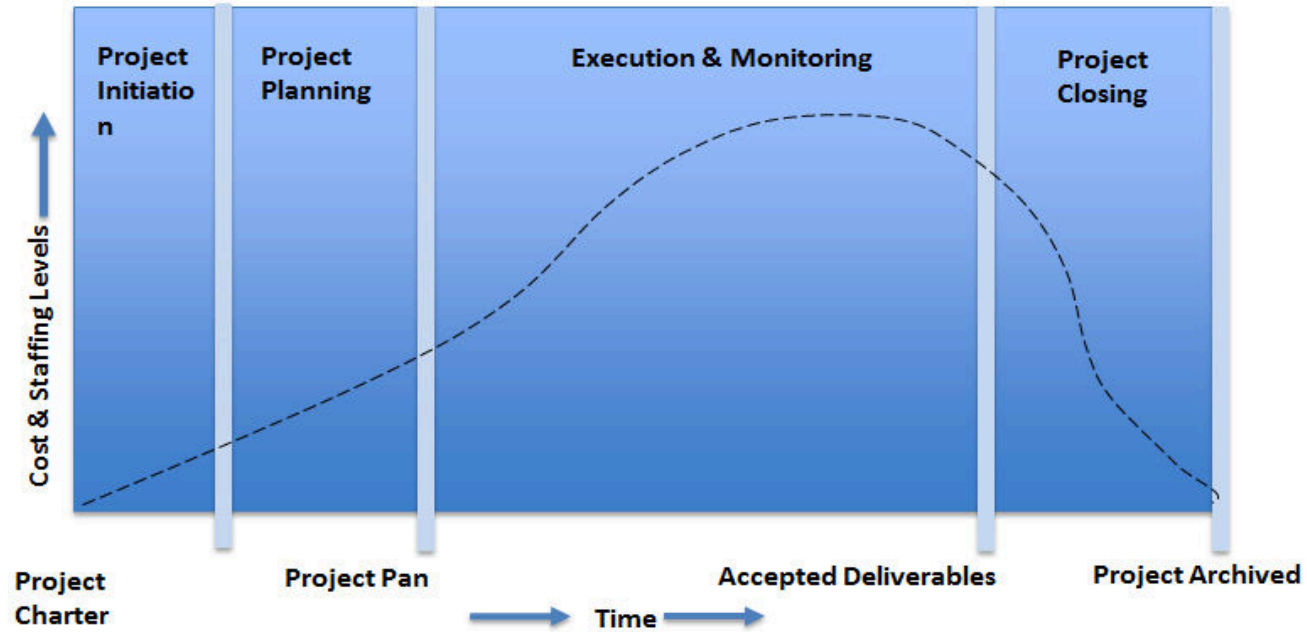


Project Monitoring

- Priorities & Progress:
- Contractual obligations
- Procurement & Budget Management
- Labor
- Quality Control & Delivery
- Communication & Documentation
- Risk Management
- Applicable Codes, Laws



Monitoring Cost / Staffing vs Time Line



A woman wearing a white hard hat and a high-visibility blue and yellow jacket is shown in profile, looking at a computer monitor. The background is a dimly lit control room with several glowing circular lights. The text is overlaid on a semi-transparent white circle on the left side of the image.

Project Schedule Monitoring

- ✓ Use of PM Software tools
- ✓ Customer/End User
- ✓ Major Milestones identified
- ✓ Dependencies identified
- ✓ Deliverables identified
- ✓ Resource efforts
- ✓ Post Completion requirements

Project Schedule Monitoring

ELECTRICAL					
M	Install Panel Tube	5	5	06-May-14	12-May-14
M	In-Wall Electrical Core Area Walls	3	3	09-May-14	13-May-14
M	Rough-In Security	3	3	14-May-14	16-May-14
M	OH Lighting Conduit - East	5	5	20-May-14	27-May-14
M	OH Fire Alarm - East	5	5	20-May-14	27-May-14
M	Set Panelboards & Elec Rm Conduit	10	10	03-Jun-14	16-Jun-14
M	Power to Mech OH Equip - East	5	5	10-Jun-14	16-Jun-14
M	Lighting Controls - East	5	5	10-Jun-14	16-Jun-14
M	OH Lighting Conduit - West	5	5	17-Jun-14	23-Jun-14
M	OH Fire Alarm - West	5	5	17-Jun-14	23-Jun-14
M	Power to Mech OH Equip - West	5	5	24-Jun-14	30-Jun-14
M	Lighting Controls - West	5	5	24-Jun-14	30-Jun-14
M	Pull OH Electrical Circuits	10	10	01-Jul-14	15-Jul-14
M	Mass Cable Pull	10	10	04-Aug-14	15-Aug-14
SECURITY					
M	Pull OH & In-Wall Security Cabling	5	5	13-Jun-14	19-Jun-14
M	Trim Out Devices & Terminate	5	5	05-Aug-14	11-Aug-14
M	Tie In Security to Dismountable Walls	5	5	25-Sep-14	01-Oct-14
WALLS					
B	Frame & Hang Mech/Elec Closets	2	2	02-May-14	05-May-14
B	Frame & Top Out Core Walls	3	3	06-May-14	08-May-14
B	Inwall Blocking	3	3	09-May-14	13-May-14
B	Elevator Shaftwall	1	1	19-May-14	19-May-14
B	Perimeter Spray Insulation	5	5	27-May-14	02-Jun-14
B	Frame Perimeter Walls	7	7	05-Jun-14	13-Jun-14
B	Hang & Finish Exterior Walls	5	5	16-Jun-14	20-Jun-14
B	Set Door Frames	3	3	01-Jul-14	03-Jul-14
B	Hang & Finish All Core Walls	3	3	07-Jul-14	09-Jul-14
B	Complete Mech Rm Walls	3	3	08-Jul-14	10-Jul-14



Monitoring & Managing Scope

- ✓ Review/update of Project Documents
- ✓ Plan within the Plan
- ✓ Project duration
- ✓ Scope Creep
- ✓ Enlist your team
- ✓ Establish regular cadence & expectations



Components of Quality Control

- Product receipt & confirmation
- Pre-Build – program / testing
- Quality Control sign-off
- Performance Standards
- Storage quality & needs met
- Site Conditions
- Documentation complete, accurate, up to date
- Acceptance Standards

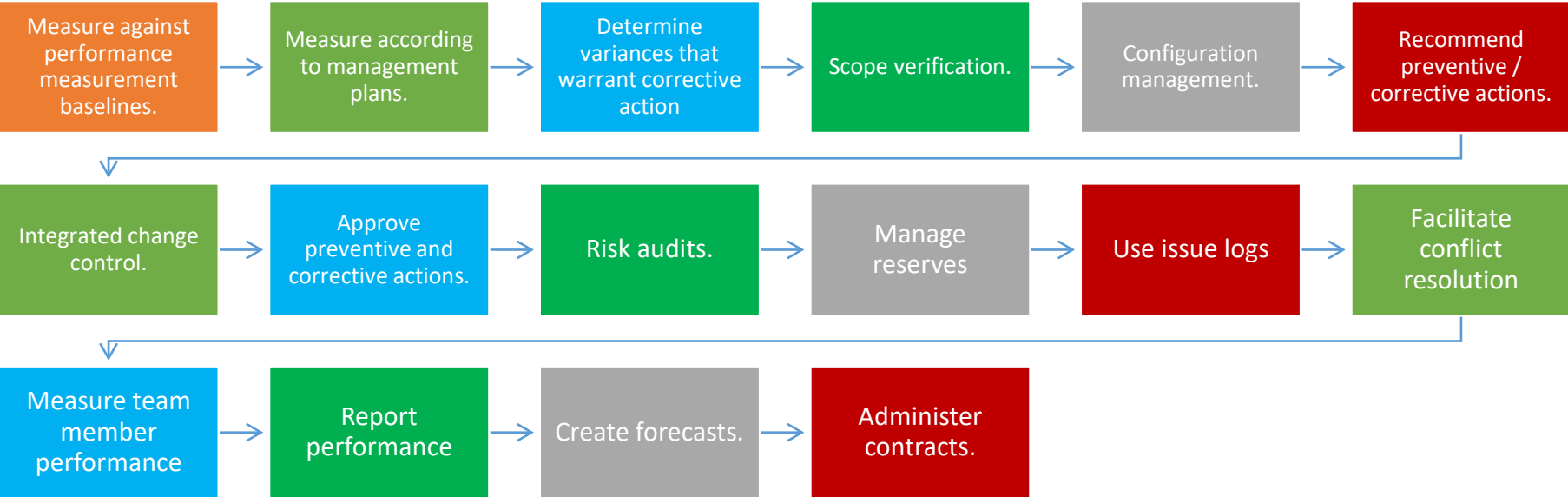


Quality Management

- ✓ Quality of Workmanship
 - ✓ Adherence to accepted Standards
 - ✓ Adherence to scope requirements
 - ✓ Quality Assurance & Quality Control
-
- ✓ Quality Control is a “process”
 - ✓ Evaluation: activities/elements conformance
 - ✓ Requires regular inspections
 - ✓ Compares to accepted standard



Monitoring & Controlling Breakdown Processes



Why Focus on Quality Assurance?

Goals:

- ✓ Identification
- ✓ Correction
- ✓ prevention

Administrative and procedural activities

Guard against defects and deficiencies

Set expectations

- Compare to standards or requirements





Closing

Part VII to Planning,
Organizing, & Controlling
Resources during a Project





Closing

Traditional Project Management Approach

- End of project, lessons learned
- Individual teams/working groups
- Meeting ground rules
- What did we do well?
- What are the opportunities for improvement?
- Project Closing Report
- Implementation tasks at next project

Agile Methodology for Project Management

- Daily “Stand Ups”
- Hand-off / Review: end of each *project iteration*
- Retrospective:
- Productive/enjoyable
- Confusing, Frustrating
- Need more of
- Keep the same
- Need less of
- New ideas
- Implementation tasks next iteration

Closing Learning Objectives

- Closing tasks during project planning, execution, monitoring and closing.
- Identify punch list items, reasons project cannot close.
- Evaluate project deliverable met.
- Identify changes to improve delivery of future projects.





Closing

Closing starts in Planning.

What could go wrong??

- ✓ Projects closed prematurely or not closed.
- ✓ Issues still open closed.
- ✓ Requirements not met.
- ✓ Invoicing incomplete.
- ✓ Payments aren't received.
- ✓ AHJ approval needed.
- ✓ Documentation to Owner incomplete.
- ✓ Owner acquired/sold.
- ✓ GC goes bankrupt.
- ✓ Natural event forces project shutdown.



Closing

Implementing project closure involves:

- ✓ Customer acceptance of required deliverables.
- ✓ Release of resources.
- ✓ Close of subcontractor contracts, invoices, payments, deliverables.
- ✓ System testing documentation complete, provided & filed.
- ✓ As-Built drawings issued.
- ✓ Manuals issued.
- ✓ Training complete.
- ✓ Warranty statements & turnover process complete.
- ✓ Insurances, Bonds, Permits closed.
- ✓ Return Merchandise "RMA"s complete.
- ✓ Construction equipment returned / closed.
- ✓ Archiving all project documentation and records.
- ✓ Project Budget reviewed, all items complete, payments rec'd/made.
- ✓ Evaluation of project team.
- ✓ Service contract initiated.

Critical Project Closing Items

Review of project budget and actual cost is essential in good project management.

- Review financial performance (ratios) on job
- Did cost differ from budget due to

- 1) Scope creep
- 2) Incorrect bid or estimate performance
- 3) Poor implementation performance (rework or loss)
- 4) Predecessor / collaborating trade impacts



Critical Project Closing Items: Procurement

- Proper closure ensures:
 - All contracted goods/services have been received.
 - Vendors have been paid.
 - Any Liens or encumbrances have been released.
 - Manufacturer requirements such as licenses or registrations have been initiated.

Critical Project Closing: Quality



Quality Assurance reviews or inspections as part of project closing:

- ✓ Signify work done meets quality standards.
- ✓ Part of project closing documentation for the customer.
- ✓ Signals release of resources, hold backs, etc.

Critical Project Closing: Risks

- ✓ Most risks identified for a project don't endure to the end of the project.
- ✓ When identified risks expire, a closing process is initiated that can include:
 - The release of resources for mitigating or responding to the risk.
 - The release of contingency funds associated to the risk.



Critical Project Closing: Warranties

- Warranty review: client & service department.
- Supply warranty statements.
 - Ensure all parties understand expectations & responsibilities.
 - Define process for initiating service calls.
 - Schedule preventative maintenance tasks within warranty period.

Critical Project Closing: Sign off

- Customer sign-offs for deliverables
- These sign-offs become part of the closing documents and are used:
 - To initiate payment requests, including release of retention.
 - As part of the final customer acceptance documentation.
 - Determine a Go/No-go decision for the next section of the project.

Security Project Closure Checklist

Purpose

- To retain and transfer knowledge
- To assess review the project and identify the lessons learned
- To get customers official acceptance of the final deliverable
- To officially close the project
- To make sure that any potential outstanding activities and tasks are assigned to the right people

Objective

There should be a final project report, or close-out report, at the end of the meeting.

The report should capture:

- What went well,
- What were the challenges,
- The lessons learned,
- Recommended future actions, and
- Any information you think would be helpful to future projects and teams.

Security Project Close Meeting

The Attendees

- Security Project Manager
- Project Executive
- Project Team
- Project Sponsor
- Important project Stakeholders

Meeting Prep

- Close-out planned from beginning.
- Meeting agenda
- Commitment from Participants
- Agenda to participants beforehand
- Documentation turnover (As-Built, Warranty Statements, Support, e.g.)

Security Project Closing

Closing Meeting

- ✓ Prepare discussion questions, here are some example questions:
 - What went really well?
 - How can we replicate the successes in future projects?
 - What challenges did we meet and how did we manage the challenges?
 - How could we have managed the challenges better?

- Did we stay on budget, scope and time? How much did it deviate from the project plan?
- Did everyone know exactly what their responsibilities and role was?
- Did we assess and manage risks effectively?
- What risks and changes did we fail to anticipate?
- How can we assess unforeseen events better?
- How can we use the gained experience and knowledge for future projects?
- What recommendations can we give future projects, managers and teams?

Security Project Closure Checklist

Discuss project successes

Identify areas for improvement, lessons learned, recommendations for future projects etc.

Discuss the next steps and any possible outstanding project actions

Lessons learned:

- ✓ What went right and what went wrong
- ✓ What can be improved, Recommendations for future projects

Meeting agenda:

- ✓ Explanation of the purpose of the meeting
- ✓ Introduction of participants that are not known to everyone (e.g. the outside moderator or external stakeholders)
- ✓ Introduction of the project
- ✓ Evaluation of project
- ✓ Identifying lessons learned
- ✓ Next steps
- ✓ Official project closure

Evaluate project success: planned vs actual deliverables, comparing achievements to objective, quality indicators and ROI.

Discuss next steps:

- ✓ Outstanding tasks or project follow-up activities
- ✓ Creating final close-out report
- ✓ Make project documentation, including close-out report, available to future projects and teams, i.e. retain knowledge



After the meeting

- ✓ Issue meeting minutes including important decisions and action items
- ✓ Create & review close-out report
- ✓ Issue close-out report to project team
- ✓ Add close-out report to project documentation
- ✓ Make folder accessible to future project teams

Successful Closing is a Successful Project



Contractual & Catalog WBS elements complete & approved.



Project documentation complete & filed for proper internal & external close.



Approved changes documented, complete, turned over & approved.



Project & customer information transferred to support.



Training complete; manuals & supporting media delivered.