PROJECT MANAGEMENT BEST PRACTICES

(for ANY project)

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PURPOSE

- As the title suggests…
- Applicable to any size project
- Applicable to Technology, Construction, Manufacturing, …
- Visualize how this information applies to YOUR project(s).

AEROVINE

- We provide Technical Project Management and Cloud consulting IT services to many diverse organizations.
- We are PMP certified through Project Management Institute
- Partners: Amazon Web Services, Microsoft, Google Suite
- We maintain in-house technical certifications and have successfully completed dozens of complex technology projects in many diverse industries

COMPLETED PROJECTS

- Software Upgrades: Planning and deployment
- Networking: Global network projects
- Work Flow and Process Improvement
- Global desktop workspace supporting thousands of users worldwide
- Video: multi-million dollar global video deployments
- Business Intelligence Visualization and Analytics
- Infrastructure: General Contracting and infrastructure projects. Colorado-Lodge.com

PROJECT METHODOLOGIES

- Project Management International (PMI)
- Agile
- Prince 2
- Kan-Ban
- Six Sigma
- Lean

** This presentation covers PMI Best Practices **

PROJECT MANAGEMENT INTERNATIONAL

- Founded in 1969
- 740,000 Project Management Professional (PMP)®–certified professionals, more than half live outside the USA and 1 in 6 live in China
- 470,000 members from 207 countries and territories, served by 283 chartered and 12 potential chapters
- 5 million copies of all editions of A Guide to the Project Management Body of Knowledge (PMBOK® Guide) in circulation (including official translations into more than 10 languages)
- PMI.org

WHAT IS A PROJECT?

- Temporary endeavor to create a product, service or result
- Initiated to accomplish a unique, singular goal
- Build something or improve something
- Not routine, ongoing operations
- Projects should follow a Project Plan

WHAT IS A PROJECT PLAN?

A Project Plan is a collection of related artifacts (not just a Gannt chart or spreadsheet)

- Business Case (Justification)
- Requirements List
- Stakeholder Registry
- Communications Plan
- Governance / Change Control
- Tools, charts, documents
- Scope Management Plan
- Resource Management Plan
- Schedule Management Plan
- Quality Management Plan
- Cost Management Plan
- Risk Management Plan

WHY INITIATE A PROJECT?

- Market demand
- Strategic opportunity
- Business needs
- Customer request
- Technological advancement
- Legal requirements (DOD NIST, GDPR)
- Sometimes it costs more NOT to do a project

WHO INITIATES A PROJECT?

- Projects are initiated by a Sponsor who has a Business Case that Justifies a Project Charter, and has the necessary authority, resources and/or budget to complete it.

- The Project Charter contains the high-level project description and product characteristics.

WHO ARE YOUR STAKEHOLDERS?

- Any person or group who has an interest in the outcome of your project.
- Customers, executives, suppliers, operational support, subject matter experts (SMEs), the project team and other internal and external teams.
- Stakeholders provide Requirements for the project.
- Identify and include your stakeholders early in the project. Your project's success depends on it!

EXAMPLE: STAKEHOLDER REGISTER

	Name	Role	Organization	Location	Time Zone	Email	Phone	Vacation Schedule	Backup Contact	Escalation
1	Max Power	Sponsor	Myco	Denver, CO	-7 UTC	Max@gm		Vaca. 7/1 - 7/31		
2	Ivanna Selmore	Sales	Myco	Atlanta, GA	-5 UTC	Iva@gma				
3	Bob Builder	Facilities	Myco	Denver, CO	-7 UTC	Bob@gm				
4	Reed Pimbok	Project Manager	Aerovine	Denver, CO	-7 UTC	Ree@gm				
5	Frank L. Rong	SW Architect	Falling Waters, LLC	Mill Run, PA	-5 UTC	Fra@gm				
6	Cody Lott	SW Developer	EverTech Internatioal	San Francisco, CA	-8 UTC	Cod@gm				
7	Manny Fields	Database Admin	EverTech Internatioal	San Francisco, CA	-8 UTC	Man@gm				
8	Annette Guru	Network Engineer	EverTech Internatioal	Bangalore, India	+5.5 UTC	Ann@gm		Holiday, 11/9		
9	Anita Spin	Marketing	Hookem & Wynn	New York, NY	-5 UTC	Ani@gm				
10	Marco Verthere	Travel Planning	Rome Beyond	Rome, Italy	+2 UTC	Mar@gm				
11	Seymour Goode	Security Compliance	Goode Auditing	Ft. Collins, CO	-7 UTC	Sey@gm				
12	Sue Moore	Legal	Dewey, Cheatem & Howe	Aurora, CO	-7 UTC	Sue@gm				
13	Alotta Stuph	Supplier	Dubai Materials	Dubai, UAE	+4 UTC	Alo@gm				

WHAT ARE REQUIREMENTS?

- Requirements are capabilities and features that a product must meet to satisfy the needs of the Stakeholders.
- Collection tools and techniques include: surveys, 1:1 interviews, job shadowing, observation and facilitated group sessions (when consensus between stakeholders is required).
- Analysis tools: Weighting; Cost vs. Benefit
- Requirements are typically collected and managed by a Business Analyst, Project Manager or other members of the Project Team

EXAMPLES: REQUIREMENTS

Each requirement should:

1. be traceable to its requestor
2. describe what they need
3. describe why they need it

- As a Bank Customer, I need their website to be available 99.99% of the time to do online banking.
- As a Support Engineer, I need to see the Customers configuration diagrams online in order to assist the Customer.
- As the Project Sponsor, the project cost must not to exceed the approved budget of $1,000,000.

COMMUNICATIONS PLAN

- Purpose: Ensures Stakeholders are informed about the project status, changes, etc.
- Defines the type and format of the ongoing project details provided to each type of stakeholder (Executives, Customers, Support Team, etc.).
- Customized for each group of Stakeholders depending on their needs and desired communications frequency.
- Tools and Techniques: RACI chart, Email updates, meetings, conference calls, webcasts, websites, dashboards, social media.

WHAT DOES A PROJECT MANAGER DO?

- Assist the Sponsor in developing the Business Case showing the project impact in terms of costs, savings, revenues and benefits
- Assemble project plans; identify resource needs
- Facilitate project team meetings, track project milestones and track action items, communicate the results of the meetings and escalate any issues appropriately
- Manage budgets and schedules and integrate approved changes into the project plan
- Build strong working relationships with key stakeholders
- Coordinate effective communications with all stakeholders throughout the process
- Maintain an excellent understanding of the project and the priorities of the Stakeholders

TEAMS

- Core Project Team (with representation from all Stakeholder groups)
- Sub-Teams (e.g., Developers, Manufacturing, Security, etc.)
- Extended Core Team (Core + others as/when needed)
- Executive Team (Sponsor and others)
- Governance Team (usually a combination of Executives, PM and SMEs)

MEETINGS

- Team meetings may be weekly, bi-weekly or sometimes daily
- Larger projects have separate sub-team meetings
- Project status meetings are for project tracking. What did you accomplish? What will you work on next? Any blockers?
- Status meetings are not for problem solving (use sub-team meetings)
- Project Manager (PM) is responsible for:
  - ✓ Facilitating the core team meetings (set schedule and agenda, track progress, communicate results)
  - ✓ Being a tie-breaker on deadlocked issues
  - ✓ Holding Team members accountable for their Action Items

ACTION ITEMS

- Action Items (AIs): It is best to have team members “volunteer” to own them (i.e., not have them assigned by the PM).
- SMART goal format for A.I.s
  - Specific
  - Measurable
  - Achievable
  - Relevant
  - Timebound

SIX PROJECT DIMENSIONS

Every project should give consideration to these six knowledge areas.

Each is an important component in the Project Plan.

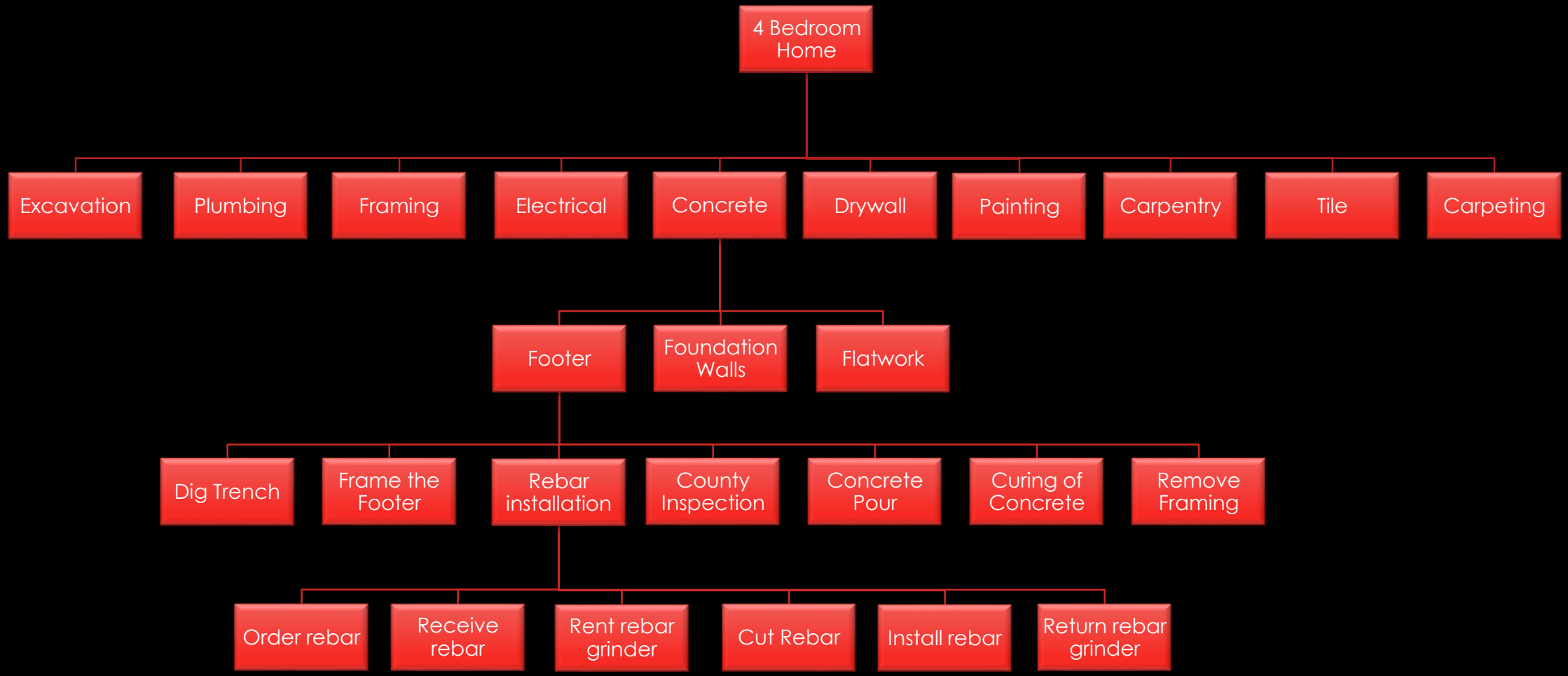
Scope	Schedule	Cost
Resources	Quality	Risk

NOTE: Changing any one dimension during a project affects the other five!

SCOPE MANAGEMENT

- Purpose: Define and manage the specific project goals, deliverables, features and functions to meet Stakeholder requirements.
- Collect requirements from Stakeholders and generate a refined Requirements List
- Define Scope. Using the Project Charter and Requirements List, develop a detailed description of the project deliverables. Use expert judgment, product analysis, alternatives identification and facilitated workshops to build the requirements into a specific deliverable (the goal of the project).
- Create the Work Breakdown Structure (WBS): Leverage your team's Subject Matter Experts (SMEs) to help break down (decompose) the deliverables into smaller and smaller chunks. Get as granular as possible to determine more precise estimates of time, resources and cost.

EXAMPLE: SCOPE DECOMPOSITION



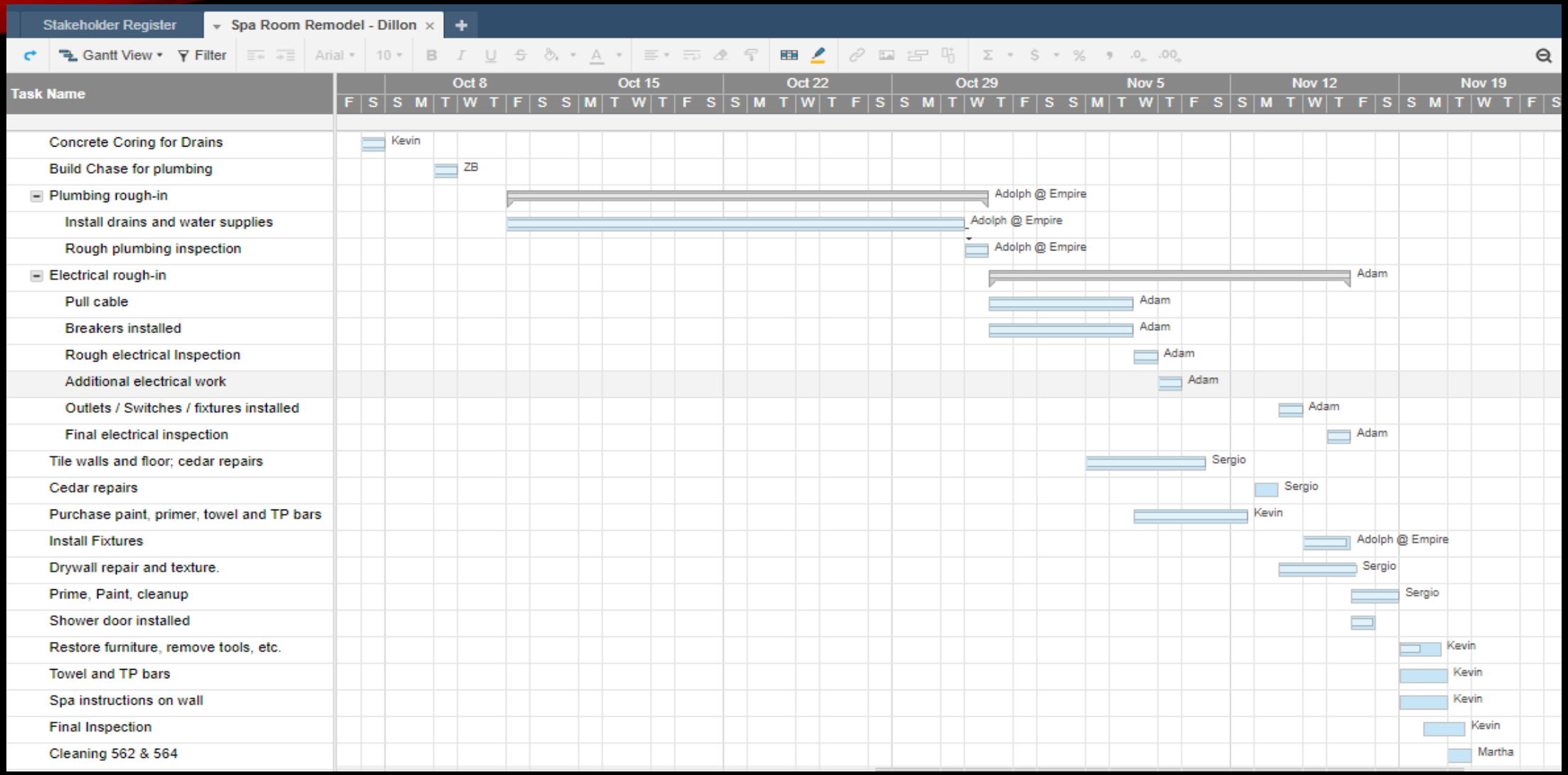
RESOURCE MANAGEMENT

- Purpose: Define the type and quantity of skills, materials, equipment, infrastructure and facilities needed to produce your deliverables.
- Acquire your Project Team: Required skills; Project roles and responsibilities; Reporting relationships (direct, matrixed, etc.).
- Acquire your Physical Resources: Already owned; Purchase; Lease.
- Are the resources dedicated to your project full-time or are they shared and need to be reserved/scheduled?
- Skill levels may vary. Electricians: Master ($90/hr.) and Journeymen ($45/hr.)
- Lack of resources is a common problem for many projects. A project manager must plan and coordinate resources to avoid these problems.

SCHEDULE MANAGEMENT

- Purpose: Define tasks that need to be performed to produce your deliverables, including their sequence, duration and required resources.
- Define activities: Using the Work Breakdown Structure (output from Scope Management), leverage the task owners (Subject Matter Experts) to define the activities required to complete their deliverable(s)
- Sequence the Activities
- Identify Dependencies: Perform in parallel when possible; serially when necessary; leads & lags
- Estimate Durations of each task
- Build the Schedule

EXAMPLE: SCHEDULE (GANTT CHART)



QUALITY MANAGEMENT

- Purpose: Describe how your organization's quality policies will be applied and how the team will meet the quality requirements.
- Ensures that all deliverables defined in the project Scope meet the needs of your stakeholders and are "fit for use."
- Quality metrics: Describes attributes and how the quality control process will measure it, usually in terms of a measurement and a tolerance (the allowable variations to the metric). May include control limits, defect frequency, failure rate, on-time performance.
- Quality checklists used to verify the acceptance criteria have been met.

EXAMPLES: QUALITY METRICS

- Wall framing should be even within 0.25 inches per 10 ft. span.
- Web page must load over a typical broadband connection within 1.5 seconds 95% of the time.
- User authentication must complete within 2 seconds 99% of the time after the user clicks “Login”.
- Widget defect rate must be no greater than 3.4 per million manufactured units.

COST MANAGEMENT

- Purpose: Estimate, fund and control finances so that your project can be completed within the approved budget.
- Use Scope, Quality, Schedule, Resource and Risk Plans as input.
- Costs can be variable or fixed, and direct or indirect
- Estimate Costs: Provide preliminary projection of the monetary resources needed to complete the various project tasks. Use techniques such as analogous, parametric, and three-point estimating (pessimistic, optimistic and best guess).
- Determine Budget: Aggregate task budgets into an overall budget.

RISK MANAGEMENT

- Purpose: Proactively identify, analyze and develop response plans to risk that may affect your project.
- Risk: Event or condition that may occur and impact the project.
- Risks are also Opportunities. Accept the risk to save money vs. buying insurance to transfer the risk; Double Jeopardy (How much should I bid in this category?)
- Identify the risks – Brainstorming with the Project Team and SMEs through workshops, interviews and questionnaires.
- Analyze the risks – Determine the risk's Probability (L/M/H) and Impact (L/M/H). Focus more on (H,H) ones, less on (L,L) ones.
- Track risks in a Risk Register: description, owner, trigger, response plan

CHANGE CONTROL

- Change is inevitable in most projects
- Change Control ensures that each change proposed during a project is adequately defined, reviewed and approved before implementation.
- Conduct an Impact Analysis of all Change Requests
- Project Manager may be empowered by the Sponsor to approve minor change requests
- Changes cost a lot compared to initial Requirements

EXAMPLE: CHANGE REQUEST
(How changing 1 dimension affects the other 5)

The Project Plan has been defined to build a 4 bedroom house.

Change Request in Scope: Add a spa to the Master Bath.

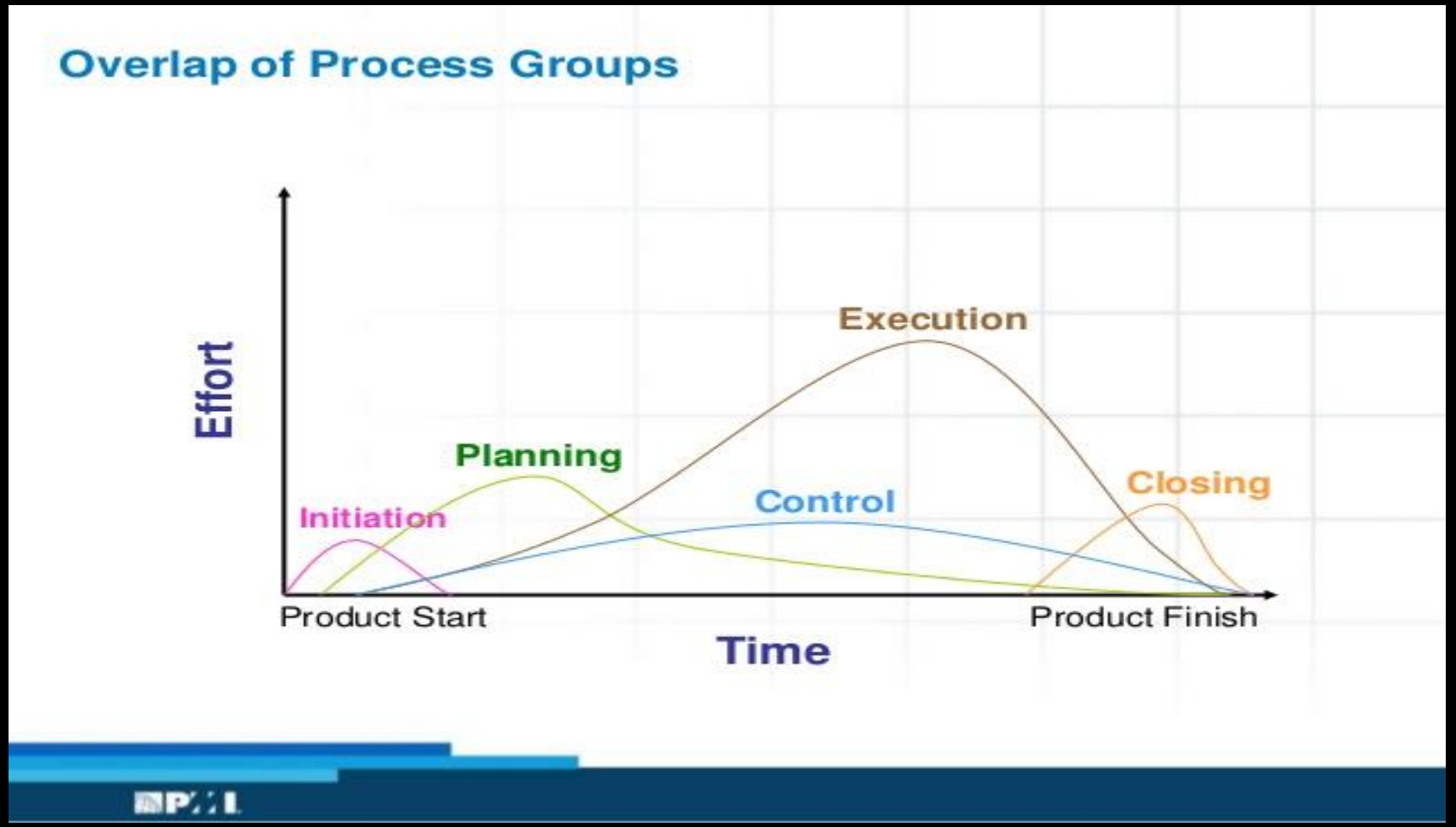
This may have the following effects:

1. Schedule: Add 1 month to accommodate the spa acquisition, installation, extra plumbing, tile, electrical and inspections
2. Resources: spa, floor bracing, a crane, electrician, plumber, …
3. Quality: Make the Master Bedroom smaller to accommodate the spa; downgrade cabinets and trim to cover the extra cost
4. Cost: Extra resources, architect, engineer, rent, county permit for spa
5. Risks: Resources (skills, material) not readily available; Building permit may expire; Spa arrives damaged and needs to be reshipped

PROJECT CLOSURE

- Verify all bills are paid, contracts are being managed, leased equipment returned, extra material stored, sold or returned, job site cleaned up, etc.
- Compose a “Lessons Learned” document for your Project
  - ✓ Solicit project team for their perspective.
  - ✓ What went well?
  - ✓ What went badly?
  - ✓ How can we do better on the next project?
- Archive everything. Artifacts, emails, etc. Use it for future reference.

PROCESSES


Overlap of Process Groups
Effort
Execution
Planning
Initiation
Control
Closing
Product Start
Product Finish
Time

TOOLS FOR MANAGING PROJECTS

- Email
- Documents
- Spreadsheets
- Gantt Chart
- Registries
- Control charts
- Software: Smartsheet, MS-project, Visio, …

AEROVINE PROJECT MANAGEMENT SERVICES

- Perhaps your organization has a Project Management Office (PMO) and would benefit from an outside perspective to review its current approach and offer recommendations for improvements.
- Perhaps you have some "one" who is managing your customer projects but they are over committed or lacking the proper skills to complete them on time and within budget.
- Perhaps you are starting a new project for your organizations and not sure how to proceed effectively.

We have helped many organizations.
We can help you too!

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Q & A