Project Management Training

Tagros Chemicals

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Introduction

- Name
- Role
- Challenges
- Expectations

Challenges in Projects within Tagros

- **Manual Reporting** (20% of PM time goes in reporting to management and management is not satisfied with reports)
- **Critical path** is not documented & managed
- **Resources assignment** for project activities is not documented & communicated
- **Lessons learned** & Estimation are not consolidated and used.
- Real time **project progress** is not known
- **Earned value** of the work at any point of time is not known
- **KPI** to compare various project's performance is not established
- Resource **planning/loading/levelling** is not proper
- **Risk Management Framework** is not in place
- **Historical data is not used** in Estimation of resources/durations/costs
- **Work-flow** of designing and planning processes is required
- **Quality management metrics** are not in place
- **Quality Policy** is not driving daily decision making of any project

This is based on inputs from senior people involved in initial discussions

Project Management is a Waste of Time

If you think that

10. Our customers **love us unconditionally**, so they don't care if our products are late and don't work.
09. Organizing to manage projects **isn't compatible** with our culture. The last thing we need around this place is change.
08. All our projects are easy, and they **don't have** cost, schedule, and technical **risks anyway**.
07. We thing that it's **more profitable** to have 50% overruns than to spend 10% on project management to fix them.
06. We might have to **understand our customers' requirements and document** a lot of stuff, and that is such a bother.
05. Project management requires **integrity and courage**, I think they need to pay me extra for that.
04. Our bosses won't provide the support needed for project management; they want us to get better **results through magic**.
03. We'd have to apply **project management blindly to all projects** regardless of size and complexity. This is stupid thing.
02. I know there is a well-developed project management body of knowledge, but **I can't find it under this mess on my desk**.
01. We **aren't smart enough** to implement project management without oppressing creativity and offending our technical geniuses.

Themes

Day 1 : General Understanding

Day 2 : Project Planning

Day 3 : Project Execution

Day 4 : Governance

Day 5 : Closing

General Understanding

1. Some Important Definitions Related to Project Management
2. Process Groups & Level of Activities
3. Organization Types & Project Success
4. Project Success Criteria
5. Typical Costing and Staffing Across PLC
6. Cost of Change & Degree of Risk
7. Project Initiation & Exercises of the day

Some Important Definitions

1. Project, Program, Portfolio and Interdependencies
2. Project Left Cycle: Phases, Milestones, Deliverables
3. Project Boundary
4. Project Constraints
5. Project Management Office
6. Project Management Methodologies

Projects & Operations

	Project	Operations
Duration	Has start and end date	Has only start date
Output	Unique Product/Service/Result or some Uniqueness	Standard
Team	Heterogeneous	Homogeneous
Requirements	Progressive Elaboration	Known in Advance
Resources	Hired Temporarily and Released. All based on the Need	Permanent
Risk	Relatively High	Relatively Less
Dependencies	Critical Path	Managed Differently
Change	Catalyst of Change	Maintain Status Quo
Charter	Permanent	Semi-Permanent

Project Management

The application of **knowledge**, **skills**, **tools** and **techniques** to perform project activities in order to **meet** the **project objectives**

Program Management

- Managing multiple related projects which cannot give you the benefits if you manage these project individually
- Benefit driven not the delivery driven
- Has longer life than projects and interacts with operations on periodic basis to know whether existing project within the program will help in getting program benefits or not.

Strategic Drivers

Example

- In next 5 year be number one global supplier of ABC product
- In next 5 year be largest manufacturer of XYZ in the World.

Business Drivers

- That reflect the **performance and progress** of your business.
- Are **measurable**.
- Can be **compared** to a standard, such as a budget or last year's figures, or an industry average.
- Can be **acted** upon

PMCA

Business Drivers

Which drives the business. Example:

- Sales
- Cost
- Cash Flow
- Margins

Portfolio Management

- Collection of projects or programs and other work
- To facilitate effective strategic business objective (mission and vision) of an organization
- Makes financial decisions about projects & programs
- Project/Program prioritization & selection
- Provides business justification of the project/program to the BOD

Project Left Cycle

- Phases
- Milestones
- Deliverables
- Activities

Project Phases

- Projects are divided into phases where extra control is required to effectively manage the completion of the major deliverables
- Collectively, the project phases put together is known as **Project life cycle**
- Each phase is marked by one or more tangible verification work product
- The conclusion of a project phase is generally marked by a review
- The phase end points are referred to as phase exits, milestones, phase gates, decision gates, stage gates or kill points
- Starting a phase before approval of deliverables of a previous phase is called Fast Tracking

Deliverables

A deliverable of a project is a tangible, measurable and auditable output which is expected to be gained or produced upon successful accomplishment of the whole project or its certain part.

Example:

- Well-trained employees
- Improved skills
- Increased performance
- Copies of the system are installed on all employee computers within the department
- All staff members know how to operate and use the new system.

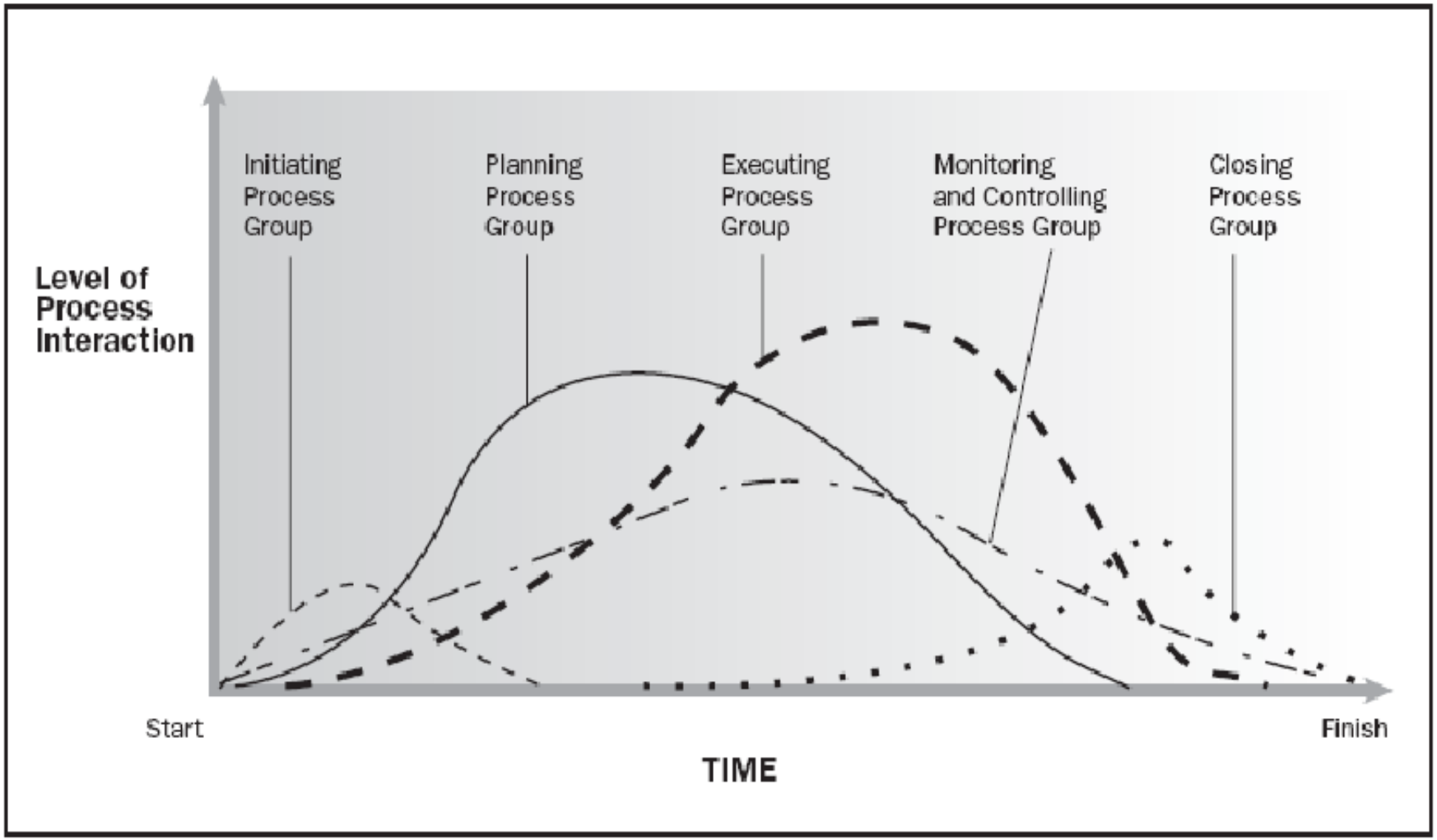
Project Management Methodologies

- Waterfall
- Agile
- Scrum
- RAD
- PRINC2
- Kanban
- Six Sigma
- DMAIC

Project Management Office

- Managing **shared resources** across all project administered by PMO
- Identifying and developing project management **methodology, best practices** and standards
- **Coaching, mentoring, training** and oversight
- Monitoring **compliance** with project management standards, policies, procedures and templates via project audits
- Developing and managing project **policies, procedures, templates** and other shared documentation (organizational process assets), and
- **Coordinating** communication across projects

Process Groups & Level of Activities



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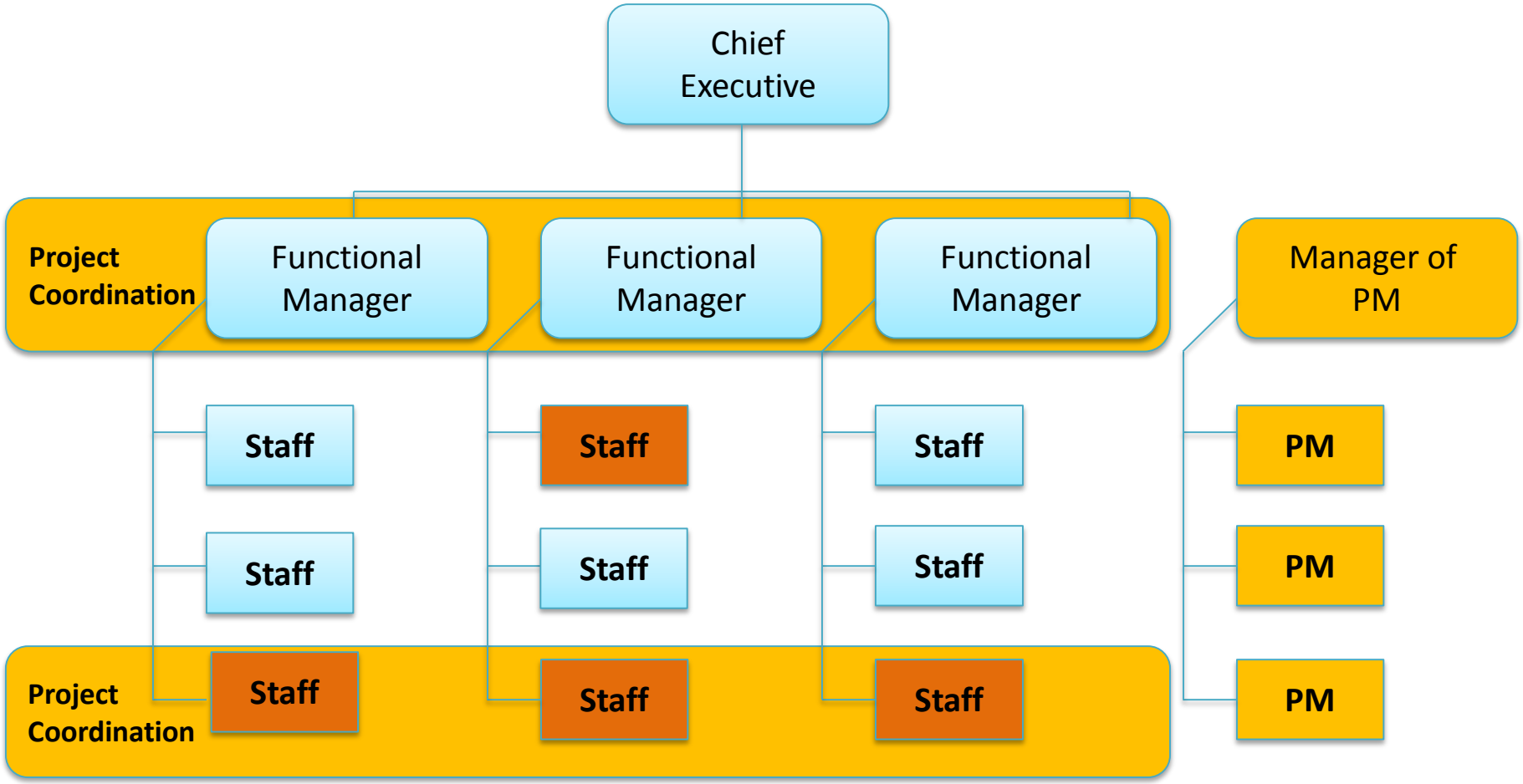
Organization Types & Project Success



1. Project Manager Authority	4. Resource Availability
2. Project Budget Control	5. PM Role
3. PM Admin Staff	

Project Boundary

- Limits the scope
- Helps in change control
- Aligned with project objective
- Part of Project Scope Statement
- **Example :**
  - This project will affect Bangalore operations only. All other locations are out of scope.
  - We will deliver our solution to the Finance and HR departments. All other departments are out of scope.

Project Constraints

Project Success Criteria

- Related to Project
  - Timely Delivery
  - Features & Functions Delivered
  - Delivery within agreed budget
  - Quality
  - Risk Management
  - Issues & Escalations
- Related to Project's Product
  - Business Value Addition
  - Efficiency/Productivity Improvement Due to Project's Product

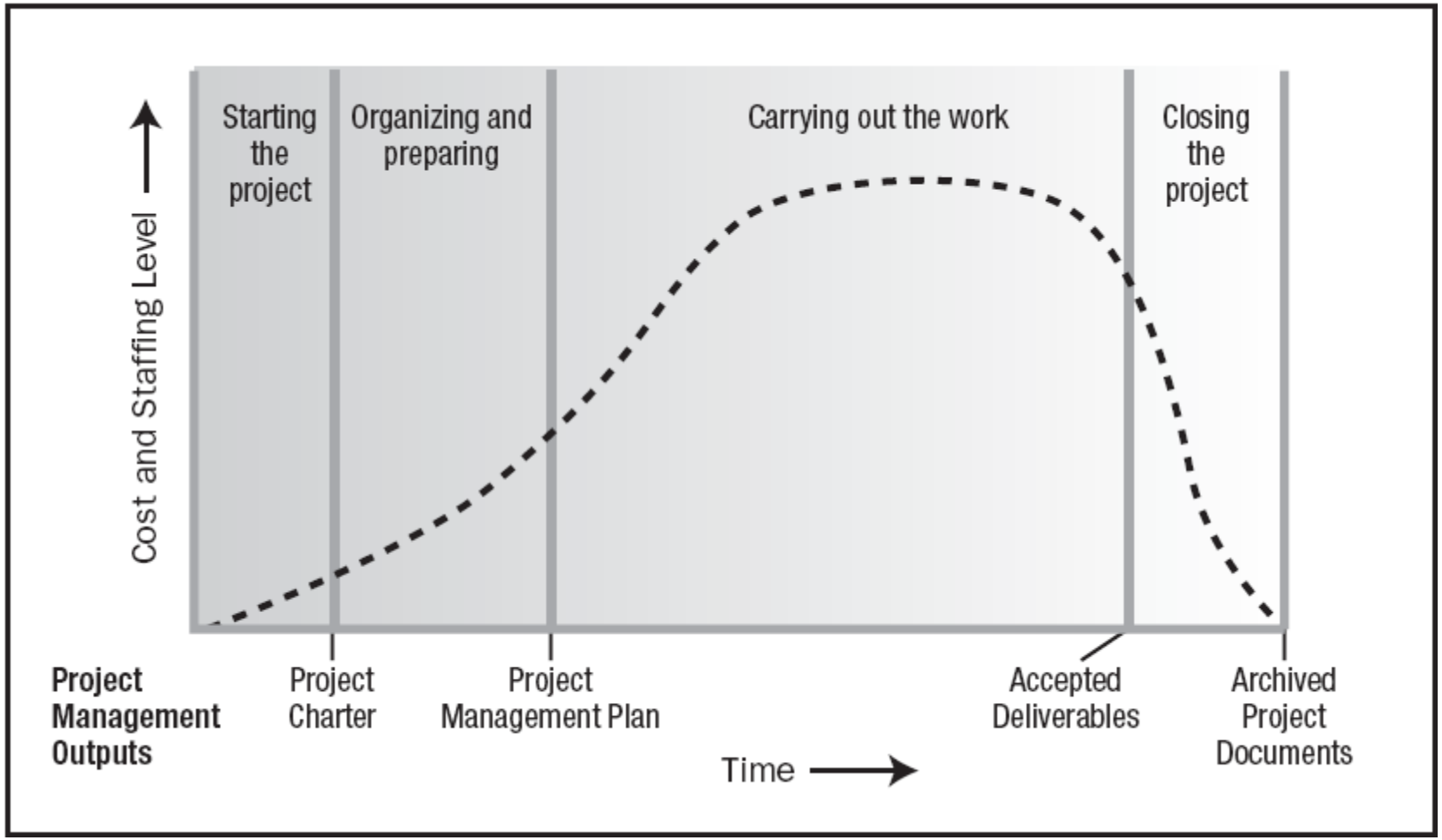
Results of a Project

- Project produces **output**. It can be a product or service or result
- If you use the product of a project then outcome is visible. **Outcome** cannot be measured. It is more subjective.
- **Benefits** can be measured. If it more objective

Example

- You implemented ERP through a project (Output)
- People use/do not use/ complain / suggest something else than ERP (outcome)
- Organization get benefit of ERP implementation cost saving, sales increasing, stress coming down, improved quality with lessor effort, real time data for decision making (benefit)

Typical Costing & Staffing across PLC



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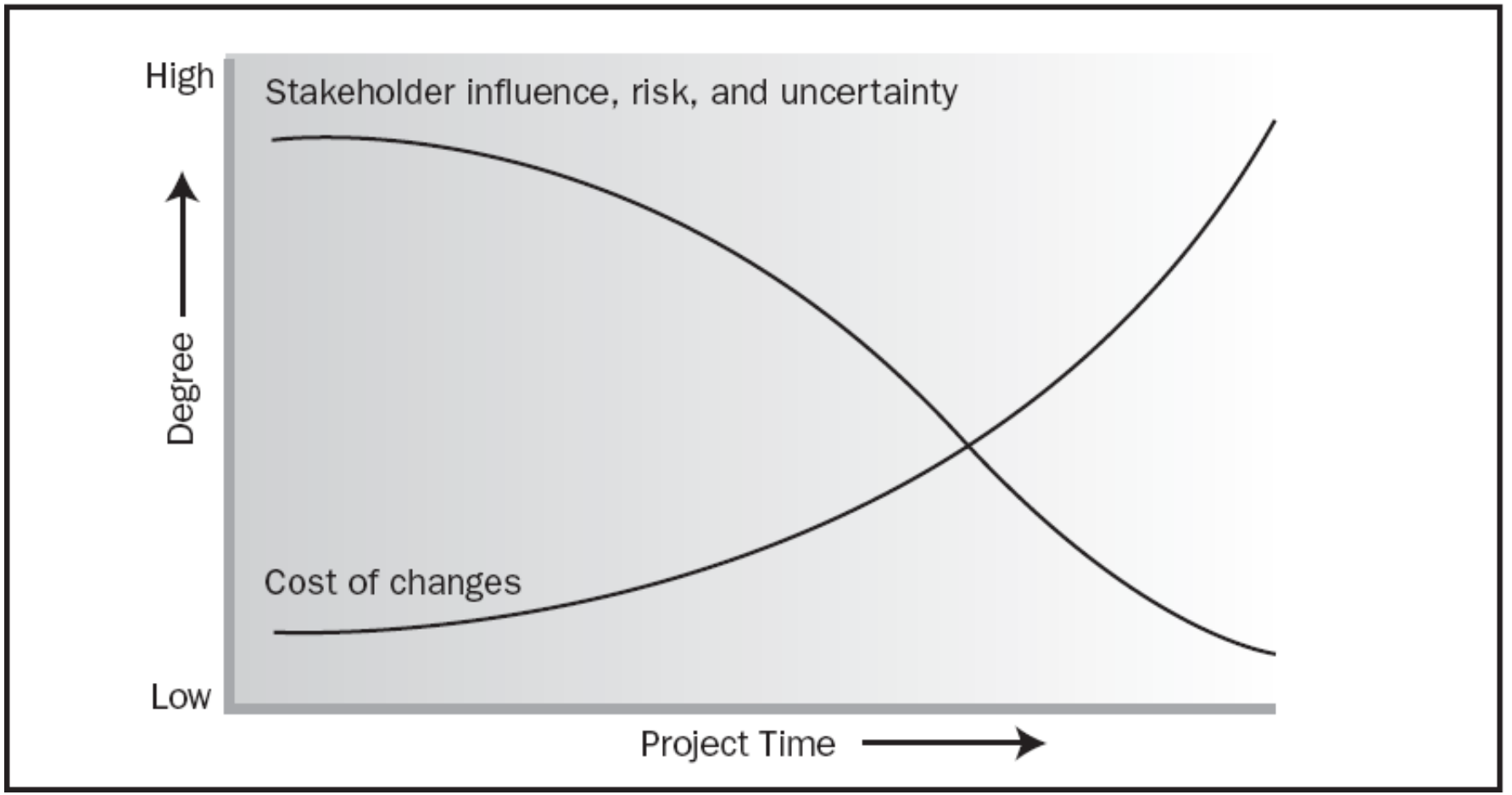
Cost of Change & Degree of Risk



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Project Initiation & Exercises

1. Organization Process Assets
2. Enterprise Environmental Factors
3. Stakeholders Management
4. Project Manager: Skills, R&R, Authority
5. Project Charter

Organization Process Assets

Knowledge base of the organization which helps you doing business in a better way.

- Processes, Templates, Guidelines, Standards, Checklists, Forms, Procedures developed at organization level. *Compiled by Quality or PMO Department*
- Lessons learned from previous projects. *Documented and shared by earlier project managers.*
- Previous projects historical data available in archival. *It is provided to IT Security department by Project manager at the end of every project.*

Enterprise Environmental Factors

Constraints imposed by the enterprise(s) or environment where you are doing the business. Do not underestimate them.

- Political environment of vendor, customer, project management company or state
- Climatic conditions
- Regulatory decisions
- Skills available in the market
- Attitude of the people towards project, team, organization, management, customer, work etc.
- Organizational systems and policies
- Organizational culture, management, hierarchies
- Terrorism, communal sensitivity

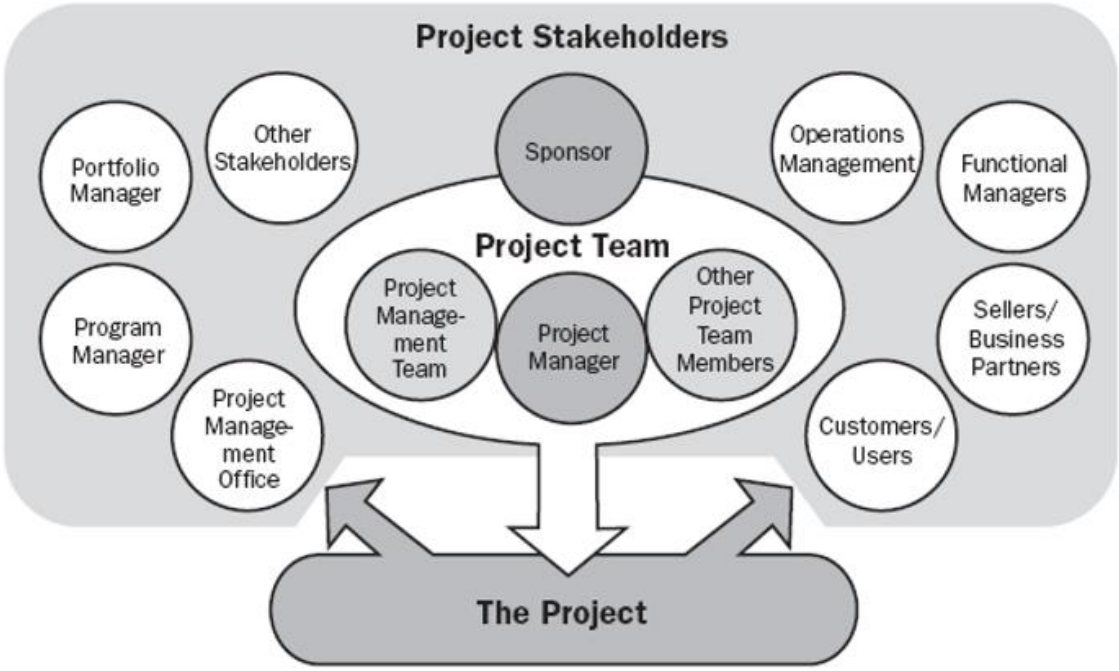
Stakeholder Management

Stakeholders

- A stakeholder is an individual, group, or organization
- Who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project.
- Stakeholders may be actively involved in the project
- Stakeholders may have interests that may be positively or negatively affected by the performance or completion of the project.
- Different stakeholders may have competing expectations that might create conflicts within the project.

Stakeholders

- Product User
- Customer
- Sponsor
- PMO
- Regulators
- Government
- Local Public
- Vendors
- Local Politicians
- Management
- Quality Department
- Project Team



Stakeholder Register

- General
  - ID
  - Name
  - Role/Title
  - Organization
  - Department
  - When (Start, Phase1, Phase2, Phase3, Throughout)
  - Internal/External
  - Manager
- Contact
  - Phone
  - Email-id
  - City
- Management
  - Expectation
  - Influence
  - Interest
  - Current Position (Champion/Supporter/Neutral/Resist)
  - Needed Position
  - Personal Attributes
  - Engagement Plan

Stakeholder Analysis

Stakeholder Management Plan

- Stakeholder Name
- Engagement Approach
- Responsibility
- Accountability
- Frequency
- When
- Efforts Associated

Project Manager: Skills, R&R, Authority

On Any Project : PM Responsibilities

- Accountable
  - Communication- reviews, steering committee meetings, stakeholder identification and expectation management
  - Stakeholder Expectation Management
  - Cost optimization
  - Resource allocation, resource backup and utilization
  - Team motivation, team management, training & development, appreciation, career planning, interview
- Delegate, Assurance, Ensure through Expert's Help
  - Estimates of size, efforts & schedule
  - Risk identification, analysis, prioritization, monitoring & control
  - Scope management
  - Defect free product delivery on time within budget
  - Deliver as per contract & proposal
  - Dependency Management
  - Procure as per contract & proposal
  - Configuration management, data backup
  - Quality planning
  - Presales & proposals
  - Technical guidance to team – if team members are not available do their work (after project manager has completed his work & he has spare time)

PM Responsibilities

- **Initiating a Project**
  - Project aligned with org objectives & customer needs. Understand Why?
  - High-level risks, assumptions and constraints are understood
  - Stakeholders identified and Profiling is done as per their need, power & interest
  - Project Charter approved
- **Planning a Project**
  - Project scope, schedule, budget is agreed & approved.
  - Project team identified with roles and responsibilities agreed
  - Communication activities agreed
  - Quality management process established
  - Risk response plan approved
  - Integrated change control processes defined & agreed
  - Procurement plan is place, approved and dependencies identified

Project Manager Responsibilities

- **Executing a Project**
  - Project scope achieved
  - Project status/progress is tracked and communicated
  - Project stakeholders expectations managed
  - Human resource, Machine & Material resources managed
  - Quality managed against plan
- **Monitoring & Controlling a Project**
  - Variances identified & RCA is performed
  - Project change management is performed systematically
  - Quality is monitored and controlled
  - Risks are monitored and controlled
  - Contract administered
- **Closing a Project**
  - Project outcomes accepted
  - Project resources released & stakeholders are communicated
  - Stakeholder perceptions measured and analyzed
  - Project formally closed
  - Documents archived, LL documented

Project Manager Skills

- Negotiate
- Influence
- Manage (Resources, Scope, Time, Cost etc.)
- Communicate
- Present
- Organize
- Lead
- Conflict Management
- Cognitive Ability
- Effectiveness
- Professionalism

Authority

- Manage through servant leadership
- Manage through referent power
- Implement decision made by stakeholders
- Make decisions & take calculated risk

Develop Project Charter

- Project Charter should be signed by Project Sponsor and handed over to PM
- Use Business Case, SOW, Agreements, Lessons Learned, EEF to make this.
- It is first and must have document of any project

Project Charter

- Objective
- High Level Scope
  - Project Boundary
  - High Level Requirements
  - High Level Deliverables
- High Level Milestones
- Assumption
- Inherent and known risks
- High Level Timeline
- High Level Budget
- Measurable Project Success Criteria
- Initial Team
- Project Start Date
- High Level Approval Requirements
- Name and Sign of Project Manager
- Name and Sign of Project Sponsor

Day 2

Themes

Day 1 : General Understanding

Day 2 : Project Planning

Day 3 : Project Executions

Day 4 : Project Governance

Day 5 : Closing

Planning

1. Project Integration Planning
2. Project Scope Planning
3. Project Time Planning
4. Project Cost Planning
5. Project Quality Planning
6. Project Communication Planning
7. Project Human Resource Planning
8. Project Risk Management
9. Project Procurement Management

Planning for Project Integration (Overall)

- Determine Project Management Methodology
- Determine Project Lifecycle
- Determine Processes Required to Manage Project
- Determine different type of Baselines & SLAs
- **Determine Configuration Management System**
- **Determine Overall Monitor & Control Plan & Processes**
- **Determine Change Management Processes**

Planning for Configuration Management

- How will you preserve baselines
- Identify what will be Configurable items (CI) and what will be records
- Establish how will you name and version documents and product of this project
- Tools to be used for Configuration Management
- Security Permission for CI & Records
- Assign configuration manager for the project

Planning for Monitoring & Controlling

- Identify what do you want to monitor & control regularly or periodically. Like work progress, time, cost, risk, issues etc.
- When, how & who is responsible for data collection, compilation and analysis
- What kind of reports are expected in part of Monitoring & Controlling
- Who will take action on the analysis and how that action will trigger

Planning for Change Management

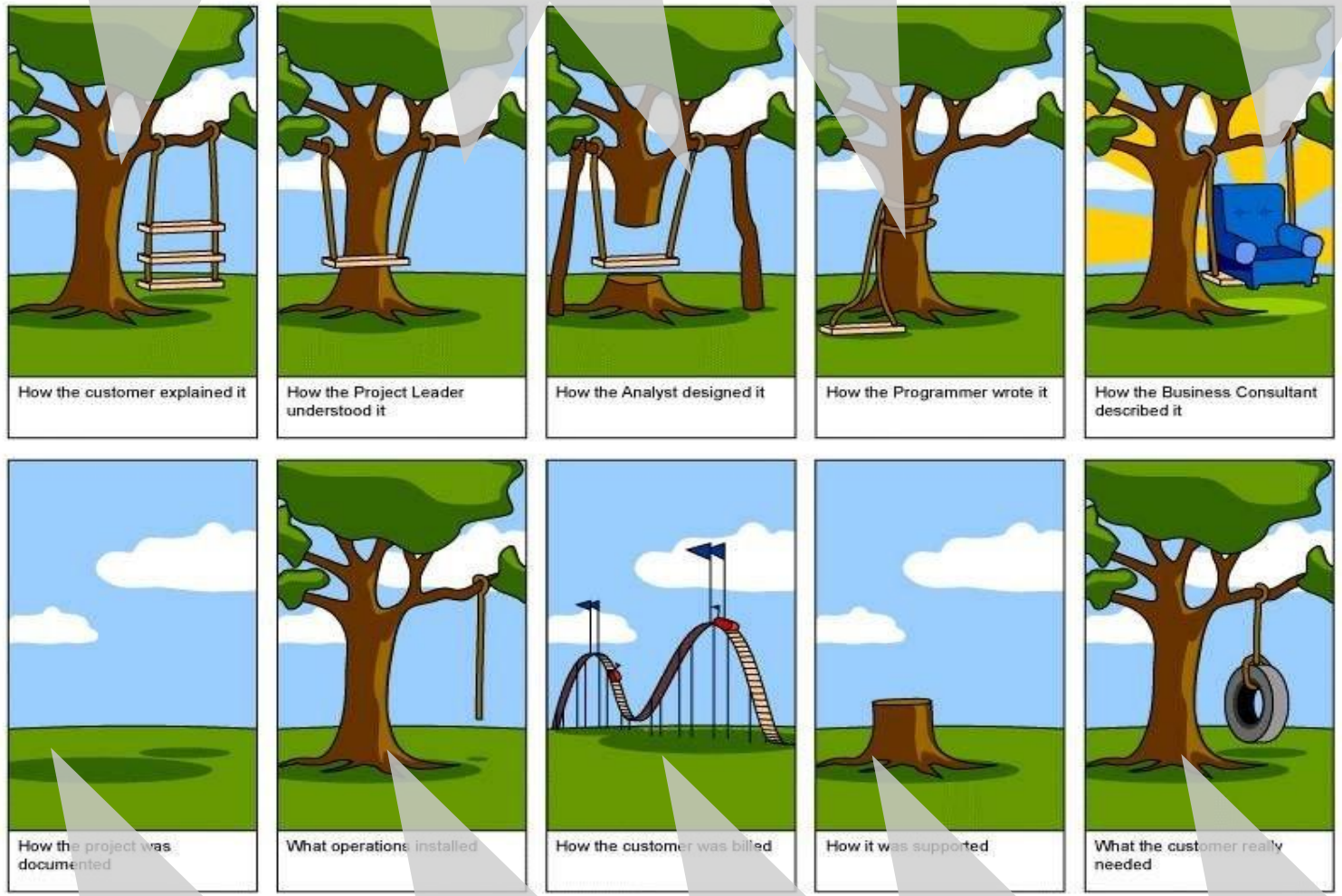
- Identify type of changes (scope, cost, time, quality, process, people, training, risk appetite, project objective etc.) which you want to track
- Setup threshold limits for each type of change
- Setup change control boards (CCB) and their authority and scope of discussion
- Setup impact analysis process and identify people who perform this
- Define meeting frequency of CCB
- Define templates and guidelines for Change Management

Tools/Techniques for Project Integration Planning

- Expert Judgment
- Meetings

Scope Management

Level of Detailing in Scope


How the customer explained it
How the Project Leader understood it
How the Analyst designed it
How the Programmer wrote it
How the Business Consultant described it
How the project was documented
What operations installed
How the customer was billed
How it was supported
What the customer really needed

Scope

- **Project Scope** "The work that needs to be accomplished to deliver a product, service, or result with the specified features and functions."

- **Product Scope** "The features and functions that characterize a product, service, or result."

Requirements

- **Product requirements (features)**. Product requirements describe the characteristics of the deliverables.
- **Process requirements (functions).** Process requirements describe how people interact with a product and how a product interacts with other products.

Project Scope Management Planning

1. Establish a process & plan to manage scope (SMP)
2. Establish a process & plan to manage requirement: collection, elicitation, approval, prioritization (RMP)
3. Establish a process & plan to trace requirements throughout the project lifecycle (RMP)
4. Establish a process & plan for requirement acceptance testing (SMP)
5. Determine scope related metrics to manage the scope (SMP)
6. Identify the systems, tools which you will use to capture and analyze requirements (SMP)

Tools/Tech for Scope Mgmt. Planning

- Expert Judgment
- Meetings

Scope Management

1. Collect Requirements as per SMP & RMP
2. Analyse Requirements & Develop solution with various possible alternatives
3. Prepare a detail list of deliverables & related risk
4. Develop a WBS, WBS Dictionary
5. Establish control account
6. Document exclusions
7. Baseline Scope

Tools/Techniques for Collecting Requirements

- Interviews
- Focus Groups
- Facilitated Workshops
- Group Creativity Technique
- Group Decision Making Techniques
- Questionnaires and Surveys
- Observations
- Prototypes
- Benchmarking
- Context diagrams
- Document Analysis

Tools/Techniques for Define/Baseline Scope

- Expert Judgment
- Product Analysis
- System Analysis
- Decomposition
- Alternative Generation

Project Time Management

Project Time Management Planning

- Establish a process and plan to manage time of project activities (ScMP)
- Tools for Schedule Planning and Reporting
- Schedule Thresholds
- Metrics
- Responsibility, frequency, time of schedule data analysis
- Determine which attributes of the activities need to captured to manage them

Project Scheduling

- Define activities as per ScMP (DA)
- Sequence activities as Activity Attributes (SA)
- Estimate Activity Resources (EAR)
- Estimate Activity Duration (EAD)
- Develop Schedule (DSc)
- Baseline Schedule

Define Activities

- Use Scope baseline for this
- Prepare a list of activities, milestones, activity attributes
- Activity Attribute Example :
  - Name, Location, Department, Dependency, Type, Constraints, Tracking Method, WBS Code, Cost, Duration, Resource Requirement, % Complete

Sequence Activities

- Use lead and lag time properly
- Understand dependency type apply them properly
  - FS, SS, FF, SF
- Use deadlines and time constraints of activities properly
- Understand dependency is Hard Logic or Soft Logic

Estimate Activity Resources

- Estimate skills required to perform activities
- Estimate number and type of equipments, support services, material required to perform activities
- Whether these resources are available within the organization or need to purchased/hired from outside
- If they are available within organization can they be available for your project when and where you need them
- Develop a Resource Breakdown Structure and Resource Requirements

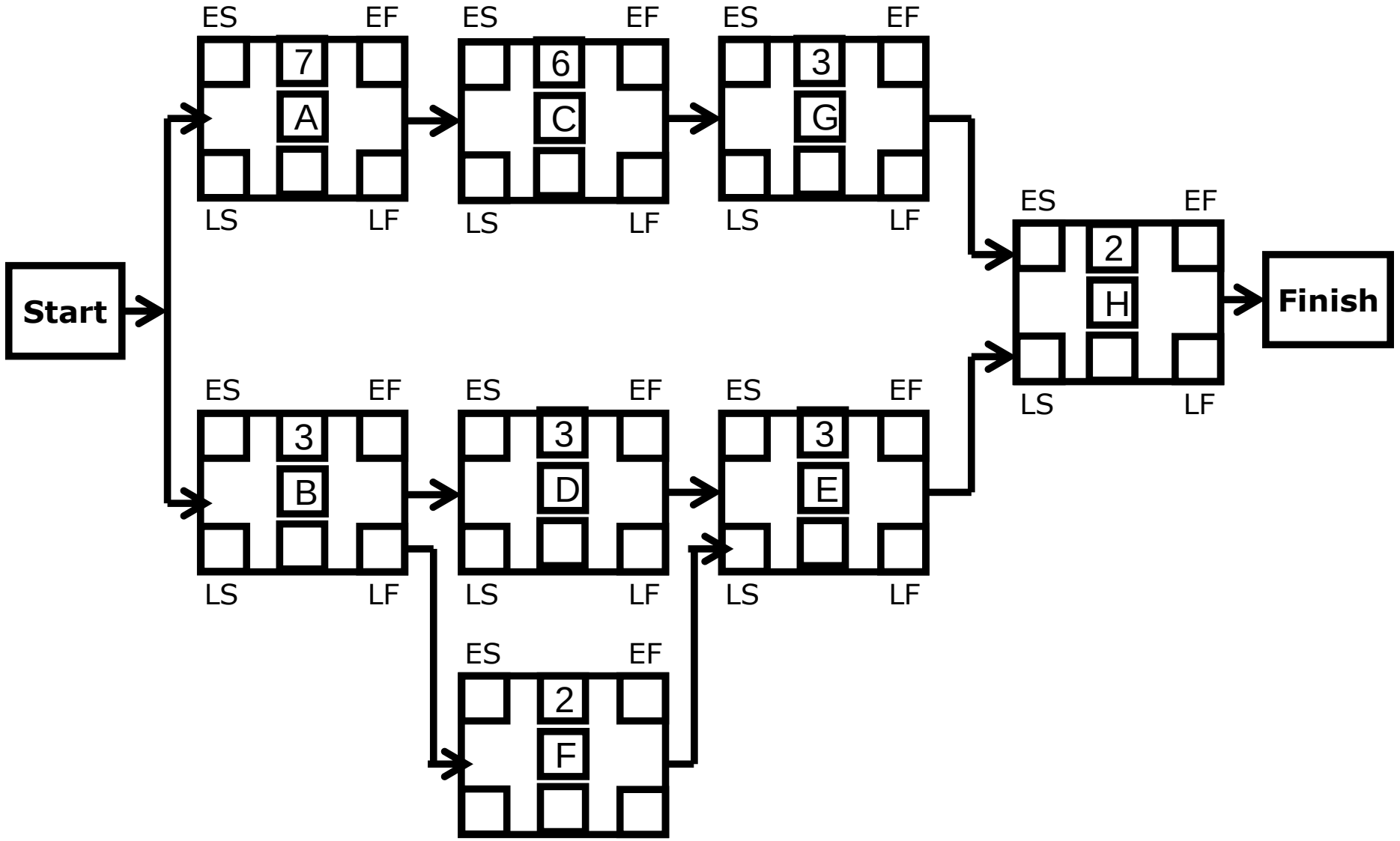
Estimate Activity Duration

- Consider risk around activities
- Establish your project calendar (work timings, days in a week, off days of week, holidays, working hours everyday)
- Consider availability of resources. Sometimes they are available but not 100%.
- Consider productivity of resources. It is never 100%.
- Know you are estimating ideal duration, not the actual duration, not the effort
- Understand that every activity's duration cannot be crashed by adding resources.
- Methods of duration estimation: PERT, Analogous, Published Data, Parametric
- PERT method help you in knowing confidence of your schedule
- Finally 24 hours work duration is not 3 days, even if your office works 8 hours a day.

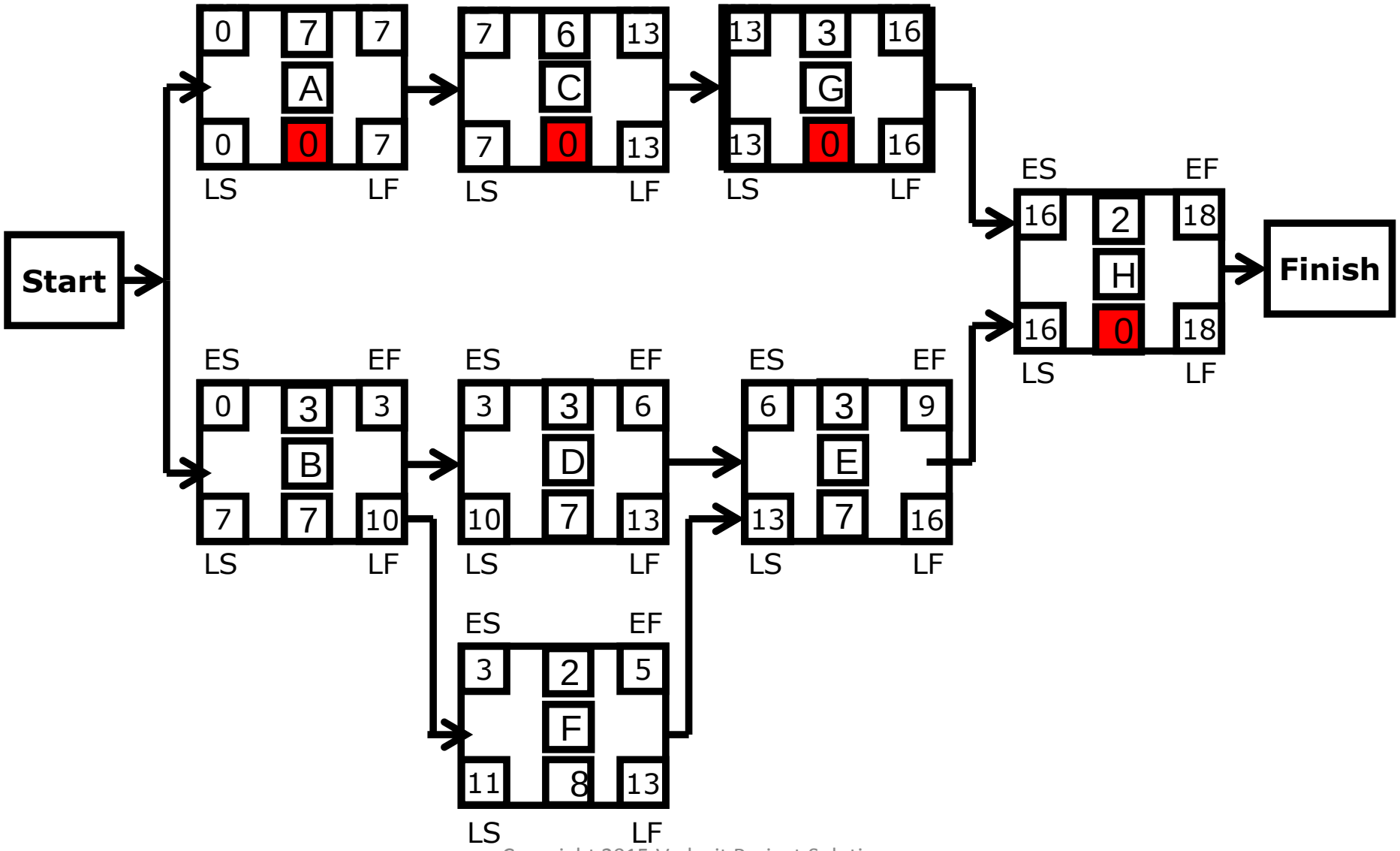
Develop Schedule

- Analyse Dependencies
- Analyse Lead/Lag
- Analyse Constraints
- Identify Critical Path
- Identify Critical Activities
- Identify Float of Activities
- Understand where applying more resources will help you reducing project duration
- Determine how you want to manage buffers
- Discuss, negotiate, agree before you baseline schedule

Critical Path



Critical Path – Longest Path, Zero Float



Facts/Tips for Critical Path

- Total Float is the amount of time the task can delayed without delaying the project finish date.
- Free float is the amount of time a task can slip without delaying the early start of any task that immediately follows it
- It is possible that a zero float activity may not be on critical path
- Longest path & shortest time possible to complete the project
- A project can multiple critical paths
- Difference between late and early is float
- Positive float (the activity can wait to start even after previous activity finishes)
- Negative float (the activity must start before previous finishes)
- Zero float (the activity must immediately start after the finish of previous one)
- Crashing activities to short the overall duration of project
- Fast-tracking activities to short the overall duration of project
- Be cautious that non-critical activity is not being delayed than the allowed free float
- Take care of sub-critical path or non-critical path
- Manage critical path resources very closely
- Do not overload critical path activity resources
- Avoid multitasking for resources working on critical path activities

Project Cost Management

Project Cost Management- A Thought

- If you don't plan, it doesn't work. If you do plan, it doesn't work either. Why plan!
- The same work under the same conditions will be estimated differently by ten different estimators or by one estimator at ten different times. So why to estimate!
- Any project can be estimated accurately (once it's completed).
- Nothing is impossible for the person who doesn't have to do it.
- Right answers to wrong questions are just as wrong as wrong answers to right questions.

Project Cost Management Planning

- Establish a process and plan to manage cost of project activities (CMP)
- Consider the cost of procurements, risk management activities
- Setup cost reporting systems and train project team
- Understand different types of cost and their accrual methods

Cost Management Plan

It includes

- Cost management tools to be used
- Level of accuracy (acceptable range +/- 5%)
- Level of precision (US$ 100.01)
- Units of measure for each resource
- Organizational procedure links
- Process of updating the progress in schedule model
- Control thresholds (an allowed variation before some action need to be taken)
- Rules of performance measurement (baselines, %complete, fixed formula etc.)
- Project cost recording process
- Currency exchange rate fluctuation adjustment process
- Define scheduling reporting format

Tools/Tech. for Cost Management Planning

- Expert Judgment
- Analytical Tools
- Meetings

Cost Planning

- Estimate Cost of Each Activities (EC)
- Document assumptions of estimation
- Consider risks while estimating cost
- Develop project funding requirements (DB)
- Consider cash flow and payout while developing funding requirements
- Baseline Project Cost

Tools for Cost Planning

- Analogous Estimating
- Parametric Estimating
- Bottom-up estimating
- Three-point estimates
- Reserve Analysis
- Cost of Quality
- Project Management Software
- Vendor Bid Analysis
- Group Decision Making Techniques
- Funding Requirement Reconciliation
- Cost Aggregation
- Reserve Analysis
- Historical Relationships

Project Cost Estimation Ranges

Cost estimation may include only indirect Cost along with direct Costs

Class Name	%	Range
Definitive	- 5 -> +5%	10%
Capital Cost	-15 -> +10%	25%
Appropriation	-25 -> +15%	40%
Budget Estimates	-10 -> +25%	35%
Feasibility	-35 -> +25%	60%
Order of Magnitude	-50 -> +50%	100%

Project Quality Management

Quality Definitions from Quality Gurus

1. “Quality is Predictability”- Deming
2. “Conformance to requirements” - Crosby
3. “Fitness for use” - Juran
4. “Customer’s opinion”- Feigenbaum
5. Conformance to “Valid Requirements“.
6. “Customers' perception of the value of the suppliers” work output.
7. A perceived degree of excellence with a minimum, usually set forth by the customer.
8. Best value for money.

Project Quality Planning

- Understand Quality Expectations of the Stakeholders
- Develop Quality Checklist
- Understand Cost of Quality
- Identify Quality Metrics to measure, improve project/product quality
- Develop Quality Assurance Plan & Process
- Develop Quality Management Plan & Process (QMP)

Tools/Tech for Quality Management

- Cost-benefit analysis
- Cost of Quality
- Seven basic quality tools
- Benchmarking
- Design of experiments
- Statistical sampling
- Additional quality planning tools
- Meetings

Seven basic quality tools

- Control Chart
- Fishbone Diagram
- Pareto Chart
- Scattered Diagram
- Histogram
- Flowchart
- Check sheet

Cost of Quality

Cost of Conformance

Prevention Costs (Build a quality product)

- Training
- Document processes
- Equipment
- Time to do it right

Appraisal Costs (Assess the quality)

- Testing
- Destructive testing loss
- Inspections

Cost of Non-conformance

Internal Failure Costs (Failures found by the project)

- Rework
- Scrap

External Failure Costs (Failures found by the customer)

- Liabilities
- Warranty work
- Lost business

Project Human Resource Planning

- Establish Project Calendar
- Create Role & Responsibilities based on skills required to perform project activities
- Develop RACI Chart
- Establish/Refine Job Description
- Establish Project Organization
- Establish Performance Appraisal Systems
- Establish Conflict Management System
- Establish Staffing Management Plan
- Establish Team Building Plan
- Identify type of trainings required to ensure people understand processes, they understand temperaments and work style of fellow team members, expectations from them. Establish Training Need and Training Plan
- Establish Hiring Systems
- Approve human resource management plan (HMP)

Project Communication Management

- Understand communication need of different stakeholders
- Group stakeholders based on their communication need
- Understand number of communication channels involved
- Identify possible communication technologies and their benefits and cost of setup and operation
- Define Roles & Responsibilities for managing communication
- Make decision about communication technologies to be used
- Establish how will you ensure effectiveness of communication
- Establish communication metrics
- Put all above information in Communication Management Plan (CoMP)

Tools/Tech for Communication Planning

- Communication Requirement Analysis
- Communication Technology
- Communication Models
- Communication Methods
- Meetings

Project Risk Management

Risk Management Planning

- Identify who is responsible for risk management
- Establish tools/template to capture risk
- R&R for Risk Assessment, Audit
- Risk appetite of stakeholders
- Develop impact table
- Develop probability and impact table
- Methods of risk categorization
- Put all above information in Risk Management plan (RMP)

Tool/Tech for Risk Management Planning

- Expert Judgment
- Analytical techniques
- Meetings

Risk Management

- Identify Risks
- Assess Probability of Risks Identified
- Assess Impact of Risks Identified
- Assess Urgency of Risks Identified
- Establish which risk must have response plan
- Assign Risk Owner
- Establish Risk Response Plan for High Exposure Risk
- Assign Risk Actionee
- Categorize Risks
- Establish contingency funds

Funding for Risk Management

- Contingency Reserves
- Management Reserves

Tools/Tech for Risk Management

- Expert Judgment
- Documentation Reviews
- Information Gathering Techniques
- Checklist Analysis
- Assumptions Analysis
- Diagramming Techniques
- SWOT Analysis
- Risk Probability and Impact Assessment
- Probability and Impact Matrix
- Risk Data Quality Assessment
- Risk Categorization
- Risk Urgency Assessment
- Data Gathering and Representation Techniques
- Quantitative Risk Analysis and Modelling Techniques
- Strategies for Negative Risk or Threats
- Strategies for Positive Risks or Opportunities
- Contingent Response Strategies

Project Procurement Management Planning

- Identify what resources/work needed for project cannot be produced by the project team (what you need)
- Establish procurement statement of work
- Identify when you need and who are potential supplier
- Establish cost of each procurement need
- Identify different contract type
- Establish contract change control systems
- Establish procurement evaluation systems

Discussions !

Day 3

Themes

Day 1 : General Understanding

Day 2 : Project Planning

Day 3 : Project Execution

Day 4 : Project Governance

Day 5 : Closing

Project Execution

1. Direct and Manage Project Work (DMPW)
2. Perform Quality Assurance (PQA)
3. Acquire Project Team (APT)
4. Develop Project Team (DPT)
5. Manage Project Team (MPT)
6. Manage Communications (MC)
7. Conduct Procurement (CoP)
8. Manage Stakeholder Engagement (MSE)

Direct and Manage Project Work

- Execute Project as per the Baselined Project Management Plan
- Produce only those deliverables which are valued by customer
- For any deviation use only "Approved" Change Requests
- If work is not possible as per the baselined plan then team should make Project Manager aware about it. This is change request.
- As a practice project manager should not make decision about deviation from baselined plan immediately.
- Change request should be evaluated based on the urgency and then decision is either made by project change control board or Project Manager depending on impact and urgency.
- Project work progress data, any issue, impediments should be captured on daily basis. Automate this step as much possible so that your get correct data
- Coordinate project related dependencies between departments, agencies, consultants, experts, management and other stakeholders on daily basis.

Tools/Technique for Direct & Manage Project Work

- Meetings
- Project Management Information Systems
- Expert Judgment

Perform Quality Assurance

- A mechanism to determine that everybody including the project manager is following processes
- Deviation from the plan is acceptable but deviation from the process is compliance issue and taken very seriously by management, regulators, customer etc.
- Project manager should perform quality assurance for his team
- External to project (Auditor) who has knowledge about audit process and project processes should perform regular audit. Project Manager should plan for this in his plan. A surprise audit asked by management, regulator or customer is also possible.
- Auditors should identify area of improvement, provide recommendation, appreciate best practices, take best practices at organization level. (Change Request)
- Auditors should make stakeholders aware about non-compliance
- An auditor must use project's project plan, project reports, quality report to perform the audit

Tools/Techniques for Perform Quality Assurance

- Process Analysis
- Process Audits
- Inspection
- Cost Benefit Analysis
- Cost of Quality (COQ)
- Seven Basic Quality Tools
- Benchmarking
- Design of Experiments
- Statistical Sampling
- Flow charting
- Additional Quality Planning Tools
- Approved Change Requests Review
- Meetings

Acquire Project Team

- Hire right people on right time and assign them the work as per their capability
- Negotiate role, responsibilities, work time, position, compensation, reporting relationship, joining time, location of work and agree before you confirm any person in the project team
- Interview every person you are taking on the project based on the level of expertise and skills expected for the project work

Tools/Techniques for Acquire Project Team

- Pre-assignment
- Negotiation
- Acquisition
- Virtual Teams
- Multi-criteria decision analysis

Develop Project Team

- In a project chemistry is more important than physics
- Project is delivered by team not by individuals
- Conduct trainings
- Conduct team building activities
- Define ground rules as a team
- Develop binding between virtual teams
- Evaluate continually that how team is maturing

Tools/Techniques for Develop Project Team

- Interpersonal Skills
- Training
- Team-building activities
- Ground Rules
- Co-location
- Recognition and Rewards
- Personnel Assessment Tools

Manage Project Team

- Do not monitor and control people. Be objective and manage your team using project objectives.
- Appraise and provide feedback on regular basis
- Identify improvement need of individuals and team (Change Request)
- Maintain issue log of team conflicts and keep resolving it based of priority
- Assign only those people for conflict management who have competency

Tools/Techniques for Manage Project Team

- Observation & Conversation
- Project Performance Appraisals
- Conflict Management
- Interpersonal Skills

Five Stages of Team development

- Forming
- Storming
- Norming
- Performing
- Adjourning

Type of Powers

- Formal
- Expert
- Reward
- Penalty
- Referent

Conflict Management

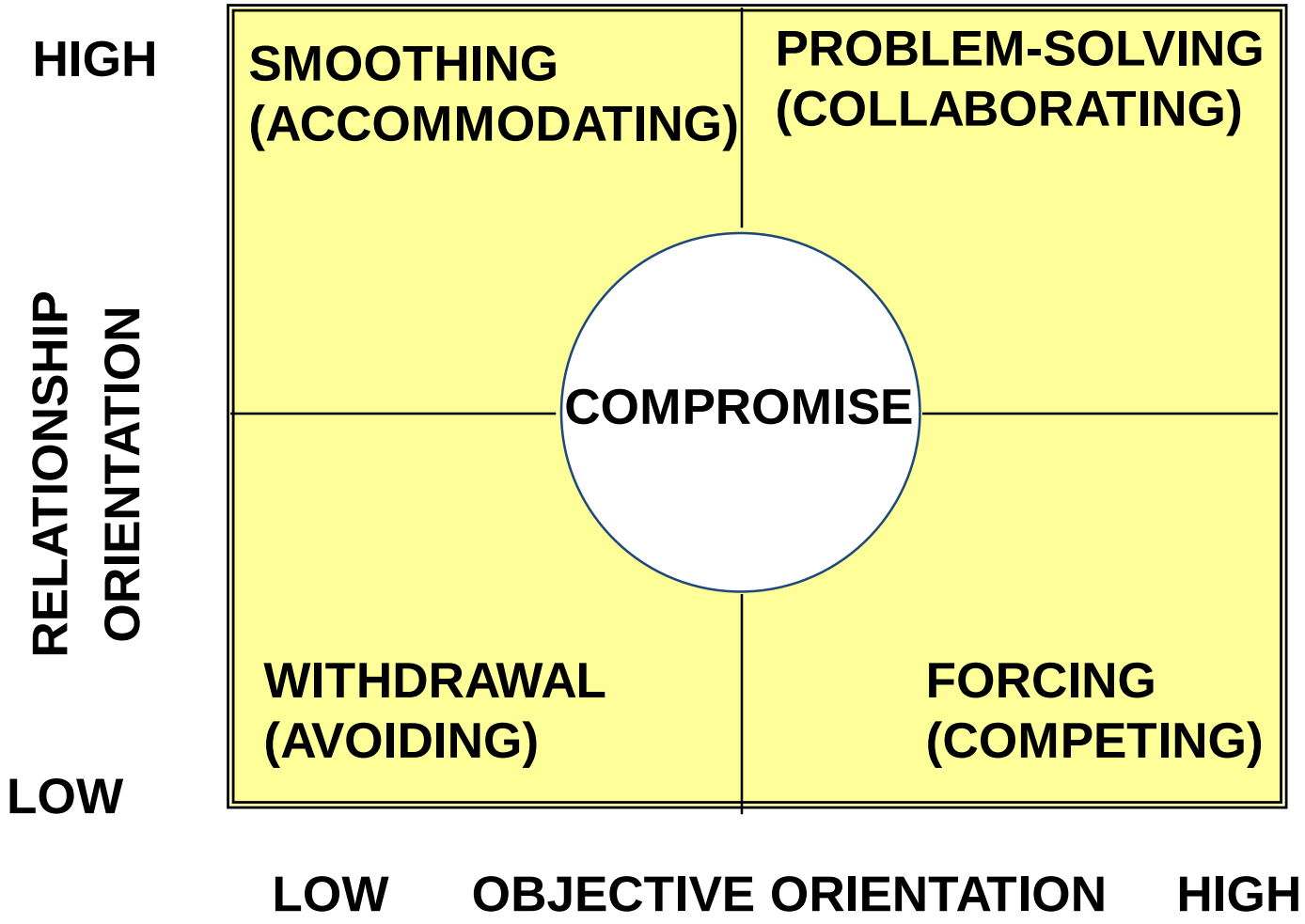
Sources of conflict

- Schedules
- Project Priorities
- Technical Issues
- Personality Conflict
- Cost
- Scarce resources
- Personal work styles
- Administrative Procedures

Characteristics of conflict

- Conflict is team issue
- Conflict is natural and forces a search for alternatives
- Openness resolves conflict
- Conflict resolution should focus on issues, not personalities
- Conflict resolution should focus on the present not on the past

Conflict Resolutions



Motivational Theories

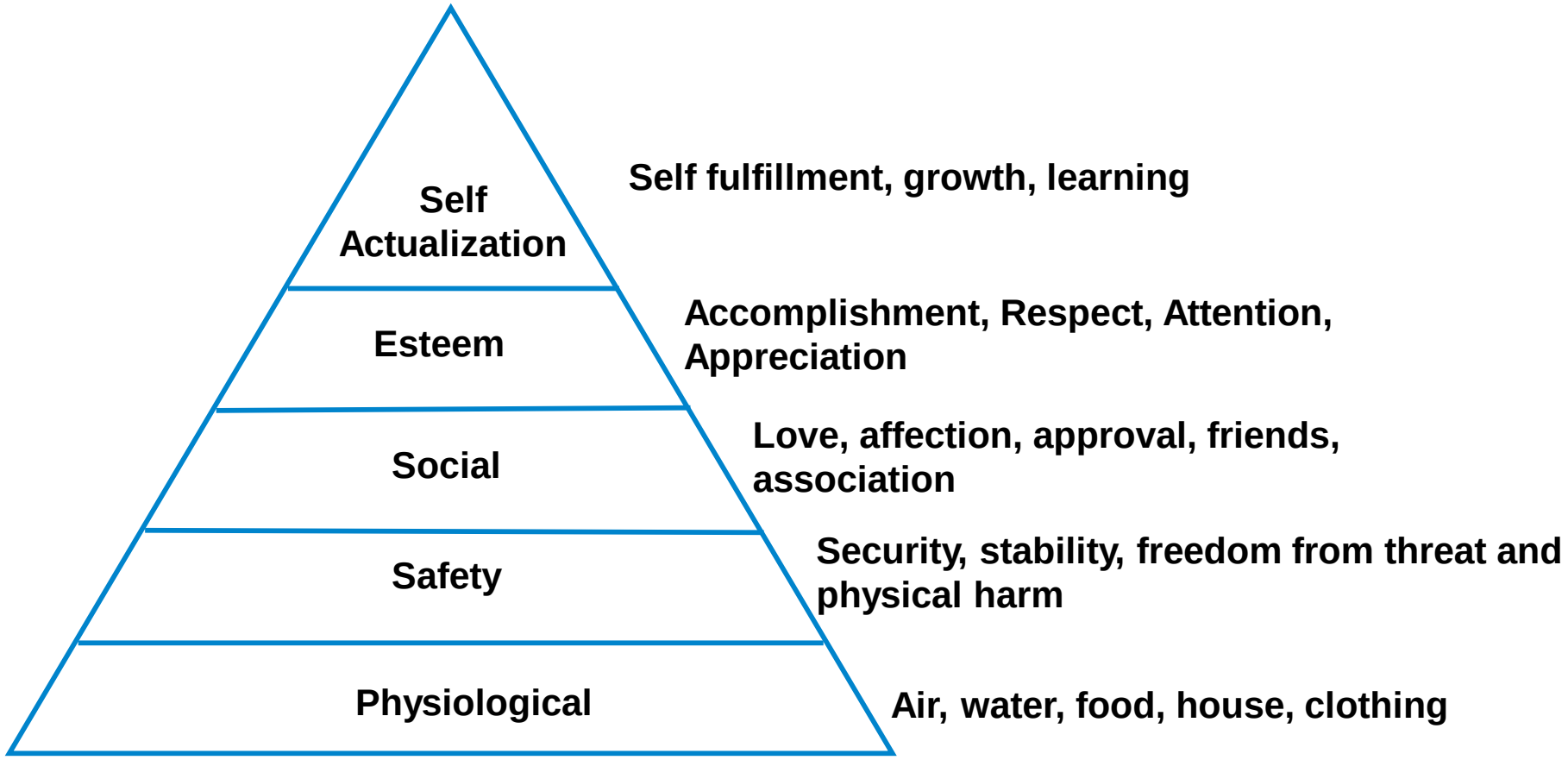
Motivational Theories

1. Frederick Herzberg - Hygiene & Motivation Factors
2. Abraham Maslow - Hierarchy of Needs
3. Victor Vroom - Expectancy Theorem of Motivation
4. Oldham and Hackman - Job characteristics model
5. McGregor - Theory X & Y

Frederick Herzberg - Hygiene & Motivation Factors

Hygiene Factors	Motivating Factors
• Supervision • Company policy and administrator • Positive working Condition • Interpersonal relations • Job Security • Status • Compensation • Personal life	• Achievements • Recognitions • Work Itself • Responsibility • Advancement • Possibility for growth
Present does not guarantee high productivity. Absence guarantee low productivity	Motivation will not work without Hygiene.

Abraham Maslow - Hierarchy of Needs



Victor Vroom - Expectancy Theorem of Motivation

The extent to which an individual is motivated…

Is the work important?
The level of expectation of their efforts will result in a desired outcome?

Will I be rewarded?
The expectation that good work will be rewarded

What is the value of the reward?
Attractiveness of the reward

Motivation will be high when all three factors are high

Oldham and Hackman - Job characteristics model

- Skill Variety – the number of job skills that the job holder has the opportunity to exercise
- Task Identity – the degree to which your work and its result are identifiable as belonging to you
- Task Significance – the degree to which your job has an influence on others
- Autonomy – the discretion you have about the way that you do the job
- Feedback – the information that you get back about the result of your work

McGregor - Theory X & Y

Theory X	Theory Y
• The average worker is inherently lazy and dislikes work so avoid whenever possible. Therefore **needs supervisions** • To induce adequate effort, the supervisor must **threaten punishment** • The average worker avoids increased responsibility and **seeks to be directed**	• The average worker wants to be active and finds the satisfaction in his work. So they work better **without continuous supervision** • Greatest results come from willing participation and this leads to self-directed towards goals **without coercion and control** • The average worker **seeks opportunity** for personal improvement and self respect
Theory X relies on strict rules, performance incentives, rewards, threats to job security	Theory Y relies on worker participation in decision making, cordial manager-worker relationships, worker designed job methodology, worker individualism

Key to Successful Team Management

- **Listens to subordinates** to diagnose or solve problems
- **Sets goals** and develops short- and long- range action plans
- **Gives directions** about who is to do which tasks to what standards
- Provides **feedback on task performance**
- **Rewards**
- **Develops subordinates**
- Understanding that team is an **Integral Unit of Organization**
- A team **mission, objective, goals, strategy** and role definition
- A leader and an organizational **support system**
- **Managers responsive** to needs of team members
- **Encourage** participation and effective communication
- Foster an atmosphere of **trust** among team members
- Provide **feedback effectively**
- A **collective culture** and style
- Motivate team members with **challenges & rewards**

Manage Communication

- Send out all communication as per the plan
- Identify any ad-hoc communication need and send out those communications
- Minimize ad-hoc communications
- Ensure the communications send out is available for future references
- Ensure the communication is available only those who are authorize to use it.

Tools/Techniques for Manage Communications

- Communication Techniques
- Communication Models
- Communication Methods
- Information Management Systems
- Performance Reporting

Conduct Procurement

- Evaluate proposals received from suppliers
- Ensure that they understand what you expect and when
- Perform SWOT analysis for identified supplier
- Understanding various contracting type and award contract

Tools/Techniques – Conduct Procurement

- Expert Judgment
- Bidder conferences
- Proposal evaluation techniques
- Independent estimates
- Advertising
- Analytical techniques
- Procurement Negotiation

Manage Stakeholders Engagements

- Engage relevant stakeholders are proper level as per the plan
- Understand the issue which they are raising (Change Request)
- Analyze these issue and address them appropriately or set the right expectations
- While addressing issue keep change log with you.

Tools/Techniques – Manage Stakeholders Engagements

- Communication Methods
- Interpersonal Skills
- Management Skills

Interpersonal Skills

- Leadership
- Team Building
- Motivation
- Communication
- Influencing
- Decision Making
- Political & Cultural Awareness
- Negotiation

Management Skills

- Presentation Skills
- Negotiating Skills
- Writing Skills
- Public Speaking Skills

Discussions !

Day 4

Themes

Day 1 : General Understanding

Day 2 : Project Planning

Day 3 : Project Execution

Day 4 : Project Governance

Day 5 : Closing

Project Governance

1. Monitor & Control Project Work (MCPW)
2. Perform Integrated Change Control (PICC)
3. Validate Scope (VC)
4. Control Scope (CS)
5. Control Schedule (CSc)
6. Control Cost (CC)
7. Control Quality (CQ)
8. Control Communications (CCom)
9. Control Risks (CR)
10. Control Procurements (CnP)
11. Control Stakeholders Engagements (CSE)

Monitor & Control Project Work

- Compare actual progress against the plan
- Identify whether the variance is within control limit
- Perform root cause analysis for any exceptional variance
- Prepare reports of progress, status, forecast
- Identify **change request** for course correction, defect fix, preventive action
- Who will collect data, track the progress, perform analysis and prepare those reports should be part of Planning.
- Ensure whether action taken in previous cycle has resolved the issues

Tools/Tech for Monitor & Control Project Work

- Expert judgment
- Analytical techniques (Grouping Methods, Regression Analysis, Causal Analysis)
- Project management information system
- Meetings

Perform Integrated Change Control

- Any deviation from the plan is change. While doing project many a times it is must to initiate a **change request** to meet project objective
- Change may happen in plan, document, process, team
- Change may impact cost, quality, scope, time, risk, benefits
- Implementing small change requests without approval may lead to scope creep
- One sided decision on CR should not be made by sponsor or PM. This should be carried out by CCB after the impact evaluation

Perform Integrated Change Control

- Evaluate any change request in terms of impact on scope, time, cost, quality, risk and benefit of project and impact on existing or previously delivered subsystems.
- Forward change and impact to CCB and follow up with CCB to make decision whether change request should be approved or not
- Project manager make decisions only about those change which are in his/her threshold limit.
- Document the decisions and related information of any change request irrespective of CR is accepted or rejected
- Maintain a change log. This is very important input for conflict management and stakeholder expectations management
- If you manage stakeholders expectations effectively and routinely many of change requests can be avoided

Tools/Tech for Perform Integrated Change Controls

- Expert Judgment
- Change Control Tools
- Meetings

Validate Scope

- Show the product of project to customer so that he can accept or recommend changes
- Big-bang delivery to customer should be avoided, unless there is some specific reason.
- Periodically carry out this process and take feedback so that project team know that they are going in right direction
- Before you show something to customer you must get it validated by internal quality team
- This process is for only customer valuable deliverable and not for internal documentation or plan.

Tools/Tech. for Validate Scope

- Inspection
- Group Decision Making Techniques

Control Scope

- To avoid scope creep you should know how many scope related CR has been approved in last period
- Total how many CR were raised
- How much time went into analyzing those CRs
- Report these metrics as a part of project status reporting
- Report work status
  - List of work items completed
  - List of work items dropped
  - List of work in progress
  - List of work items for next cycle

Tools/Tech for Control Scope

- Variance Analysis

Control Schedule

- Report project efficiency in terms of time. Schedule performance index.
- How much we are behind/ahead of the schedule. SV% or No of days.
- How much more time is required to complete the work. Or can we complete project earlier. (Schedule Forecast)
- Why are we behind/ahead the schedule
- Preventive and corrective actions (Change Request)
- New project schedule

Tools/Tech. for Control Schedule

- Performance Reviews
- Project Management Software
- Resource Optimization Techniques
- Modeling Techniques
- Leads and Lags
- Schedule Compression
- Scheduling Tool

Control Cost

- Report project efficiency in terms of cost. Cost performance index (CPI).
- How much we are over/under budget, CV%.
- How much more money is required to complete the work. Or can we complete the work in lessor money. (Cost Forecast)
- How much total money will go out in this project by the time it is complete. (Cost Forecast)
- What should be resource utilization from tomorrow onwards so that we can complete the project within cost and on time. (TCPI)
- Why are we behind the schedule. RCA.
- Preventive and corrective actions (Change Request)
- New Cost Baseline

Tools/Tech for Control Cost

- EVM
- Forecasting
- TCPI
- Performance Reviews
- Project Management Software
- Reserve Analysis

Earn Value Management

Earned Value Management – Basic Concepts

Planned Value (PV)- BCWS

Authorized budget assigned to the work to be accomplishes for an activity or work breakdown structure component.

Earned Value (EV)- BCWP

Value of work performed expressed in terms of the approved budget assigned to that work for an activity or work breakdown structure component.

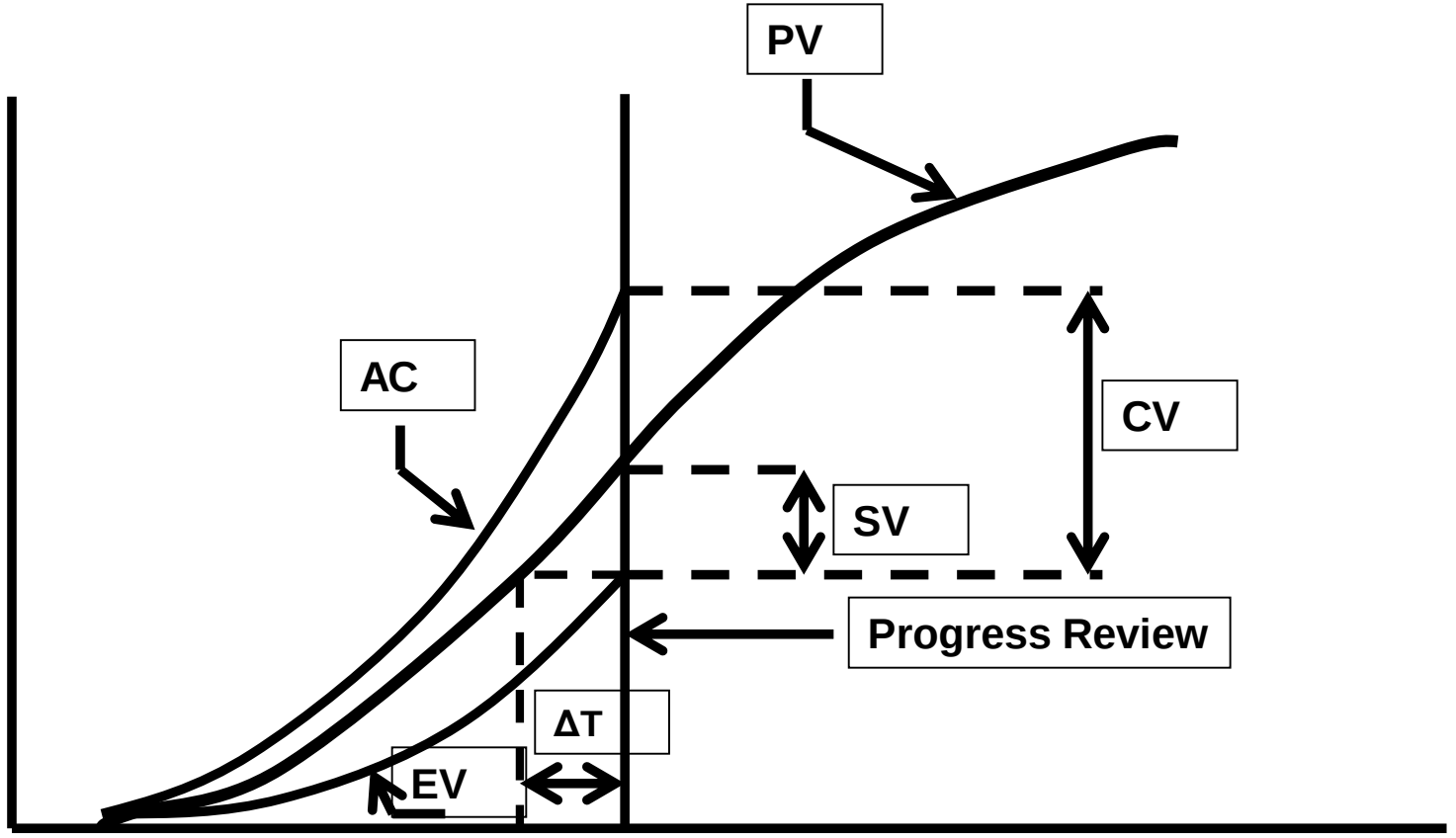
Actual Cost (AC)- ACWP

Total cost actually incurred and recorded in accomplishing work performed for an activity or work breakdown structure component.

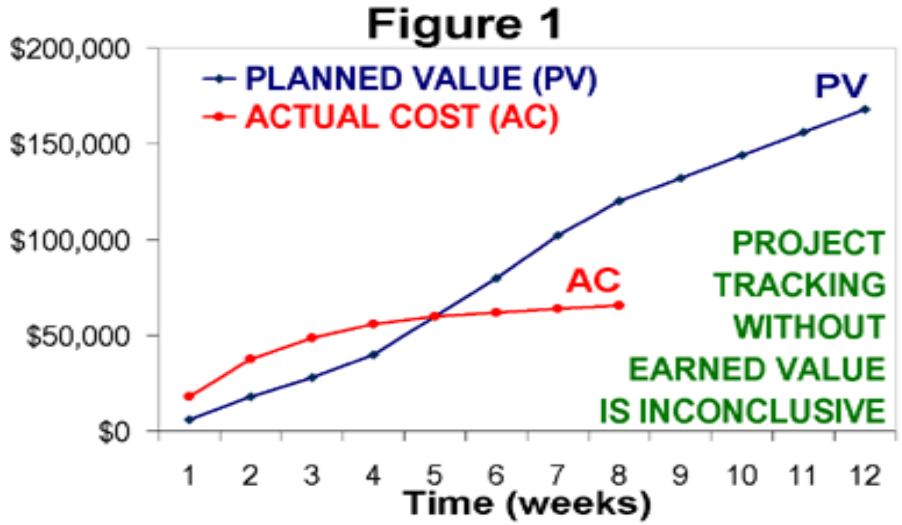
Earn Value Rules

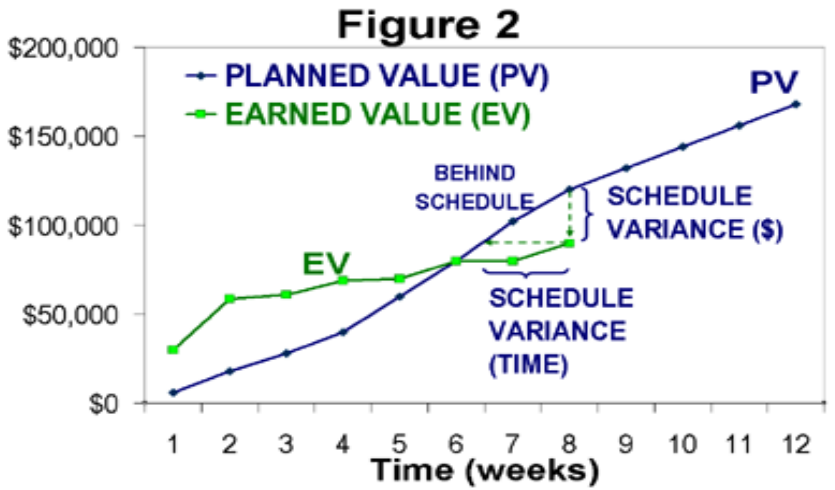
- 0% - 100%
- 50% - 50%
- 20% - 80%
- 25% - 75%

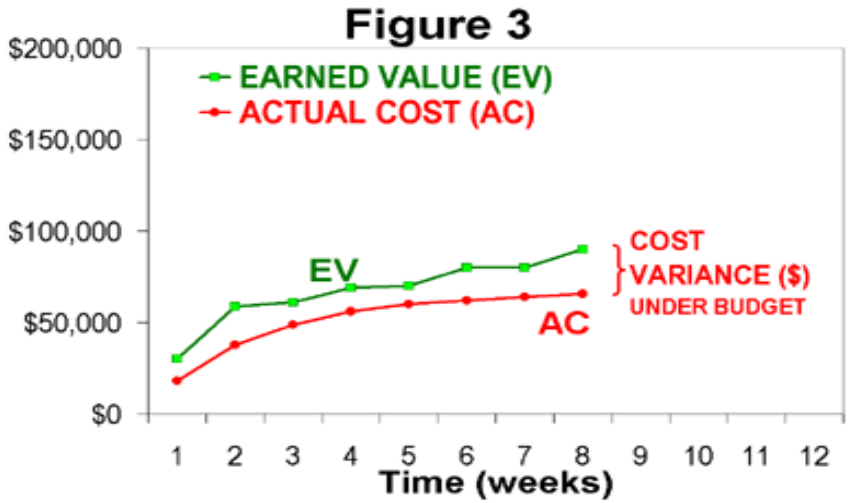
Earned Value Management – S Curve

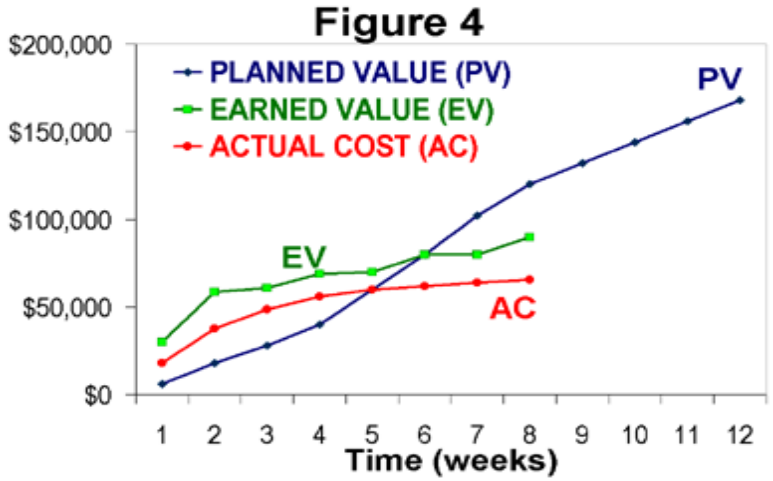


How project is progressing?









EVM-Variances

CV (Cost Variance) = EV- AC

CV = 0 => the Project is proceeding as per plan on cost

CV < 0 => the Project is over budget

CV > 0 => the Project is under budget

SV (Schedule Variance) = EV- PV

SV = 0 => the project is on plan, time-wise

SV < 0 => the project is BEHIND schedule

SV > 0 => the project is AHEAD of schedule

EVM- Indexes

CPI (Cost Performance Index) tells you how *much worth of job* you are getting for every $ being spent.

CPI = EV/AC

CPI = 1 => the project is on plan, cost wise
CPI < 1 => the project is over budget or under performing
CPI > 1 => the project is under budget or over performing

SPI tells the PM how *much worth of job* has been completed against planned work

SPI = EV / PV

SPI = 1 => the project is on schedule
SPI < 1 => the project is BEHIND schedule
SPI > 1 => the project is AHEAD of schedule

EVM- Critical Ratio

CR tells the PM the overall shape of your project

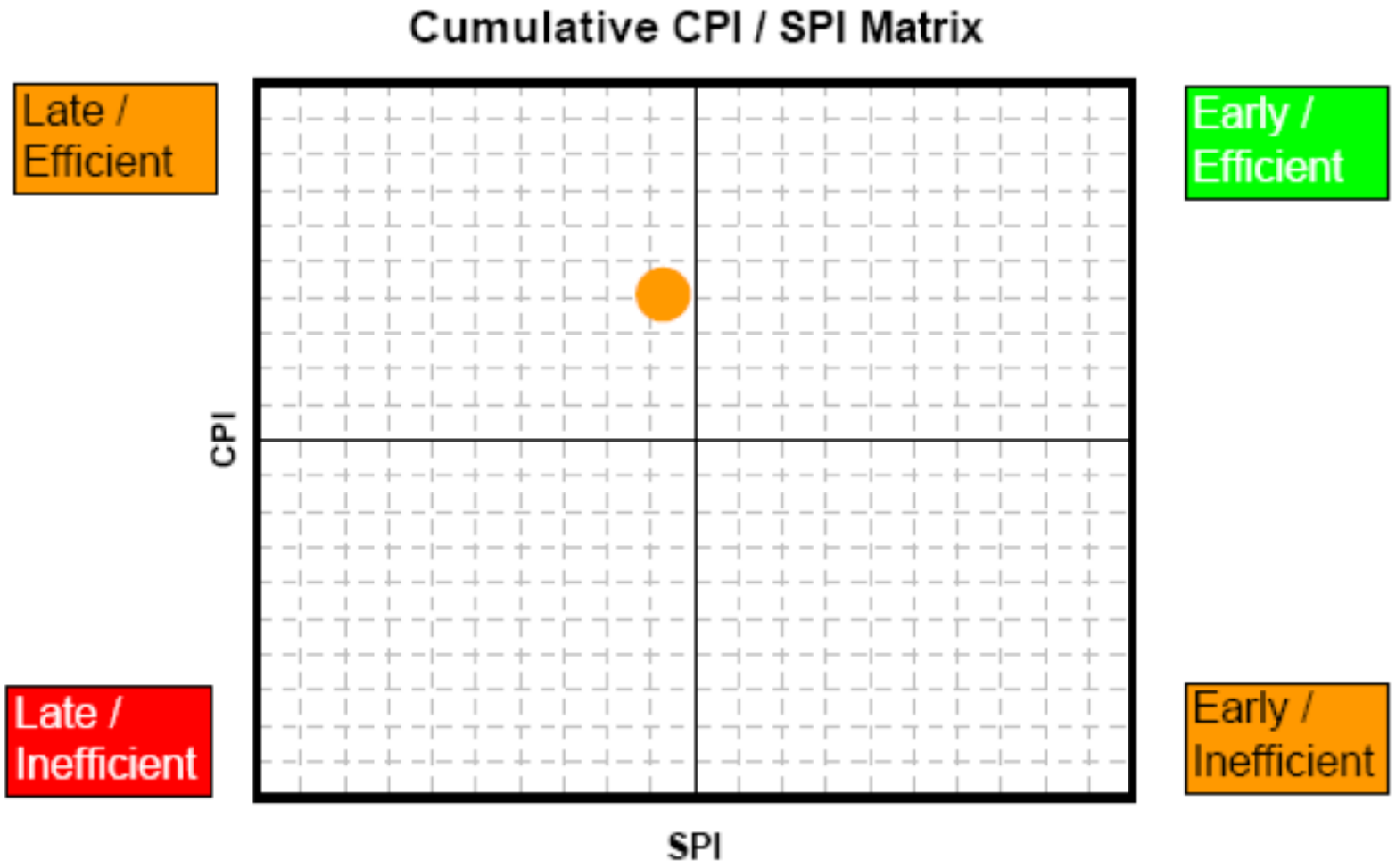
CR= CPI x SPI

CR = 1 => the project is on schedule & within budget

CR < 1 => the project is BEHIND schedule or budget or both

CR > 1 => the project is AHEAD of schedule or budget or both

CPI & SPI Summary



Forecasting- ETC

- *Recalculate it, if original estimate are no longer valid now.*
- *Calculate it manually based on the progress, if original estimates are still valid*

  ETC = BAC - EV

Forecasting- EAC

Estimate at Completion(EAC)

1. *EAC (atypical) = AC + ETC (Re-estimated)*
2. *EAC (atypical) = AC + BAC – EV (Estimated based on Progress)*
3. *EAC (typical considering CPI & SPI) = AC + ETC/ (CPI x SPI)*
4. *EAC (typical)= AC + ETC / CPI = BAC/CPI*

If you feel that you will be able to complete the project on time in spite of current delay then you can consider SPI as 1. In that case CR= SPI

Forecasting- Variance at Completion

- Variance at Completion (VAC)

  VAC = BAC – EAC

- *Variance at Completion (%)*

  PVAC= (BAC-EAC)/BAC

Forecasting: TCPI

TCPI (To complete Performance Index) **can be calculated using BAC or EAC**

- TCPI using BAC = (BAC-EV) / (BAC-AC)
- TCPI using EAC = (BAC-EV) / (EAC-AC)

Control Quality

- Project quality team ensuring that as a project team we ensure that we deliver that product to customer which s/he wanted.
- They can pass or fail the product. Passed product is called Validated Deliverables. You can show this to customer.
- Failed product need to be fixed by the project team before it is tested again by quality team.
- Quality team need to test only those deliverables which valued by the customer.

Tools/Tech for Control Quality

- Seven basic quality tools
- Statistical sampling
- Inspection
- Approved Change Request Review

Control Communications

- To ensure that project communications are happening as per the plan.
- To ensure that those communications are sufficient and stakeholders are happy
- To ensure that there are minimum ad-hoc communication
- To ensure there are minimum communication escalations

Tools/Tech for Control Communications

- Expert Judgment
- Information Management Systems
- Meetings

Control Risk

- Are risk management strategies effective?
- Is there any change in probability, impact, exposure, assignment, response plan of existing risk, ownership etc.?
- Any new risk identified? If yes then perform assess it crease a response plan.
- Any residual risk?
- An secondary risk?
- Contingency reserve kept for risk management is sufficient?

Tools/Tech for Control Risks

- Risk Reassessment
- Risk Audits
- Variance and trend analysis
- Technical performance measurement
- Reserve Analysis
- Meetings

Control Procurements

- Is supplier providing services as per the agreement signed?
- Maintaining vouchers, challans, invoices
- Tracking quality and payment
- Is there any change required in existing procurement contract?
- Make timely payments to your suppliers
- Accepting supplier provided product/services or raising change request.

Control Procurements

- How many times supplier failed to deliver as per quality or on time?
- How many times change requests were raised?
- How many times we failed to make payment on time?
- How many times procurement process non-compliance occurred?
- How many times false payment claims were raised?

Tools/Tech. for Control Procurements

- Contract Change Control System
- Procurement Performance Reviews
- Inspections and Audits
- Performance Reporting
- Payment Systems
- Claim Administration
- Records Management Systems

Control Stakeholder Engagements

- Are stakeholder on the project feeling engaged?
- Are they supporting your project?
- Could you covert some of the stakeholders in your favor?
- Is there any change in strategy required?
- Is there any new stakeholder has come or existing stakeholder's interest or position has changed?
- How many issues they raised vs how many were addressed on time vs how many turned to be change requests?
- How many escalations happened in the project?
- Perform root cause analysis using about data points and suggest preventive and corrective actions.

Tools/Tech for Control Stakeholder Engagements

- Expert Judgment
- Information Management Systems
- Meetings

Discussions !

Day 5

Themes

Day 1 : General Understanding

Day 2 : Project Planning

Day 3 : Project Execution

Day 4 : Project Governance

Day 5 : Closing

Closing

1. Close Project or Phase
2. Close Procurements
3. Professional Ethics
4. Microsoft Project 2013

Close Project or Phase

- Must be performed at the end of every phase or at project closure
- Project can be closed because
  - it achieved its objective or
  - Objective no longer valid or
  - Cannot be delivered or
  - Wrong decision was made initially or
  - Money is not there
  - Priority changed so will do it later
- This is the final step and formal step. No work is produced for the customer here, no testing no negotiation.

Close Project or Phase

- Prepare a handover report
- Handover the final product to customer
- Ensure all the agreement clauses are fulfilled. Close the contract.
- Lessons learned exercise should be performed with the project team and lessons learned should be documented
- Team should be informed and disbanded
- Lessons learned should be shared with PMO
- Project documents should be archived by IT
- Stakeholders should be communicated
- Department should be communicated
- Project Declared Closed

Close Procurements

- Procurement may be closed
  - Either all the items has been delivered or
  - Product/Services not required
  - Product/Services are not of good quality
- Audit all procurements
- Settle payments with supplier
- Conduct lessons learned exercise for each procurement, document lessons learned and share with organization
- Inform to your accounting and legal departments

Professional Ethics

Honesty

Honesty is our duty to understand the truth and act in a Truthful manner both in our communication and in our conduct

1. We earnestly seek to understand the truth
2. We are truthful in our communications and conduct and provide in timely manner
3. We make commitments and promises in good faith (implied & explicit)
4. We do not engage on or condone behavior that is designated to deceive others
5. We do not engage in dishonest behavior with the intention of personal gain or at the expense of other.

Responsibility

Responsibility is our duty to take ownership for the decisions we make or fail to make, the actions we take or fail to take & the consequences that result

1. Make decisions and take actions based on the BEST interests of society, Public safety and the environment

2. We accept those assignments that are consistent with our background, experience, skills and qualifications

3. We inform ourselves and uphold the policies, rules and regulations and laws that govern s our work, professional and volunteer activities

4. We report unethical or illegal conduct to appropriate management & if necessary to those affected by the conduct

5. We bring violations of this Code to the attention of the appropriate body for resolution. We only file ethics complaints when they are substantiated by facts.

Respect

Respect is our duty to show a high regard for ourselves, others and the resources entrusted to us

1. We inform ourselves about norms and customs of others and avoid engaging in behaviors they might consider disrespectful

2. We listen to others points of view , seeking to understand them

3. We approach directly those persons with whom we have conflict

4. We conduct ourselves in a professional manner

5. We negotiate in good faith, do not exercise the power of our expertise or position to influence decisions

Fairness

Fairness is our duty to make decisions and act impartially & Objectively. Our conduct must be free from competing self interest , Prejudice and favoritism.

1. We demonstrate transparency in decision making and constantly re-examine our impartiality .

2. We provide equal access to information to those authorized & equal opportunities to qualified candidates

3. We do not discriminate against others based on, but not limited to , Gender, Race, Age, Religion, Disability, Nationality or Sexual orientation.

Fairness

Conflict of Interest:

1. We proactively and fully disclose any real or potential conflicts of interest to the appropriate stakeholders.

2. When we realize that we have a real or potential conflict of interest :
   - We refrain from engaging in the decision making process or otherwise
   - attempting to influence outcome s, unless or until we have made full
   - disclosure to the affected stakeholders.

3. We do not hire or fire, reward or punish, or award or deny contracts based on personal considerations. Including but not limited to Favoritism, Nepotism, or Bribery.

Ethics Quick Test

Texas Instruments “Ethics Quick Test” for making ethical decisions

- Is the action legal?
- Does it comply with your understanding of company values?
- If you do it, will you feel bad?
- How will it look in the newspaper?
- If you know it is wrong, do not do it.
- If you are not sure, ask.
- Keep asking until you get an answer.

Project Manager's Oath of **Professional Responsibility**

Professional Responsibility

- Ensure individual integrity
- Adhere to legal requirements and ethical standards
- Protect Stakeholders
- Share lessons learned and other relevant information
- Build capabilities of colleagues
- Advance project management professionalism
- Improve competencies as project manager
- Balance stakeholder interests in project
- Respect cultural ethnic and personal differences
- Ensure collaborative project management environment
- Comply with all organizational rules and policies

Professional Responsibility

- Provide accurate and truthful representations in cost estimates
- Provide accurate and truthful representations in project reports
- Report violations of policies, procedures and code of ethics
- Strive for fair resolutions
- Satisfy competing needs and objectives
- Interact with others in a professional manner
- Be responsible for satisfying the complete scope and objectives of customer requirements
- Maintain and respect confidential information

Professional Responsibility

- Ensure that a conflict of interest does not interfere with professional judgment
- Disclose conflict of interest to customer
- Disclose circumstances that could be construed as conflicts of interest
- Refrain from offering or accepting inappropriate payments, gifts, or other forms of compensation
- Adhere to all applicable laws or customs of the country where services are being provided
- Respect intellectual property developed or owned by others
- Act in a accurate, truthful and competent manner

Discussions !

Microsoft Project 2013

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