Glossary of Project Management Terms

A - Project Management Terms

Accept - A decision to take no action against a threat. Project teams typically accept risks when they fall below risk thresholds or when the team thinks it best to act only if and when a threat occurs. (See also *risk acceptance*)

Acceptance criteria - The specific requirements expected of project deliverables. To be formally accepted, deliverables must meet all acceptance criteria.

Acceptance test - A test in which a team of end users runs a product through its full range of use to identify potential problems.

Acquisition process - This process obtains the personnel and resources necessary for project work. Acquisitions are closely coordinated with project budgets and schedules.

Action item - An activity or task that must be completed.

Action item status - This tracks an action item's progress from creation to closure. Since work packages comprise multiple action items, keeping action item statuses updated is important for project progress.

Activity - The smallest unit of work necessary to complete a project work package (which includes multiple activities). Time, resources, and finances are required to complete each activity.

Activity code - An alphanumeric value by which activities can be grouped and filtered. A code is assigned to each activity.

Activity identifier - A unique alphanumeric value by which an individual activity can be distinguished. An activity identifier is assigned to each activity.

Activity label - A short descriptor for an activity. Activity labels may be placed below arrows representing activities in activity-on-arrow (AOA) diagrams.

Activity list - This documents all the activities necessary to complete a project. Each activity is accompanied by its activity identifier and a description of the work it entails.

Activity-On-Arrow (AOA) - In this network diagram, arrows represent activities and nodes represent events or milestones. AOA diagrams can only indicate finish-to-start relationships.

Activity-On-Node (AON) - In a network diagram of this nature, nodes represent activities and arrows illustrate logical relationships between activities. AON diagrams can illustrate four relationship types: start-to-start, start-to-finish, finish-to-start, and finish-to-finish.

Actual cost of work performed (ACWP) - This represents the total cost incurred for work done in a given period of time.

Actual duration - The length of time taken to complete an activity.

Actual effort - The amount of labor performed to complete an activity. It is expressed in person-hours or similar units of work.

Actual expenditure - The sum of costs paid from a budget.

Actual progress - This measures the amount of work completed on a project. It is used to assess the comparison between project progress and project baselines and is usually stated as a percentage.

Adaptive project framework (APF) - An approach to project management that rejects traditional, linear project management and instead accepts changing requirements and allows projects to be affected by external business environments. The ADF stresses flexibility in many aspects of project management and focuses on performing and evaluating project work in stages to allow room for replanning due to changing business goals, objectives, and requirements.

Administrative closure - This refers to the set of formal requirements fulfilled to end a project. Among other things, it involves documenting the formal acceptance of deliverables and ensuring that all relevant information is sent to a project's sponsor and stakeholders.

Aggregate planning - This strategy uses demand forecasts to manage scheduling and planning for project activities between three and 18 months in advance, so that the necessary resources and personnel can be efficiently acquired or assigned.

Agile - The Agile family of methodologies is a superset of iterative development approaches aimed at meeting ever-changing customer requirements. Agile development proceeds as a series of iterations, or sprints, with incremental improvements made in each sprint. Since agile projects do not have fixed scopes, agile methodologies are adaptive, and the iterative work is guided by user stories and customer involvement.

Agile project management - Agile project management draws from concepts of agile software development. Agile approaches focus on teamwork, collaboration, and stakeholder involvement, as well as the use of iterative development methods.

Agile software development - Agile software development originates from the Agile Manifesto, a set of principles that emphasizes meeting changing requirements through collaborative development and making ongoing improvements through iteration. It stresses the importance of being reactive to rapid changes in external environments.

Allocation - The assigning of resources for scheduled activities in the most efficient way possible. (See also *resource allocation*)

Alternative analysis - The evaluation of possible courses of action for project work in order to find the most suitable course of action.

Analogous estimating - This technique uses historical project data to prepare time and cost estimates. It is considered the most inaccurate estimation technique. (See also *top-down estimating*)

Analytical estimating - This technique computes total project time and cost estimates by preparing estimates for each project activity and adding them together. Analytical estimating is considered the most accurate estimation technique. (See also *bottom-up estimating*)

Application area - The specific project category of which the project is a part. Application areas can be defined on the basis of project products' characteristics or applications or by the projects' customers or stakeholders.

Apportioned effort - Project work associated with components of a work breakdown structure and performed in proportion, with discrete effort. Since the amount of apportioned effort (which includes activities such as quality assurance) depends directly on the amount of discrete effort, it cannot be considered separately from discrete effort. It is one of three types of activities used to measure work performance as part of earned value management.

Approach analysis - During the project planning phase, this type of analysis is used to examine the various methods by which a project's goals may be achieved.

Arrow diagramming method (ADM) - A method of constructing a network diagram that uses arrows to represent activities and nodes to represent events or milestones. The ADM is used to construct activity-on-arrow (AOA) diagrams.

Artifact - Items that support software development. Artifacts include both items associated with the process of development, such as project plans, and items used to support actual aspects of development, such as use cases and requirements.

Assignment contouring - The process of assigning people to project work for changing numbers of hours per day as the project moves through different stages. Assignment contouring is typically done using project management software.

Assumption - Factors deemed to be true during the project planning process, though proof of their validity is not available. A project's assumptions can affect its risks and outcomes, so you must consider them carefully.

Authorization - In general, authorization is the power to make decisions that the management grants. The specific remit for authorization varies on a case-by-case basis.

Authorized work - Work that management or others in authority approve.

Avoid - A response to a negative risk that seeks to ensure the risk does not occur or (if the risk cannot be eliminated) seeks to protect the project objectives from the negative risk's impact. (See also *risk avoidance*)

B - Project Management Terms

Backward pass - This calculates late-start and finish dates for project activities by working backwards from the project end date.

Balance - A phase in the portfolio life cycle that involves balancing a portfolio's components based on risk, costs, and use of resources. It is an aspect of organizational project management. (See also *portfolio balancing*)

Balanced scorecard - A Balanced scorecard is a concept or tool used to assess whether an organization's activities are correlated with its general vision and objectives.

Bar chart - A diagrammed calendar schedule of project activities' start and end dates in logical order. (See also *Gantt chart*)

Baseline - This term represent the costs and schedules approved at the start of the project. They use baselines as a basis for monitoring and evaluating performance.

Benefits realization -This term focuses on ensuring that project results give customers and stakeholders the benefits they expect.

Blueprint - A document that explains what a program means to accomplish and describes a program's contribution to organizational objectives.

BOSCARD - This method details and considers the background, objectives, scope, constraints, assumptions, risks, and deliverables of new projects.

Bottom-Up estimating - This calculation computes total time and cost estimates for projects by preparing individual estimates for each of a project's activities and adding them together. Bottom-up estimating is considered the most accurate estimation technique. (See also *analytical estimating*)

Brief - This refers to the document produced during a project's concept phase. It is the primary document outlining requirements.

Budget - The sum of money allocated for a project. The term may also refer to a comprehensive list of revenues and expenses.

Budgeted cost of work performed (BCWP) - The portion of the budget allocated to scheduled work actually performed in a period of time. (See also *earned value*)

Budgeted cost of work scheduled (BCWS) - The portion of the budget allocated to work scheduled to be performed in a period of time. (See also *planned value*)

Burn down chart - A graph that shows the relationship between the number of tasks to be completed and the amount of time left to complete these tasks.

Burst point - A point in a network diagram at which multiple successor activities originate from a common predecessor activity. None of the successor activities may start until one finishes the predecessor activity.

Business analysis - The practice of identifying and solving business problems. It focuses on creating and implementing solutions to business needs via organizational development, process reengineering, or any number of other methods.

Business case - A documentation of the potential outcomes of a new project, including benefits, cost, and effects. It shows the reasoning for starting the project.

Business imperative - An issue, situation, or circumstance with the potential to affect a business in one way or another, depending on the course of action used to address it. Organizations prioritize business imperatives for actions that will realize any potential benefits or avoid any potential harm.

Business model - A company's business model is the system by which the organization's profitable activities are planned, structured, and executed, and by which it interacts with its customers.

Business operations - The entire ensemble of activities or business processes through which a company uses its assets to create value for its customers.

Business process - A Business process is a system of activities by which a business creates a specific result for its customers. There are three categories of business processes: management processes, operational processes, and supporting processes.

Business process modeling (BPM) - Business process modeling is the representation, analysis, and evaluation of business processes in an effort to improve them.

Business requirements - The conditions a product must satisfy to effectively serve its purpose within a business.

Business value - The business value of a project is the sum of positive effects — tangible and intangible — it has on the business.

C - Project Management Terms

Calendar unit - The smallest unit of time — usually hours or days — by which project activity durations are measured.

Capability maturity model (CMM) - This model is used to assess the maturity of business process capabilities. It was created to assess the capabilities of software development processes but is now used in a number of other industries as well. Like other maturity models, the CMM allows organizations to assess themselves against external benchmarks and provides recommendations for improvement.

CAPEX - CAPEX, or capital expenditure, is the money a company spends to acquire new fixed physical assets or upgrade old ones, typically for long-term use.

Case study - A case study involves extensive and in-depth formal research into an area of a company, a situation, or an event. Case studies typically result in formal reports that are published in academic or professional publications. They investigate important, singular, or locally representative cases that contribute to the advancement of knowledge.

Certified Associate in Project Management (CAPM) - This is an entry-level certification for project managers offered by the Project Management Institute. It is designed to build knowledge of project management processes and terms.

Champion - A project champion makes project success a personal responsibility. This person pushes the project team to work hard, liaise with stakeholders on behalf of the project, and support the project manager. Project champion is an informal role.

Change control - Change control is the process of identifying, evaluating, approving, and implementing changes to a project. It ensures that changes are introduced in a controlled and effective manner and that any adjustments necessitated by changes are also addressed.

Change control board - An appointed group of stakeholders who evaluate proposed changes and decide when and whether to make them.

Change control system/process - The process by which changes to the project are evaluated before approval, implemented, and documented.

Change freeze - The point at which scope changes to a project are no longer permissible.

Change management plan - A Change management plan details the change control process. It is created to ensure all changes are managed according to procedure. Change management plans can be created for individual projects or for organizations undergoing transitions.

Change request - A formal document submitted to the change control board that requests changes to the finalized project management plan. Change requests are usually made only for significant changes, as smaller changes with little to no impact on the project work can be brought to the project manager.

Client/Customer - The people who will directly benefit from a project. A team executes a project with specific attention to a client's requirements.

Closing phase - The final phase of the project management life cycle, in which all aspects of the project are officially completed and closed. This includes making sure that all deliverables have been given to the client, that the team notifies suppliers of completion, and that the team updates stakeholders regarding the end of the project and overall project performance.

Code of accounts - An alphanumeric system used to assign unique identifiers to all work breakdown structure components.

Collaborative negotiation - Collaborative negotiation entails all negotiating parties obtaining at least some of what they want from negotiations.

Communications log - This document is used to track all project-related communications. It is organized and edited by the project manager and details who communicated, when and where the communication took place, what information was shared, and the results of the communication.

Communications management plan - This plan states who will send and receive information on aspects of the project, what details are communicated, and when communications are sent. It is part of the project management plan.

Communities of practice - Groups of people who share an area of interest within project management. They meet regularly to share and develop knowledge in the area of interest.

Competence - The ability and knowledge required to perform the tasks associated with a specific role.

Competence framework - The set of competence expectations by which one assesses a person's suitability for a specific role.

Concept - The beginning phase of the project management life cycle. In the concept phase, the team presents the opportunity or problem (along with possible solutions) and examines the general feasibility of the project.

Conceptual project planning - Conceptual project planning involves developing the documentation from which a project's organization and control system will originate.

Concurrent engineering - A product development approach where design and development are carried out at the same time. It is used to shorten the development life cycle and to release products more quickly. The simultaneous execution of design and development can help to improve design practicality.

Configuration - Configuration of a product involves shaping its functions and characteristics to make it suitable for customer use.

Configuration management - Configuration management ensures that the product of a project meets all necessary specifications and stipulations. It provides well-defined standards for the management and team to guarantee that they meet quality and functional requirements, as well as any other characteristics considered important.

Consensus - A decision agreed upon by all members of a group.

Constraint - A limitation on a project. Among other things, constraints may be financial or based on time or resource availability.

Constructability - Constructability is a concept used in complex hard projects to assess and examine the entire construction process before beginning construction. It reduces the number of errors, setbacks, and delays once construction work actually begins.

Construction - The process by which a team builds infrastructure. Construction projects are complex. Engineers and architects supervise them, while a project manager manages the project work.

Consumable resource - A nonrenewable resource that cannot be used once consumed.

Contingency plan - An alternative or additional course of action planned in anticipation of the occurrence of specific risks.

Contingency reserve - An allocation of time or money (or both) set aside for the occurrence of known possibilities that could delay a project or make it more expensive. It is not the same as a management reserve, which is an allocation made for unforeseeable circumstances. Use of a contingency reserve is typically authorized upon the occurrence of a contingency.

Contract administration - The process by which a team manages a relationship with a contracting party. It establishes protocols for dealings between contracting parties.

Contract closeout - The process of determining whether the terms of a contract were completed successfully and of settling any remaining terms.

Control Account - A work breakdown structure tool that allows aggregation of costs for work packages as part of earned value management calculations.

Control chart - Control charts compare process results with historical averages and process control limits to show whether a process meets results expectations. If a process's results are inconsistent or fall outside process control limits, it may need to be examined and adjusted.

Core process - A process that follows an established order and is central to the performance of the process system or project of which it is part.

Corrective action - A step taken to bring work back into alignment with performance expectations after it has failed to meet expectations. A corrective action, which is reactive, is not the same as a preventive action, which is proactive.

Cost baseline - The sum of work package estimates, contingency reserve, and other associated costs by which project performance is assessed. A formal change control process is necessary to change the cost baseline.

Cost benefit analysis - A Cost benefit analysis is used to weigh project costs against anticipated tangible project benefits.

Cost engineering - The application of scientific and engineering principles to several aspects of cost management. Among other things, cost engineers contribute to estimation procedures and project cost management. Cost engineering may also be called project controls in some industries.

Cost management plan - This plan details how project costs will be planned, funded, and controlled. It is a part of the project management plan.

Cost of quality - The cost associated with ensuring project quality. This cost may mean the difference between unacceptable and acceptable project results.

Cost overrun - A cost overrun occurs when unexpected costs cause a project's actual cost to go beyond budget.

Cost performance index - A cost performance index measures the cost efficiency of a project by calculating the ratio of earned value to actual cost.

Cost plus fixed fee contract (CPFC) - Under a cost plus fixed fee contract, the seller is reimbursed for costs incurred and paid a predetermined fixed fee.

Cost plus incentive fee contract (CPIF) - Under a cost plus incentive fee contract, the seller is reimbursed for costs incurred and paid an additional fee if they meet performance criteria specified in the contract.

Cost plus percentage of cost contract (CPPC) - Under a cost plus percentage of cost contract, the seller is reimbursed for costs incurred and paid an additional amount equal to a percentage of the costs incurred if they meet performance criteria specified in the contract.

Cost reimbursable contract - A cost reimbursable contract is a contract under which a seller is reimbursed for costs incurred and paid an additional sum as per a predetermined agreement as profit. They are typically negotiated for projects with costs that are not fully known or not well defined.

Cost variance - The Cost variance of a project is its earned value minus its actual cost. A negative cost variance indicates that a project is running over budget. A positive cost variance indicates that a project is running below budget.

Cost/schedule impact analysis - A cost/schedule impact analysis determines the effects of a particular change on a project's cost or schedule.

Crashing - A schedule compression technique used to speed up project work by increasing the rate at which critical path activities are completed by adding more resources — usually more personnel or more equipment. Crashing increases project costs, so it is used first on activities that can be sped up at the least additional cost.

Critical chain project management (CCPM) - Critical chain project management is an approach to managing projects that emphasizes the resources needed to complete project activities over activity order and durations set in a schedule. It uses resource optimization techniques like resource leveling and requires that activity start times be flexible.

Critical incident stress debriefing (CISD) - CISD is a psycho-educational exercise for small groups who have experienced a traumatic event. It is sometimes used in project management to help project teams cope with trauma and to rebuild team cohesion.

Critical path activity - A scheduled activity that is part of a project's critical path.

Critical path method - The Critical path method is used to estimate the shortest length of time needed to complete a project and to determine the amount of float for activities that are not part of the critical path.

Critical success factor - A critical success factor is an aspect of a project that is crucial to the success of the project.

Criticality index - Each project activity is assigned a percentage called a criticality index, which is a measure of how frequently it is a critical activity in project simulations. Activities with high criticality indexes are likely to prolong project duration if delayed.

Current finish date - The most up-to-date estimate of when an activity will finish.

Current start date - The most up-to-date estimate of when an activity will start.

Current state - A detailed representation of current business processes that is used as a point of comparison for efforts to analyze and improve processes' efficiency, effectiveness, and outputs.

D - Project Management Terms

Data date - A data date, also called an as-of date, is a point at which a project's status is measured and documented. It separates actual data from scheduled data.

Decision tree analysis - A diagrammatic technique used to illustrate a chain of decisions and to examine the implications of multiple decision-making or situational outcomes.

Decomposition - The hierarchical breaking down of project deliverables into smaller components that are easier to plan and manage.

Defect repair - An action taken to remedy a product that is nonfunctional or does not match expectations or requirements.

Define - The phase in the portfolio life cycle in which projects, programs, and any organizational changes needed to realize strategic objectives are identified and examined.

Definitive estimate - A definitive estimate reaches a total project cost estimate by computing cost estimates for all a project's work packages. Definitive estimating is considered a highly accurate estimation technique, with estimates falling within a ten-percent range of the actual budget.

Deflection - The transferring of risk to another party, generally via a contract.

Deliverable - A final product or product component that must be provided to a client or stakeholder according to contractual stipulations.

Delphi technique - An estimation method based on expert consensus. Experts make estimates individually and simultaneously and then review their estimates as a group before making another set of estimates. The process is repeated, with the pool of estimates typically becoming narrower after each round of review until a consensus is reached. (See also *wideband delphi*)

Dependency - A logical relationship between project activities in a network diagram that determines when a dependent activity may begin.

Discrete effort - Project work directly associated with components of a work breakdown structure. It is directly measurable. Discrete effort is one of three types of activities used to measure work performance as part of earned value management.

Discretionary dependency - The preferred way to sequence activities when there is no logical limitation on how they must be ordered.

Do nothing option - An element of a project business case that states the consequences, if any, of not undertaking the project.

Drawdown - A method used to exercise control on the release of project funds. Instead of making entire project budgets available from the outset, management may choose to release funds at

specific times. These releases are called drawdowns. Drawdowns may coincide with phase gates so that funds are released at the beginning of each phase.

Dummy activity - In activity-on-arrow diagrams, where arrows represent activities, dummy activities show logical relationships between activities. They are not actual activities themselves - dummy activity arrows are drawn with broken lines to differentiate them from regular activity arrows.

Duration - The amount of time taken to complete an activity or task from start to finish.

Duration compression - Duration compression techniques shorten a project's duration without reducing its scope. This typically requires additional expenditure. There are two main duration compression techniques: crashing and fast tracking. (See also *schedule compression technique*)

Dynamic systems development method - The dynamic systems development method is one of the agile product development methodologies. Like other members of the agile family, it conducts development in a series of iterations, with user-story-based improvements made in increments. The dynamic systems development method operates with fixed cost and time constraints and uses the MoSCoW prioritization method to identify the desired product requirements with these constraints in mind.

E - Project Management Terms

Early finish date - The earliest time by which a scheduled project activity can logically finish.

Early start date - The earliest time by which a scheduled project activity can logically start.

Earned schedule - A method of measuring schedule performance that improves upon traditional earned value management. Earned value management tracks schedule variance only in terms of money and not in terms of time and thus does not accurately indicate schedule performance by the end of a project. To address this discrepancy, earned schedule theory uses the same data as traditional earned value management but tracks schedule performances separately with respect to money and time.

Earned value - A concept used to gauge project schedule and cost performance. Portions of the project budget are assigned to components of the work breakdown structure, and successful completion of a work breakdown structure component is understood as value earned through work.

Earned value management - A method of measuring project performance and progress with regard to scope, time, and costs. It is based on the use of planned value (where portions of the budget are allotted to all project tasks), and earned value (where progress is measured in terms of the planned value that is *earned* upon completion of tasks).

Effort - The amount of labor needed to complete a task. It is measured in person-hours or similar units.

Effort estimate - A calculated approximation of the effort — measured in staff-hours or similar units — needed to complete an activity.

Effort management - The most efficient allocation of time and resources to project activities.

End user - The person or persons who will eventually use the product of a project. Products are designed with end users in mind.

Enhancement, maintenance, and upgrade (EMU) - Enhancement, maintenance, and upgrade are project classifications used in the software development industry. Enhancement projects involve improving the functionality or performance of software. Maintenance projects keep software functioning as expected. Upgrade projects create a new version of the software, called a release.

Enterprise environmental factors - Internal and external factors that can impact projects. They include such things as climate, available resources, and organizational structure.

Enterprise modeling - Enterprise modeling is the creation of a model to represent an organization's structure, processes, and resources. Enterprise models are built to increase understanding of how organizations work. They form the basis of improvement or restructuring efforts.

Epic - A set of similar or related user stories.

Estimate at completion (EAC) - The estimated total cost for all project work, calculated as the sum of the actual cost and the estimate to complete.

Estimate to complete (ETC) - At a given point in a project, the estimate of the cost of the work that still needs to be completed.

Estimating funnel - A metaphor for the increased accuracy in estimation made possible as a project progresses.

Estimation - The use of estimating techniques to reach approximations of unknown values.

Event chain diagram - A visual representation of a schedule network based on event chain methodology. It shows relationships between project activities and risk events.

Event chain methodology - A schedule network analysis method that enables uncertainty modeling. It is used to identify risk events' impact on a schedule.

Event-Driven - The adjective describes an action that is prompted by the occurrence of an event.

Execution phase - The execution phase begins after activity approval and is the phase in which the team executes the project plan. Execution is typically the longest and most expensive phase in the project management life cycle.

Executive sponsor - Typically a member of the organization's board who is ultimately responsible for the success of the project. They provide high-level direction to project managers and are accountable to the board for project success.

Expert judgment - The practice of using expert opinion to guide decision making.

External dependency - An outside relationship that affects the completion of a project activity.

Extreme programming (XP) - An agile software development methodology that emphasizes a high degree of responsiveness to evolving customer demands. Development cycles in extreme programming are short, and releases are frequent. Its main features include high-volume communication with customers and pair programming.

Extreme project management (XPM) - An approach to project management used mostly for complex projects with a high degree of uncertainty. XPM is designed for projects where requirements are expected to change. Therefore, it focuses on flexibility more than rigid scheduling. Where traditional project management proceeds sequentially through the project management life cycle and thus clearly defines problems, scopes, and solutions, extreme project management accepts that all three aspects will change as the project proceeds and thus emphasizes continual learning over deterministic planning.

F and G - Project Management Terms

Fallback plan - A predetermined alternative course of action adopted if a risk occurs and a contingency plan proves unsuccessful in avoiding the risk's impact.

Fast tracking - A schedule compression technique or duration compression technique in which the duration of a critical path is shortened by performing sections of some critical path activities concurrently instead of consecutively.

Feasibility study - An evaluation of how likely a project is to be completed effectively, or how practical it is, taking resources and requirements into consideration.

Finish-To-Start - In a finish-to-start relationship, a successor activity cannot start until a predecessor activity has finished.

Finish-To-Finish - In a finish-to-finish relationship, a successor activity cannot finish until a predecessor activity has finished.

Fishbone diagram - A fishbone diagram is used in project management to identify and categorize the possible causes of an effect. (See also *Ishikawa diagram*)

Fixed duration - A task in which the time required for completion is fixed.

Fixed formula method - The fixed formula method calculates earned value in a given period of time by splitting a work package budget between the start and completion milestones of a work package. A known proportion of value is earned upon beginning the work package, and the rest is earned upon completing the work package.

Fixed price contract (FPC) - A fixed price contract pays an agreed-upon fee and does not incorporate other variables, such as time and cost.

Fixed units - A task in which the number of resources used is fixed.

Fixed work - A task in which the amount of effort required is fixed.

Float - A measure of the schedule flexibility involving a particular task.

Flowchart - A diagram that lays out the complete sequence of steps in a process or procedure.

Focused improvement - An improvement strategy based on the theory of constraints. Attention is focused on addressing one limiting factor — called a constraint — at a time in order to optimize a system. Each constraint is improved until it no longer limits the system's performance.

Fordism - Fordism, named for Henry Ford, is a manufacturing system in which mass-produced goods are priced affordably enough that those producing them may reasonably buy them with their own wages.

Forecast - A prediction or estimation of future project status based on available information.

Formal acceptance - The step at which authorized stakeholders sign off on a product, indicating that it meets their expectations.

Forward pass - A technique used to calculate early start and finish dates by working forwards from a point in a project schedule model.

Free float - The amount of time by which an activity can be postponed without affecting the early start dates of a successor activity.

Functional manager - The individual in charge of all activities carried out by a particular functional department within an organization.

Functional organization - An organization which organizes and manages staff members in groups based on specialty areas.

Functional requirements - The working characteristics of a product. These are based on how end users will use the product.

Future state - A detailed representation of the ideal condition of a company's business processes after improvement.

Gantt chart - A Gantt chart is a type of bar chart that shows all the tasks constituting a project. Tasks are listed vertically, with the horizontal axis marking time. The lengths of task bars are to scale with tasks' durations. (See also *bar chart*)

Gate - An end-of-phase checkpoint at which decisions are made regarding whether and how to continue with the project. (See also *phase gate*)

Go/No go - A point in a project at which it is decided whether to continue with the work.

Goal - An objective set by an individual or an organization. It is a desired endpoint reached by setting and working towards targets.

Goal setting - The process of creating specific, measurable, and attainable goals and of setting deadlines for these goals if desired.

Gold plating - The practice of incorporating features and improvements that go beyond a product's agreed-upon characteristics. This is generally done to boost customer satisfaction.

Governance - The structure by which roles and relationships between project team members and an organization's high-level decision makers are defined.

Graphical evaluation and review technique (GERT) - A network analysis technique that uses Monte Carlo simulation to bring a probabilistic approach to network logic and the formation of duration estimates. It is an alternative to the PERT technique but is not often used in complex systems.

H, I, and K - Project Management Terms

Hammock activity - In a schedule network diagram, a hammock activity is a type of summary activity that represents a number of grouped - but unrelated -smaller activities that occur between two dates.

Handover - In the project life cycle, a handover is the point at which deliverables are given to users.

Hanger - An unplanned break in a network path, usually caused by oversights regarding activities or dependent relationships between activities.

HERMES - A project management method created by the Swiss government and used by IT and business organizations. It is a simplified project management method that can be adapted to projects with varying degrees of complexity. It provides document templates to expedite project-related work.

High-Level requirements - The high-level requirements explain the major requirements and characteristics of the final product, including its purpose as a product and within the company. (See also *product description*)

Historical information - Data from past projects used in the planning of future projects.

Human resource management plan - A human resource management plan details the roles of and relationships between personnel working on a project, as well as how personnel will be managed. It is part of the project management plan.

Hypercritical activities - Critical path activities with negative slack time. They are created when a sequence of critical path activities leading up to another activity is too long to be completed in the stated duration.

Information distribution - The channels used to provide stakeholders with timely information and updates regarding a project.

Initiation phase – The formal start of a new project. It involves receiving proper authorization and creating a clear definition for the project.

Inputs - The information required to start the project management process.

Inspection - The process of reviewing and examining the final product to assess compliance to initial requirements and expectations.

Integrated assurance - The process of coordinating assurance activities across a number of assurance providers.

Integrated change control - The coordination of changes throughout all aspects of a project, including scope, budget, and schedule.

Integrated master plan (IMP) - A project management tool used to break down project work in large, complex projects. It lists project tasks and events in a hierarchical structure and shows relationships between them.

Integrated master schedule (IMS) - An integrated master schedule is produced from an integrated master plan. It is a list of all project tasks represented as a networked schedule.

Integration management plan - A document that explains integration planning and details how changes to project aspects will be managed.

Integration planning - The process of deciding how project elements will be integrated and coordinated and how changes will be addressed throughout the project management process.

Integrative management - Management processes that coordinate a number of project aspects including cost, schedule, and resources (among others).

Invitation for bid - An invitation for expressions of interest that a procuring organization extends. (See also *request for proposal*)

Ishikawa diagram - Ishikawa diagrams are used in project management to identify the possible causes of an effect. (See also *fishbone diagram*)

ISO 10006 - A set of quality-management guidelines for projects. It is a standard created by the International Organization for Standardization.

Issue - Anything that can cause problems for a project. The term typically refers to major problems that cannot be tackled by the project team on their own.

Issue log - Project issues and the persons responsible for resolving them. It may also include issue status, plans for resolution, and resolution deadlines.

Iteration - A concept from iterative software development that specifies a fixed time cycle for development work, typically a few weeks long. The development life cycle consists of a number of iterations, sometimes with a functional version of the software produced at the end of each one. Iterative development prioritizes time over scope, so there are rarely concrete requirements to be achieved in an iteration.

Iterative development - Iterative development focuses on developing products in a series of repeated fixed-time iterations, instead of working towards a single deliverable. At the end of an iteration, the team assesses progress and sets targets for the next iteration.

Iterative and incremental development - Iterative and incremental development is any combination of the iterative and incremental development approaches. It is an alternative to the waterfall development method: instead of focusing on sequential development with a single end product, it passes through a number of development cycles, with an improved version of the product, called an increment, produced at the end of each iteration.

Kanban - The word *kanban* means *visual signal* in Japanese. Kanban is a visual communication approach to the project management process. It uses visual tools like sticky notes or virtual cards in an online bulletin board to represent project tasks and to track and indicate progress throughout a project.

Kickoff meeting - The first meeting between a project team and stakeholders. It serves to review project expectations and to build enthusiasm for a project.

Key performance indicator (KPI) - A Key performance indicator is a metric for measuring project success. Key performance indicators are established before project execution begins.

L - Project Management Terms

Lag/Lag time - A necessary break or delay between activities.

Late finish date - The latest possible date a scheduled activity can be completed without delaying the rest of the project.

Late start date - The latest possible date a scheduled activity can be started without delaying the rest of the project.

Lateral thinking - Lateral thinking involves using a roundabout method to inspire new ideas or solutions. It can be done in a variety of ways, from using a random word to choosing an object in a room as a basis for thought.

Lead/Lead time - The amount of time an activity can be brought forward with respect to the activity it is dependent upon.

Lean manufacturing - A production methodology based on the idea of streamlining and doing more with less, such as by providing customers with the same product value while eliminating waste and thus reducing production costs.

Lean six sigma – Lean six sigma combines the no-waste ideals of lean manufacturing with the no-defects target of six sigma. The goal of Lean six sigma is to eliminate waste and defects so that projects cost less and deliver more consistent quality.

Lessons learned - The sum of knowledge gained from project work, which can be used as references and points of interest for future projects.

Level of effort - Work that is not directly associated with components of a work breakdown structure but that can instead be thought of as support work. Examples of level of effort include maintenance and accounting. It is one of three types of activities used to measure work performance as part of earned value management.

Life cycle - The entire process used to build its deliverables. Life cycles are divided into a number of phases. A variety of life cycle models are in use in project management.

Line of balance - A graphical technique used to illustrate relationships between repetitive tasks in projects such as building identical housing units. Each set of repetitive tasks is illustrated as a single line on a chart. Project managers look for places where dependent tasks intersect, indicating that the successor task must be delayed.

Linear sequential model - A linear sequential model moves through a project life cycle's phases systematically and sequentially. It is typically used for small projects with straightforward requirements, since sequential development makes it difficult to revise design based on testing or preliminary feedback. (See also *waterfall model*)

Linear scheduling method - A graphical scheduling technique used to assign resources when project work consists of repetitive tasks. It focuses on maximizing resource use and reducing time wastage due to interruptions.

Logic network - A chronologically arranged diagram that shows relationships between project activities.

Logical relationship - A dependency between project activities or between project activities and milestones.

M - Project Management Terms

Management - The act of overseeing planning, personnel, and resources to achieve a goal.

Management process - The act of planning and executing a project or process to meet a defined set of objectives or goals. Management processes may be carried out at multiple levels within organizations, with the scale and scope of activities typically increasing up the organizational hierarchy.

Management reserve - An allocation of money or time (or both) to address unforeseeable circumstances that might delay or increase the costs of a project. A management reserve is not the same as a contingency reserve, which is an allocation made for known possibilities. The senior management must typically approve any release of funds from a management reserve.

Management science (MS) - A field of study that seeks to improve organizational decision making through the use of quantitative and scientific research methods. It evaluates management decisions and outcomes to find optimal solutions to problems, and thus enables better decision making. (See also *operations research*)

Master project - A master project file comprises a number of smaller projects, called subprojects, arranged hierarchically.

Matrix organization - Employees in a matrix organization report to more than one boss, with different lines of reporting representing different organizational projects or functions. A matrix structure can boost employee engagement and cross-field approaches to problem solving, but it can also create ambiguity over an employee's role.

Maturity model - Maturity is the extent to which an organization's methods, processes, and decisions are standardized and optimized. A maturity model assesses one or more of these aspects against a set of external benchmarks to determine an organization's maturity level. Maturity models allow organizations to assess themselves according to management best practices. They typically offer recommendations for improvement.

Megaproject - A complex, large-scale, and high-investment project. Only hard projects may be termed megaprojects.

Merge point - A point in a network diagram at which multiple predecessor activities culminate in a single successor activity. The successor activity may not start until all the predecessor activities have finished.

Milestone - Milestones indicate specific progress points or events in project timelines. They mark progress needed to complete projects successfully.

Milestone schedule - A milestone schedule details the time relationships associated with project milestones.

Mission statement - A concise enunciation of the goals of an activity or organization. Mission statements are usually a short paragraph, and can be created for entire organizations or for individual projects. They are designed to provide direction and guidance.

Modern project management - An umbrella term for a number of contemporary management strategies. In contrast to traditional management, modern project management: features more recognition of quality and scope variation; refines processes more frequently; stresses collective, interdisciplinary knowledge and team consensus over individual leadership. It is also less based on traditional hierarchies- modern project teams draw from a range of organizational levels and functional areas.

Monte Carlo simulation/technique - Monte Carlo simulation is a computer-based technique that performs probabilistic forecasting of possible outcomes to facilitate decision making. For each possible decision — from the most high-risk to the most conservative — a Monte Carlo simulation provides decision makers with a range of possible outcomes and the likelihood that each will occur.

MoSCoW - The MoSCoW prioritization method allows project managers to communicate with stakeholders on the importance of delivering specific requirements. The acronym indicates four categories of priority and importance for project requirements. Each requirement is prioritized as a "must have," a "should have," a "could have," or a "won't have."

Most Likely Duration - An estimate of the most probable length of time needed to complete an activity. It may be used to compute expected activity duration through a technique called three-point estimation.

Motivation - A reason or stimulus that makes a person behave in a certain manner. In management, motivation refers to the desire to pursue personal or organizational goals and is positively associated with productivity.

Murphy's Law - Murphy's Law — "What can go wrong will go wrong." — is cited in project management as a reason to plan adequately for contingencies.

N - Project Management Terms

Near-critical activity - A near-critical activity has only a small amount of total float, or slack time. Near-critical activities have a high chance of becoming critical since their float is easily exhausted.

Near-critical path - A series of activities with only small amounts of total float, called near-critical activities. A near-critical path may become a critical path if its float is exhausted.

Negative variance - The amount by which actual project performance is worse than planned project performance. Negative variances in time and budget show the project is taking longer and is more expensive than planned, respectively.

Negotiation - A discussion to resolve an issue between parties. Negotiations can take place at any point during an activity and may be formal or informal.

Net present value (NPV) - Net present value is a concept that compares the present value of a unit of currency to its inflation-adjusted possible value in the future. It allows organizations to determine the financial benefits, or lack thereof, of long-term projects.

Network Path - In a schedule network diagram, a network path is a logically connected continuous series of activities.

Node - In a network diagram, a node is a point at which dependency lines meet. In activity-on-node diagrams, nodes represent activities. In activity-on-arrow diagrams, they represent events or stages.

Nonlinear management (NLM) - Nonlinear management refers broadly to management practices which emphasize flexibility, self-organization, and adaptation to changing circumstances. It runs counter to concepts in linear management, which seek to impose structure on organizations. The defining characteristics of nonlinear management include encouragement of out-of-the-box thinking, proactivity in responding to challenges, and flexible working arrangements for employees.

O - Project Management Terms

Objective - A clear, concise statement about what an activity is meant to accomplish. Objectives are written to be SMART: specific, measurable, achievable, realistic, and time-bound. A successful project meets all its stated objectives.

Operations and maintenance - Operations and maintenance is the stage at which a project or system is handed over to staff who will put it into full operation and carry out routine maintenance.

Operations management - The duty of ensuring that an organization's operations are functioning optimally. Operations managers maintain and improve the efficacy and efficiency of business processes. They seek to develop operations which deliver high-quality outputs while keeping costs low.

Operations research (OR) - A field of study that uses mathematical, statistical, and scientific methods to aid and optimize decision making. It uses techniques such as mathematical modeling and optimization to enable better decision making. (See also *management science*)

Opportunity - In project management, an opportunity is a possibility that can contribute to project objectives. Opportunities in project management are classified as a type of risk.

Opportunity cost - The opportunity cost of a particular course of action is the loss of potential gains from all alternative courses of action.

Optimistic duration - An estimate of the shortest length of time needed to complete a specific activity or task. It may be used to compute expected activity duration through a technique called three-point estimation.

Order of magnitude estimate - An order of magnitude estimate provides an early, imprecise idea of the time and money required to complete a project. It uses historical data from completed projects to form adjusted estimates for similar new projects, usually presenting these estimates as ranging from -25 percent to +75 percent of the actual budget to indicate the levels of uncertainty involved.

Organization - A formally structured arrangement of parties that actively pursues a collective purpose. Organizations can be affected by external factors, and they in turn can affect the external environment.

Organization development - Broadly, organization development involves strategic efforts to improve aspects of organizational performance such as efficacy, efficiency, and sustainability, as well as aspects of organizational health such as employee satisfaction and engagement. The term may also refer to a field of study focusing on the characteristics of organizations and their growth and evolution.

Organizational breakdown structure - A hierarchical model of an organization's units and all its activities. It shows relationships between activities and organizational units and indicates the responsibilities of each unit, thus providing a holistic perspective of how an organization operates.

Organizational enabler - Any practice, tool, knowledge, or skill base that facilitates an organization's pursuit of its objectives may be termed an organizational enabler.

Organizational planning - The strategic process of defining roles, responsibilities, and reporting hierarchies for parties within an organization, keeping the organization's objectives in mind. It is carried out based on the principles and strategies by which an organization manages its members.

Organizational process assets - The specific set of formal and informal plans and processes in use at an organization. They also constitute the sum of knowledge and experience accumulated from past efforts. Organizational process assets are essentially the unique knowledge and processes that facilitate an organization's operations.

Organizational project management - A strategic approach that emphasizes the effective management of projects, programs, and portfolios as the best way to pursue organizational objectives. It focuses on aligning an organization's activities with its objectives and on managing these activities collectively, so they contribute to objectives.

Organizational project management maturity - A measure of an organization's ability to meet its objectives by effectively managing all its activities. It can be assessed with a maturity model called the OPM3, which, like other maturity models, provides comparisons and recommendations for improvement.

Output - In project management, an output is the (usually physical) end product of a process.

Overall change control - The evaluation, coordination, and management of project-related changes. It concerns both the effective integration of changes to benefit the project and the management of adverse changes or emergencies, so that project activities are not disrupted.

P - Project Management Terms

P3 assurance - P3 assurance involves satisfying sponsors and stakeholders that projects, programs, and portfolios are on course to meet performance expectations, fulfill objectives, and meet requirements.

P3 management - P3 management refers collectively to the management of projects, programs, and portfolios.

Parallel life cycle - In a parallel life cycle, certain phases are conducted in parallel (they overlap).

Parametric estimating - A technique for estimating cost and duration based on using historical data to establish relationships between variables — for example, calculating unit costs and the number of units required to complete a similar activity.

Pareto chart - A Pareto chart is a combination bar chart and line graph where the bars represent category frequencies in descending order from left to right, and the line tracks the cumulative total as a percentage.

Path convergence - On a schedule network diagram, path convergence occurs when an activity has multiple predecessors.

Path divergence - On a schedule network diagram, path divergence occurs when an activity has multiple successors.

Percent complete - The percent complete indicates the amount of work completed on an activity as a percentage of the total amount of work required.

Performance measurement baseline - A performance measurement baseline uses the schedule, cost, and scope baselines to create a point of comparison by which project performance is assessed. Variance from the performance measurement baseline may prompt corrective action.

Performance reporting - Performance reporting is formally informing stakeholders about a project's current performance and future performance forecasts. The aspects of performance to be reported are typically laid out in a communications management plan.

Performing organization - The performing organization for a project is the one whose members and resources most directly perform the project work.

Pessimistic duration - The pessimistic duration is an estimate of the longest length of time needed to complete a specific activity or task. It may be used to compute expected activity duration through a technique called three-point estimation.

PEST analysis - A PEST analysis examines how political, economic, social, and technological factors might affect a project.

Phase - A distinct stage in a project life cycle.

Phase gate - A phase gate is an end-of-phase checkpoint where the project leadership reviews progress and decides whether to continue to the next phase, revisits work done in the phase, or ends the project.

Planned value (PV) - The budget assigned to the work it is meant to accomplish. (See also *budgeted cost for work scheduled*)

Planning - The development of a course of action to pursue goals or objectives.

Planning phase - In project management, planning refers specifically to a phase of the life cycle that involves creating plans for management, control, and execution, as well as for what a project is meant to accomplish.

Planning poker - A consensus-based estimation technique. It attempts to avoid the anchoring effect — where the first estimate forms a baseline for all subsequent estimates — by having project team members make estimates simultaneously and discuss their estimates until they reach agreement.

Portfolio - A collectively managed set of programs and projects.

Portfolio balancing - An aspect of organizational project management, portfolio balancing involves selecting and tailoring a portfolio's components so they can be managed in line with organizational objectives.

Portfolio charter - A portfolio charter details the formal structure of a portfolio and describes what it is meant to achieve. It authorizes the creation of a portfolio and connects its management with organizational objectives.

Portfolio management - The collective management of portfolios and their components in line with concepts of organizational project management.

Portfolio manager - The individual responsible for balancing and controlling a portfolio in line with concepts of organizational project management.

Portfolio, program, and project management maturity model (P3M3) - The P3M3 assesses organizational performance in portfolio, program, and project management via a set of key process areas (KPAs). Like other maturity models, the P3M3 allows organizations to measure their performance against external benchmarks and provides a roadmap for project performance and delivery improvement.

Positive variance - The amount by which actual project performance is better than planned project performance. Positive variances in time and budget show the project is proceeding faster and is less expensive than planned, respectively.

Precedence diagramming method (PDM) - The process of constructing a project schedule network diagram. It illustrates the logical relationships between project activities and shows the

order in which they must be performed by using nodes to represent activities and arrows to show dependencies. PDM also indicates early and late start and finish dates, as well as activity durations.

Precedence network - A precedence network visually indicates relationships between project activities. Boxes and links are used to represent activities and activity relationships. Precedence networks also detail the time relationships and constraints associated with activities.

Predecessor activity - In a schedule, a predecessor activity logically comes immediately before another activity, which is dependent on the predecessor.

Preventive action - A step taken to ensure future work does not stray from performance expectations. A preventive action, which is proactive, is not the same as a corrective action, which is reactive.

PRINCE2 - PRINCE2 is an acronym for projects in controlled environments, version 2. It is a project management methodology that emphasizes business justifications for projects. PRINCE2 management is based on clear organization of project roles and responsibilities and managing when necessary rather than by obligation. It involves planning and executing projects in a series of stages, with stipulated requirements for each work package.

PRiSM - PRiSM is an acronym for projects integrating sustainable methods. It is a project management methodology that focuses on minimizing negative impacts on society and the environment. PRiSM focuses on sustainability. It is essentially green project management.

Probability and impact matrix - A visual framework for categorizing risks based on their probability of occurrence and impact.

Problem statement - A problem statement concisely states and describes an issue that needs to be solved. It is used to focus and direct problem-solving efforts.

Process - A process is a repeatable sequence of activities with known inputs and outputs. Processes consume energy.

Process architecture - The sum of structures, components, and relationships that constitute a process system, which is a complex system of processes. It refers to the overall design of a process system and comprises both infrastructure (the constituent parts and relationships) and suprastructure (the larger system of which the process system is part).

Process management - The act of planning, coordinating, and overseeing processes with a view to improving outputs, reducing inputs and energy costs, and maintaining and improving efficiency and efficacy.

Process-based project management - A methodology that views projects as means of pursuing organizational objectives. It involves using an organization's mission and values to guide the creation and pursuit of project objectives. If project objectives aren't in alignment with the company mission statement, they are amended accordingly.

Procurement management plan - A procurement management plan explains how an organization will obtain any external resources needed for a project.

Product breakdown structure (PBS) - A product breakdown structure is used in project management to record and communicate all project deliverables in a hierarchical tree structure. It may be thought of as a comprehensive list of all project outputs and outcomes.

Product description - A product description defines and describes a project product and its purpose. (See also *high-level requirements*)

Product verification - Product verification involves examining a deliverable to ensure, among other things, that it meets requirements, quality benchmarks, and expectations set by the product description. It is conducted before a product is presented to a customer for acceptance.

Professional development unit (PDU) - A continuing education unit that project management professionals (PMPs) take to maintain certification.

Program - A collectively managed set of projects.

Program charter - An approved document that authorizes the use of resources for a program and connects its management with organizational objectives.

Program Evaluation and Review Technique (PERT) - PERT is a statistical method used to analyze activity and project durations. PERT networks are typically illustrated with activity-on-arrow diagrams. The method makes use of optimistic, pessimistic, and most likely durations to estimate expected durations for project activities and to determine float times, early and late start dates, and critical paths. (See also *three-point estimating*)

Program management - The collective management of programs and their components in line with concepts of organizational project management.

Program manager - A program manager has formal authority to manage a program and is responsible for meeting its objectives as part of organizational project management methods. They oversee, at a high level, all projects within a program.

Progress analysis - The measurement of progress against performance baselines. Progress analysis collects information about the status of an activity that may prompt corrective action.

Progressive elaboration - The practice of adding and updating details in a project management plan. It aims at managing to increase levels of detail as estimates are revised, and more up-to-date information becomes available.

Project - A temporary, goal-driven effort to create a unique output. A project has clearly defined phases, and its success is measured by whether it meets its stated objectives.

Project accounting - In project management, project accounting deals with reporting on the financial status of projects. It measures financial performance and actual costs against budgets or

baselines. Therefore, it complements project management while providing financial information to the sponsor. Project accounting may also be referred to as job cost accounting.

Project baseline - A project baseline comprises the budget and schedule allocations set during the initiation and planning phases of a project. Assuming the scope of the project remains unchanged, it may be used to determine variance from budget or schedule.

Project calendar - A project calendar indicates periods of time for scheduled project work.

Project charter - A Project charter is a document that details the scope, organization, and objectives of a project. It is typically created by a project manager and formally approved by the sponsor. A project charter authorizes the project manager's use of organizational resources for the project and is understood to be an agreement between the sponsor, stakeholders, and project manager. (See also *project*)

Project cost management (PCM) - The use of an information system to estimate, measure, and control costs through the project life cycle. It aims at completing projects within budgets.

Project definition - A project definition or project charter is a document created by a project manager and approved by a project sponsor that details the scope, organization, and objectives of a project. It authorizes a project manager's use of resources for a project and constitutes an agreement between the sponsor, stakeholders, and project manager (See also *project charter*)

Project management body of knowledge (PMBOK) - The PMBOK is a collection of project management-related knowledge maintained by the Project Management Institute.

Project management office - An organizational unit that oversees project management-related activities within an organization. It seeks to facilitate and expedite project work through the use of standard procedures. A project management office also functions as a repository of general, project-related knowledge and resources.

Project management process - A management process that encompasses all phases of a project, from initiation to the meeting of objectives.

Project management professional (PMP) - A Project management professional (PMP)is a person certified by the Project Management Institute upon completion of a course of formal education, an examination, and a certain number of hours managing projects. The certification is considered the gold standard in project management.

Project management simulators - Software training tools that teach project management skills via interactive learning and provide real-time feedback by which project management trainees can practice and reassess their decision making. Some simulators, such as the Monte Carlo simulator, are used to support and complement decision making in real projects.

Project management software - Project management software is a family of tools typically used in the management of complex projects. They provide the ability to: calculate estimates; create and manage schedules and budgets; track and oversee project activities and progress; assign

and allocate resources; optimize decision making; and communicate and collaborate with members of a project team.

Project management triangle - A visual metaphor that illustrates relationships between scope, cost, and schedule. It expresses the idea that none of the three aspects can be amended without affecting the others.

Project manager - The person tasked with initiating, planning, executing, and closing a project, and with managing all aspects of project performance through these phases. The term is typically used for a project management professional. Project managers are able to use organizational resources for projects. They serve as contact points for sponsors, program managers, and other stakeholders.

Project network - A visual representation of the activities and dependencies involved in the successful completion of a project.

Project performance indicators - Measures used to assess project performance, usually with reference to project or performance baselines. These typically include cost, schedule, and scope statuses.

Project phase - A distinct stage in a project management life cycle. Each phase comprises a set of project-related activities.

Project plan - A document formally approved by the project manager, sponsor, and other stakeholders which states the approved cost, schedule, and scope baselines. It guides project execution, control, and quality and performance assessment. The project plan also forms the basis for communication between parties involved in a project. Project plans can vary in their levels of detail.

Project planning - Project planning is usually the longest phase of the project management life cycle. It involves determining cost, schedule, and scope baselines and using these to create a detailed roadmap for executing project activities and producing deliverables.

Project portfolio management (PPM) - A method of collectively managing a portfolio's constituent programs and projects to pursue organizational objectives. It involves optimizing the mix and scheduling of projects to pursue objectives as effectively as possible. Project portfolio management is closely related to organizational project management.

Project schedule network diagram - A diagram is a visual representation of how scheduled project activities are ordered and related. Depending on the type of network diagram, boxes represent activities or events, and arrows indicate activities or dependencies, typically with expected durations.

Project scope statement - A project scope statement details what a project is meant to achieve and describes the deliverables expected. It forms the basis of measurable objectives by which the success of a project will be assessed. Project scope statements are typically part of project plans.

Project stakeholders - Broadly, a Stakeholder is any party which may be affected by a project. In project management, the term usually refers to parties with an interest in the successful completion of a project.

Project team - A project team is responsible for leading and collectively managing a project and its related activities through the project's life cycle. Project teams may contain members from several different functional groups within an organization. Depending on the nature of the project, a project team may be disbanded upon completion of a project.

Project tiers - Project sizing categorizes projects into project tiers based on staff power or time required for completion to determine the most appropriate project management practices.

Projectized organization - A projectized organization arranges all its activities into a collection of projects, programs, and portfolios. Projects are typically completed for external clients or customers. The prioritization of project work means the project manager can utilize resources and assign work as they see fit.

Proof of concept - A proof of concept is derived from a pilot project or experiment that examines whether an activity can be completed, or a concept can be realized. It shows the feasibility of an idea.

Proport - The term proport is used to define the sum of unique skills that team members bring to a project. These skills can be harnessed for collective benefit.

Q - Project Management Terms

Qualitative risk analysis - A project management technique that subjectively analyzes risk probability and impact. The risks are categorized on a probability and impact matrix, and those deemed significant may undergo a quantitative risk analysis.

Quality - In project management, quality is a measure of a deliverable's degree of excellence. Quality may also refer to a clearly defined set of stakeholder requirements by which results are assessed.

Quality assurance - A set of practices designed to monitor processes and provide confidence that result in deliverables meeting quality expectations. It may involve quality audits and the stipulated use of best practices.

Quality control - The use of standardized practices to ensure that deliverables meet stakeholder expectations. It involves not only the definition and identification of unacceptable results but also the management of processes to optimize results.

Quality management plan - A quality management plan identifies stakeholders' quality expectations and details quality assurance and quality control policies to monitor results and meet these expectations. It is part of a project management plan.

Quality planning - Quality planning involves identifying expected quality standards and creating mechanisms to ensure these standards are met. It may also recommend corrective action if quality standards are not being met.

Quality, cost, delivery (QCD) - QCD is an approach to management that focuses on assessing production processes with regard to three aspects: quality, cost, and delivery. It seeks to simplify process management and facilitate decision making by providing objective information about each of the three aspects, with an understanding that modifications to any one aspect will also affect the others.

Quantitative risk analysis - The mathematical analysis of risk probability and impact. In project management, it is not a substitute for qualitative risk analysis. Instead, quantitative analysis is conducted after qualitative analysis and assesses risks that qualitative analysis has identified as significant.

R - Project Management Terms

RAID log - RAID is an acronym for risks, assumptions, issues, and dependencies. The RAID log is a project management tool that records developments in these four aspects of project work for the stakeholders' benefit and for an end-of-project review.

RASCI/RACI chart - A RASCI chart is created during project initiation to identify those who are: responsible for project activities, accountable for ensuring that work is done, signing off on the work, consulted in relation to work activities, and informed about the status of the work. The acronym may be simplified as RACI. (See also *responsibility assignment matrix*)

Reengineering - Reengineering involves the extensive redesign or rethinking of core processes to achieve major performance improvements. It focuses on optimizing key performance areas such as quality and efficiency. Reengineering often involves restructuring organizations so that multi-functional teams can manage processes from start to end.

Release - In IT project management, a release is a fully functional software delivered to a customer as agreed, typically after a series of iterations.

Remote team - A remote team's members work in collaboration, usually electronically, from different geographic locations.

Repeatable - The term repeatable is used to describe a sequence of activities that may be easily and efficiently replicated. Repeatable processes are economical since they typically avoid negative variances and have established operations.

Request for proposal - A formal invitation for expressions of interest that is extended by an organization looking to procure goods or services. (See also *invitation for bid*)

Request for quotation - Upon receipt of proposals after issuing a request for proposal, an organization will issue a request for quotations to shortlisted proposers, asking for detailed cost estimations for specific goods or services.

Requirements management plan - A requirements management plan explains how project requirements will be defined, managed, and delivered. It is part of a project management plan and is used to guide project execution and control to adequately deliver requirements.

Requirements traceability matrix - A table that tracks requirements through the project life cycle and product testing. It is used to ensure that a project is able to deliver the stipulated requirements during the verification process.

Requirements - A set of stipulations regarding project deliverables. They are a key element of the project scope and explain in detail the stakeholders' expectations for a project.

Residual risk - Any risks that have not or cannot be addressed by risk mitigation or risk avoidance procedures.

Resource allocation - The assigning and scheduling of resources for project-related activities, ideally in the most efficient manner possible. Resource allocation is typically handled by a project manager, though they may be overridden by a program manager if resources are to be shared between multiple projects. (See also *allocation*)

Resource availability - Resource availability indicates whether a specific resource is available for use at a given time.

Resource breakdown structure - A hierarchical list of resources needed for project work, classified by type and function.

Resource calendar - A resource calendar indicates resource availability, usually by shift, over a period of time.

Resource leveling - A technique that involves amending the project schedule to keep resource use below a set limit. It is used when it is important to impose limits on resource use. Resource leveling can affect a project's critical path.

Resource loading profiles - Resource loading profiles indicate the number and type of personnel required to do project work over periods of time.

Resource optimization techniques - Resource optimization techniques seek to reconcile supplies and demands for resources. Depending on whether project duration or limiting resource use is prioritized, they can be used to amend activity start and finish dates in ways that do or do not affect a project's critical path. (See also *resource leveling* and *resource smoothing*)

Resource smoothing - A technique that makes use of float when allocating resources so as not to affect total project duration. It is used when project time constraints are important. Resource leveling does not affect a project's critical path.

Resource-Limited schedule - A resource-limited schedule has had its start and end dates adjusted based on the expected availability of resources.

Resources - The elements needed for a project to successfully meet its objectives. Examples of resources include equipment, staff, locations, facilities, and money.

Responsibility assignment matrix - A responsibility assignment matrix identifies those who are: responsible for project activities, accountable for ensuring that work is done, consulted about work activities, and informed about the work status. (See also *RASCI/RACI* chart)

Retainage - The sum of money withheld from a contract payment until completion of the contract according to terms.

Return on investment (ROI) - The expected financial gain of a project expressed as a percentage of total project investment. It is used to assess the overall profitability of a project.

Risk - The probability of occurrence of a specific event that affects the pursuit of objectives. Risks are not negative by definition. In project management, opportunities are also considered risks.

Risk acceptance - Risk acceptance involves acknowledging a risk and not taking preemptive action against it.

Risk appetite - The amount and type of risk an organization is willing to accept in anticipation of gains. It is not the same as risk tolerance, which is the amount of variation in performance measures that an organization is willing to accept.

Risk assessment - An activity that involves identifying possible risks to a project and examining how these risks, if they occur, would affect objectives.

Risk avoidance - Risk avoidance focuses on avoiding threats that can harm an organization, its projects, or assets. Unlike risk management, which is geared toward mitigating the impact of a negative event, risk avoidance seeks to address vulnerabilities and make sure those events do not occur.

Risk breakdown structure - A hierarchical model of all risks, arranged categorically.

Risk category - A set of risks grouped by cause.

Risk efficiency - A concept based on the idea of maximizing the return-to-risk ratio. It can do this in two ways: by minimizing exposure to risk for a given level of expected return or by seeking the highest possible expected return for a given level of risk.

Risk enhancement - Risk enhancement involves increasing the probability of an opportunity, or positive risk, occurring.

Risk exploitation - Risk exploitation focuses on ensuring that an opportunity, or positive risk, occurs.

Risk identification - The process of identifying and examining risks and their effects on project objectives.

Risk management - A subset of management strategies that deals with identifying and assessing risks and acting to reduce the likelihood or impact of negative risks. Risk managers seek to ensure that negative risks do not affect organizational or project objectives.

Risk mitigation - Risk mitigation involves decreasing the probability of a negative risk occurring, as well as protecting project objectives from a negative risk's impact.

Risk monitoring and control - The risk monitoring and control process uses a risk management plan to identify risks and implement appropriate risk responses.

Risk owner - A risk owner is responsible for determining and enacting appropriate responses to a specific type of risk. (See also *risk response owner*)

Risk register - A risk register, or risk log, is a tool used to chronicle risky situations and risk responses as they arise.

Risk response owner - A risk owner monitors a specific type of risk and implements appropriate risk responses when necessary. (See also risk owner)

Risk response planning - Risk response planning is typically conducted after risk analyses to determine appropriate courses of action for risks is deemed significant.

Risk sharing - Risk sharing involves handing ownership of a positive risk to a third party who is typically specialized and better able to realize the opportunity.

Risk threshold - The level at which the likelihood or impact of a risk becomes significant enough that the risk manager deems a risk response necessary.

Risk tolerance - The level of variation in performance measures that an organization is willing to accept. It is not the same as risk appetite, which is the level and type of risk an organization is prepared to accept in anticipation of gains.

Risk transference - Risk transference involves handing ownership of risk to a third party who is typically specialized and better able to address the risk or to withstand its impact.

Risk trigger - An event that causes a risk to occur. A trigger can serve as a warning that a risk has occurred or is about to occur.

Rolling wave planning - A planning approach that focuses on in-depth detailing of work to be accomplished in the near term and progressively lower levels of detail for work scheduled farther in the future. It is based on the idea that work scheduled in the future is more subject to change and thus less worth planning in detail. Rolling wave planning only works for schedules with clearly defined iterations.

Root cause - The primary reason an event occurs.

Run book - A comprehensive catalog of information needed to conduct operations and to respond to any emergency situations that arise during operations. It typically details, step by step, all regular operational procedures and emergency responses.

S - Project Management Terms

S-Curve analysis - An s-curve tracks cumulative financial or labor costs. S-Curve analysis is used to compare a project's cumulative costs at any given point with a cumulative cost baseline created during the planning phase. It allows project managers and sponsors to assess performance and progress.

Schedule - A comprehensive list of project activities and milestones in logical order, with start and finish dates for each component.

Schedule baseline - A schedule baseline is the original project schedule — approved by the project team, sponsor, and stakeholders — by which performance is assessed. Schedule baselines are generally inflexible, though alteration of a schedule baseline via a formal change control process may be allowed.

Schedule compression technique - A schedule compression technique speeds up projects without affecting scope by decreasing the duration of a project's critical path. There are two main schedule compression techniques: crashing and fast tracking. (See also *duration compression*)

Schedule model - A logically arranged, time-based plan for project activities. It is used to create a project schedule.

Schedule model analysis - Schedule model analysis examines the project schedule created from a schedule model. It aims to optimize the schedule, usually via the use of scheduling software.

Schedule network analysis - Schedule network analysis uses a variety of techniques to identify early and late start and finish dates for project activities and thus to create project schedules.

Schedule performance index (SPI) - The ratio of earned value to planned value at a given point in time. It shows whether a project is running to schedule. An SPI lower than one indicates the project is behind schedule. An SPI higher than one indicates the project is ahead of schedule.

Schedule variance - Schedule variance is the difference between earned value and planned value at a given point in time.

Scientific management - Scientific management was an early attempt to bring scientific approaches to process management. Its earliest form was derived from a 1911 monograph by Frederick W. Taylor, who focused on increasing economic efficiency via the analysis and optimization of labor processes.

Scope - The scope of a project constitutes everything it is supposed to accomplish in order to be deemed successful.

Scope baseline - The set of requirements, expectations, and work packages approved as project deliverables. It is used to guide and assess project performance.

Scope change management - Scope change management deals with amendments to the scope as set in the scope baseline and project management plan. Since scope amendments typically affect cost and schedule estimates, scope change management involves revising estimates and adequately communicating these to stakeholders, as well as obtaining the resources necessary to fulfill new scope requirements.

Scope creep - Scope creep refers to gradual changes in project scope that occur without a formal scope change procedure. Scope creep is considered negative since unapproved changes in scope affect cost and schedule but do not allow complementary revisions to cost and schedule estimates.

Scrum - Scrum is an iterative development procedure used in software development projects. Scrum-based projects focus on prioritizing requirements and working towards a clear set of goals over a set time period, called a sprint. The development team thus works through the list of requirements over a number of sprints. Scrum-based projects usually do not have project manager. Instead, the project team meets daily for progress updates.

Secondary risk - A risk created by a risk response.

Security - Security in project management refers broadly to protecting humans, information, and resources from risk.

Six Sigma - An approach to process management that focuses on the near total elimination of product or service defects. It uses quality management methods to improve and optimize processes involved in the production of a product or service so that 99.99966 percent of process outcomes are defect-free.

Slack time - The length of time an activity's early start can be delayed without affecting project duration. (See also *float*)

Slip chart - A slip chart graphically compares predicted activity completion dates with originally planned completion dates.

Slippage - The negative variance between planned and actual activity completion dates. Slippage may also refer to the general tendency of a project to be delayed beyond planned completion dates.

Soft project - A soft project does not have a physical output.

Software engineering - Software engineering is generally defined as the use of engineering principles in software development. It systematically employs scientific and technological approaches in the design, operation, and modification of software.

Spiral life cycle - An IT system's development model that aims to learn from experience by drawing from both iterative development and the waterfall model. It has four sequential phases: identification, design, construction, and evaluation and risk analysis. At the end of each life cycle, an iteration is assessed by the customer, and the spiral sequence begins again upon receipt of

customer feedback. The spiral model is typically used in long-term projects or those where requirements are expected to vary, and customer feedback is to be incorporated in phases.

Sponsor - A sponsor has ultimate authority over a project. They provide high-level direction, approve project funding as well as deviations from cost and budget, and determine project scope. Sponsors are typically members of the senior management and are expected to provide high-level support for a project.

Sprint - In iterative project development, a sprint is a fixed unit of time during which the project typically passes through a complete development life cycle. A sprint is usually a few weeks long.

Stakeholder - In project management, a Stakeholder is any party with an interest in the successful completion of a project. More generally, the term refers to anyone who is affected by a project. (See also *project stakeholder*)

Standards - A standard prescribes a collection of standardized rules, guidelines, and characteristics requirements for processes or products that are approved by a recognized body. Standards are not by definition mandatory. They are adopted by consensus, although they may be enforced as a requirement for participation in certain markets.

Start-To-Finish - In a start-to-finish relationship, a successor activity cannot finish until a predecessor activity has started.

Start-To-Start - In a start-to-start relationship, a successor activity cannot start until a predecessor activity has started.

Statement of work (SoW) - A Statement of work is a comprehensive and detailed list of deliverables expected under a contract, with expected dates for each deliverable.

Steering committee - A steering committee provides high-level strategic guidance on a project. It typically comprises individuals from a number of stakeholder organizations and serves to provide consensus-based direction on projects with a large number or a diversity of stakeholders.

Story point - In sprint-based projects, a story point is a measure of the amount of work required to implement a particular user story. Assigning and totaling story points allows project teams to target a realistic number of user stories for action during an iteration or sprint.

Successor activity - In a schedule, a successor activity logically comes after and depends on an activity immediately preceding it.

Summary activity - In a network diagram, a summary activity combines a set of related activities and visually represents them as a single activity.

Sunk cost - A cost that cannot be recovered once spent.

Systems development life cycle (SDLC) - In systems engineering, the systems development life cycle is the process of creating, releasing, and maintaining an information system, which may

comprise hardware, software, or both. The typical SDLC has six sequential phases: planning, analysis, design, implementation, testing, and maintenance.

Systems engineering - A field of engineering that applies principles of systems thinking to the development of complex systems. Since complex systems are more difficult to coordinate and make cohesive, systems engineering focuses on developing and optimizing systems as interactive wholes instead of sums of parts. As complex systems comprise both technical and human elements, systems engineering is, by nature, interdisciplinary.

T - Project Management Terms

Task - In project management, a task is a unit of work or activity needed for progress towards project goals. Typically, a task must be completed by a set deadline. Tasks may be further broken down into assignments or subtasks.

Task analysis - A task analysis details the actions or resources required to complete a task.

Testing - The testing phase involves assessment of the product developed so as to gauge quality and performance and to determine whether requirements have been met.

Theory of constraints - The theory of constraints explains that any process is limited from optimum performance by its weakest link or links, called constraints. The theory of constraints methodology involves identifying these weak links via a strategy called focusing and improving them until they no longer limit performance.

Threat - A negative risk that could adversely affect project objectives.

Three-point estimating - A superset of estimating techniques that use averages (or weighted averages) of most likely, optimistic, and pessimistic costs, and duration estimates to form final estimates.

Time and material contract - A time and material contract pays per unit of time and reimburses materials costs for contracted work.

Time chainage diagram - In project management, a time chainage diagram graphically represents scheduled activities for a hard project completed sequentially over a geographic distance, such as the construction of a motorway or the laying of a pipeline. It thus provides both a scheduled time and a relative geographic location for each activity.

Time limit - The time limit for a task is the window of time or deadline by which it must be completed.

Time-scaled network diagram - A network diagram is time scaled if the lengths of activities are drawn to scale to indicate their expected durations.

Timebox - Timeboxing is a project management strategy that prioritizes meeting deadlines over scope requirements. It involves assigning specific lengths of time, called timeboxes, to project activities. Project teams work to address as many requirements as possible within each timebox, proceeding to successor activities once the time limit has passed.

Timeline - A Timeline is a graphical, sequential representation of project activities.

To-Complete Performance Index (TCPI) - A project's to-complete performance index is the cost performance it needs to achieve to be completed within budget. The TCPI is calculated as the ratio of work remaining to budget remaining.

Tolerance - The acceptable level of variance in project performance. The project sponsor is typically informed if tolerance levels are crossed.

Top-Down estimating - Top-Down estimating uses historical data from similar projects to compute time and cost estimates. (See also *analogous estimating*)

Total cost of ownership (TCO) - The total cost of ownership estimates the sum total of direct and indirect costs incurred in the purchase, operation, and maintenance of an asset through its life.

Total float - The length of time an activity can be delayed from its early start date without affecting the project end date.

Trigger condition - A condition that causes a risk to occur. Trigger conditions can serve as warning signs that risks have occurred or are about to occur. (See also *risk trigger*)

U, V, W, and X - Project Management Terms

Unified process - A unified process may refer to any one of a family of iterative software development process frameworks. Unified processes have four phases: inception, elaboration, construction, and transition. Each phase comprises a number of timeboxed iterations, which in turn involve a cycle of specifying requirements, analysis, design, implementation, and testing, with emphases on these shifting as the project team proceeds through iterations. Each iteration results in an improved version of the system called an increment.

Use case - In software development, a use case is a step-by-step list of actions that end users would take to achieve specific goals. Use cases facilitate end user-focused software testing.

User story - A project requirement stated in one sentence. It typically identifies users, real or hypothetical, what these users want from software, and why they want it. Project development teams prioritize user stories in each iteration by assigning story points

V life cycle - The V in V life cycle stands for verification and validation. It is a sequential software development process that matches a corresponding testing phase to each phase in the software development life cycle. During the verification phase, a project team works at increasingly granular levels of detail to identify requirements and design, and then builds the software. Validation proceeds in the opposite direction, as testers examine software components in turn before moving on to systems testing and finally checking that the project as a whole meets requirements.

Value engineering - Value engineering seeks to increase the functionality-to-cost ratio of a product by providing improved functionality at lower cost. Some applications of value engineering attract criticism, as manufacturers may decrease costs by using lower-quality components that decrease product lifespans.

Value for money ratio - In project management, the value for money ratio is expressed as the ratio of financial and other benefits to the resources expended in a project.

Value tree - A hierarchical model of the characteristics of a product or service that determine its value.

Variance analysis - The practice of investigating deviations between planned and actual performance.

Variance at completion (VAC) - A project's variance at completion is the difference between its budget at completion and its estimate at completion.

Vertical slice - A performance indicator that demonstrates progress across all project components or performance areas at a given point in time.

Virtual design and construction (VDC) - A method based on using technology in design and construction projects. It uses building information modeling (BIM) tools that focus on designable and manageable aspects of projects to create integrated models that predict project performance.

Virtual team - A virtual team comprises people from different organizations, locations, or hierarchies. It is not necessarily the same as a remote team, which is a group of people working together from different locations.

Waterfall model - The Waterfall model is a software development life cycle in which development phases are sequential, non-iterative, and do not overlap. It is typically reserved for small projects with straightforward, clearly defined requirements since a sequential development process makes it difficult to revisit the analysis and design phases once testing has begun. (See also *linear sequential model*)

Weighted milestone method - The weighted milestone method allows project managers to estimate earned value by splitting work packages into weighted segments. Each segment represents a portion of the budget value for the work package and ends with a milestone. When a segment milestone is classified as complete, a portion of the total work package value has been earned.

What-If scenario analysis - A simulation technique that allows project managers to determine and compare specific conditions' effects on project schedules and objectives.

Wideband delphi - An estimation technique based on expert consensus. Each member of an estimation team uses a work breakdown structure to create anonymous estimates of the effort required to complete each project element or work package. The estimates are then reviewed as a group before the experts create new estimates, and the process is repeated for a number of rounds until a consensus is reached. (See also *delphi technique*)

Work - In project management, work is the amount of effort needed to complete a task.

Work authorization system - A formal procedure to ensure that project work is performed on time and in logical order.

Work breakdown structure (WBS) - A Work breakdown structure is a comprehensive, hierarchical model of the deliverables constituting the scope of a project. It details everything a project team is supposed to deliver and achieve. A work breakdown structure categorizes all project elements, or work packages, into a set of groups and may be used to form cost estimates.

Work breakdown structure dictionary - A document that details, describes, and provides scheduling information for every element of a work breakdown structure. It may be thought of as a dictionary-cum-schedule of work packages.