GLOSSARY FOR DIPLOMA IN TECHNICAL PROJECT MANAGEMENT IN GEOMETRIC AND LIVING ORDER

Module 1: Project Management Foundations

- **Agile**: A project management methodology that emphasizes an iterative approach to product development, with the project specifications evolving along with the customer's notion of the software requirements. There are many flavors of Agile, but the most widely used is Scrum
- **Behavioral economics**: According to OxfordDictionaries.com, "a method of economic analysis that applies psychological insights into human behavior to explain economic decision-making"
- **Geometric order**: A type of order identified by the French philosopher Henri Bergson that is characterized by linear development, clear cause and effect, and predictable events
- **Integrated project delivery (IPD)**: A means of contractually aligning stakeholders in a construction project in a way that emphasizes close collaboration, with the goal of delivering value as defined by the customer. IPD is inspired by Lean and relies on a type of contract known as a multi-party agreement, which explains each participant's role in the project
- **Lean**: A business model and project management philosophy that offers a means to streamline projects while allowing for the flexibility required to deal with unexpected events. It emphasizes the elimination of waste through the efficient flow of work from one phase of a project to another
- **Living order**: A type of order identified by the French philosopher Henri Bergson that is characterized by rapid change and unpredictable events
- **Project**: A "piece of planned work or activity that is completed over a period of time and intended to achieve a particular aim"(Cambridge English Dictionary 2018)
- **Project outcome**: In its narrowest sense, a project's measurable output—whether that's a building, a software application, or a part for a fighter jet. In a broader sense, the impact a project has compared to its larger goals
- **Project success**: The degree to which a project is done well. Stakeholders' evaluation of project success is a subjective judgement, varying depending on their perspective, and typically changes over time
- **Project management**: The "application of processes, methods, knowledge, skills, and experience to achieve the project objectives" (Association for Project Management 2018)
- **Value:** In ordinary conversation, a generic term that refers to the overall worth or usefulness of something. But in Lean, value is only meaningful "when expressed in terms of a specific product (a good or a service, and often both at once) which meets the customer's needs at a specific price at a specific time" (Womack and Jones 2003, 16). In other words, value is defined by the customer

Module 2: Strategy for Project Management

- **Capacity**: The "maximum level of output that a company can sustain to make a product or provide a service. Planning for capacity requires management to accept limitations on the production process. No system can operate at full capacity for a prolonged period; inefficiencies and delays make it impossible to reach a theoretical level of output over the long run" (Investopedia n.d.)
- **Exit champion**: A manager who is charged with advocating the end of a project if he or she thinks that is in the best interests of the organization, regardless of the desires of the project team members
- **Groupthink**: A type of cognitive bias that causes people to adopt a belief because a significant number of people already hold that belief
- **Operational effectiveness**: Any kind of practice which allows a business or other organization to maximize the use of their inputs by developing products at a faster pace than competitors or reducing defects, for example (BusinessDictionary.com)
- **Portfolio optimization**: The "difficult and iterative process of choosing and constantly monitoring what the organization commits to do" (Morgan, Levitt, & Malek, 2007, p. 167)
- **Portfolio**: The "array of investments in projects and programs a company chooses to pursue" (Morgan, Levitt and Malek 2007, 3)
- **Program**: "A cluster of interconnected projects" (Morgan, Levitt and Malek 2007, 9)
- **Project**: The "temporary initiatives that companies put into place alongside their ongoing operations to achieve specific goals. They are clearly defined packages of work, bound by deadlines and endowed with resources including budgets, people, and facilities" (Morgan, Levitt and Malek 2007, 3)
- **Project champion:** A project team member who serves as the project's chief advocate, especially during the early days of planning. The project champion often becomes the project manager, but not always
- **Satisfice**: A term devised by Nobel Prize winning economist Herbert Simon (by combining "satisfy" and "suffice") to describe a realistic form of decision-making, in which people accept "the 'good-enough' solution rather than searching indefinitely for the best solution" (Little 2011)
- **Set-based concurrent engineering**: An approach to project selection that relies on not filtering projects too quickly, but rather developing multiple solutions through to final selection just before launch. This approach is expensive and resource-hungry, but it is argued that the costs of delay by narrowing to a single solution too soon—which subsequently turns out not to be viable (or sub-optimal)—is greater than the resources expended on multiple, parallel developments
- **Strategy**: According to Merriam-Webster, "a careful plan or method for achieving a particular goal usually over a long period of time"

- **Sunk cost fallacy**: The tendency “to continue investing in a losing proposition because of what it’s already cost” (Warrell 2015)

Module 3: Project Initiation, Scope, and Structure

- **Business case**: An "argument, usually documented, that is intended to convince a decision maker to approve some kind of action. The document itself is sometimes referred to as a business case. As a rule, a business case has to articulate a clear path to an attractive return on investment (ROI). At its simplest, a business case could be a spoken suggestion…. For more complex issues, a business case should be presented in a carefully constructed document. A business case document should examine benefits and risks involved with both taking the action and, conversely, not taking the action. The conclusion should be a compelling argument for implementation" (TechTarget n.d.)
- **context**: According to Merriam-Webster, the "situation in which something happens: the group of conditions that exist where and when something happens"
- **Idea averaging**: Taking a little from one idea, and a little from another, and a little from another—without fully committing to any
- **Linear responsibility chart**: *See* RACI chart
- **Organizational breakdown structure (OBS)**: A description of the project team. It explains "who reports to whom, the details of the hierarchy, and the reporting structure…. Organizational breakdown structures are normally communicated visually through the use of graphs or charts. A project or general manager is listed and underneath the PM several divisions might be created, such as product development, design, materials management, and production" (Bradley n.d.). *See also* responsibility assignment matrix (RAM)*, below*
- **Planning bias**: The tendency to optimistically underestimate the amount of time required to complete a task
- **Project charter**: A "single, consolidated source of information" (Richter 2014) for project initiation and planning. It describes your current knowledge about the project and includes information such as the names of all stakeholders, a statement of your organization's needs, the history leading up to the project, the project's purpose, deliverables, and roles and responsibilities. A project charter is also sometimes called a project overview statement. It's sometimes helpful to think of the project charter as a contract between the project team and the project sponsors
- **Project initiation**: The early phase in which you lay the groundwork for the entire project
- **Project overview statement**: *See* project charter
- **Project scope**: All the work "that needs to be done to provide the product or service your project is delivering" (Martinez n.d.)
- **Responsibility assignment matrix (RAM)**: A type of organizational breakdown structure in the form of a grid that typically lists project tasks in the first column, and stakeholders across the top row, with tasks assigned to the various stakeholders. You can use it to determine if you have enough resources for a project, and to record who is responsible for what. See also *RACI chart*

- **RACI chart**: A type of responsibility assignment (RAM) matrix. Also known as a linear responsibility chart. The name “RACI” is an acronym of “responsible, accountable, consult, and inform”
- **Stakeholders**: The people who will be affected by or who can affect a project
- **Scope creep:** Uncontrolled changes to a project that occur with no corresponding authorized changes in budget and schedule
- **Scope statement**: A document that defines the project’s scope (or requirements)
- **Work breakdown structure (WBS:** A description of the tasks associated with project deliverables, often in the form of a tree diagram. A work breakdown structure “displays the relationship of each task to the other tasks, to the whole and the end product (goal or objective). It shows the allocation of responsibility, and identifies resources required and time available at each stage for project monitoring and management” (Business Dictionary n.d.)
- **Work package**: A “group of related tasks within a project. Because they look like projects themselves, they are often thought of as sub-projects within a larger project. Work packages are the smallest unit of work that a project can be broken down to when creating your Work Breakdown Structure (WBS)” (Wrike n.d.)

Module 4: Procurement

- **Contract**: According to Merriam-webster.com, “a binding agreement between two or more persons or parties.” A contract can take many forms, ranging from a submitted invoice (which can serve as a binding agreement) to 200 pages of legal language plus appendices
- **Cost-plus:** An agreement in which the contractor or seller “is reimbursed for all direct allowable costs (materials, labor, travel) plus an additional fee to cover overhead and profit. This fee is negotiated in advance and usually involves a percentage of the total costs” (Larson and Gray 2011, 452). In small projects, this arrangement is sometimes referred to as **time and materials**
- **DBOM (Design, Build, Operate, Maintain)**: A type of partnership in which a private organization builds a facility and operates it on behalf of the public for as long as 20 years. DBOM partnerships have been used since the mid-1980s to construct and operate waste-to-energy projects that transform trash into electrical power
- **DBOOM (Design, Build, Own, Operate, Maintain)**: A new variation on DBOM which makes it possible for public or private organizations to finance and operate huge undertakings like infrastructure, energy, or transportation projects
- **Fixed-price:** An agreement in which the contractor or seller “agrees to perform all work specified in the contract at a fixed price” (Larson and Gray 2011, 451)
- **Procurement**: The process of acquiring goods and services. Used to refer to a wide range of business activities
- **Proposal**: According to Merriam-webster.com, “something (such as a plan or suggestion) that is presented to a person or group of people to consider.” Depending on the nature of your company, this “something” might consist of little more than a few notes in an email, or it might incorporate months of research and documentation, costing hundreds of thousands of dollars to produce
- **Request for proposal (RFP)**: A “document that describes a project’s needs in a particular area and asks for proposed solutions (along with pricing, timing, and other details) from qualified vendors” (Peters 2011)
- **Service-level agreement (SLA)**: “A contract between a service provider and its internal or external customers that documents what services the provider will furnish and defines the performance standards the provider is obligated to meet” (TechTarget n.d.). An SLA is an example of a document that can be used to codify an agreement between an organization and external vendors (that is, an external contract), or between departments within an organization (that is, an internal contract)
- **Single-sourcing**: The practice of using one supplier for a particular product
- **Supply chain management**: According to the Council of Supply Chain Management Professionals, “the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities”

- **Sustainable procurement:** Procurement that emphasizes goods and services that minimize environmental impacts while also taking into account social considerations, such as eradicating poverty, reducing hazardous wastes, and protecting human rights (Kjöllerström 2008)
- **Total cost of ownership (TCO):** All the costs associated with owning a particular asset, throughout the lifetime of the asset

Module 5: Project Leadership - Team Formation and Management

- **Emergent leaders**: People who emerge as leaders in response to a particular set of circumstances
- **Emotional intelligence**: The ability to recognize your own feelings and the feelings of others
- **Physical distance**: The actual space between team members
- **Pre-mortem**: A meeting at the beginning of a project in which team members imagine that the project has already failed and then list the plausible reasons for its failure
- **Reliable promise**: A commitment to complete a task by an agreed-upon time. In order to make a reliable promise, you need to have the authority to make the promise and the competence to fulfill the promise. You also need to be honest and sincere in your commitment and be willing to correct the situation if you fail to keep the promise
- **Self-organizing team**: As defined in Agile, a "group of motivated individuals, who work together toward a goal, have the ability and authority to take decisions, and readily adapt to changing demands" (Mittal 2013)
- **Team**: A "small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable" (Katzenbach and Smith 1993, 45)
- **Virtual distance**: The "psychological distance created between people by an over-reliance on electronic communications" (Lojeski and Reilly 2008, xxii)

Module 6: Project Planning

- **Agile engineering:** A new form of product development that makes use of the iterative cycles of fast feedback and revisions first implemented in Agile software development. It encourages teams to learn about their product and make improvements faster than they could with traditional product development
- **Cognitive reframing**: The process of reconsidering events and facts to see them in a new way
- **Contingency plan**: A plan for an alternative route to project success that can be implemented if an obstacle to progress arises
- **Contingency fund**: Resources set aside to cover unanticipated costs
- **Plan**: A strategic framework for the scheduling and execution of a project. In traditional, geometric order project planning, a plan presumes events will unfold in a predictable way, with little need to update the plan. In living order project planning, the plan is always provisional and subject to change
- **Planning bias**: A cognitive bias that makes us think we can finish projects faster, and for less money, than is actually realistic
- **Project planning**: In traditional, geometric order project planning, the process of formulating the plan that will guide the rest of the project. In living order project planning, "project planning" also refers to the continuous process of incorporating new knowledge into the initial project plan
- **Pull planning**: Project planning that accounts for the unpredictable, ever-changing nature of the living order. Pull planners start at the desired end state of the project, working backwards to determine the most efficient (least wasteful) way to achieve the desired outcome. To be effective, pull planning requires a collaborative group of workers who coordinate regularly, updating their plan to reflect current conditions
- **Pull schedule**: A schedule typically consisting of color-coded sticky notes that can be removed or repositioned as necessary. This can also be replicated in a number of different software programs. The key is to start with the end goal and then work backwards to determine the tasks required to achieve that goal
- **Push planning**: Project planning that presumes events will unfold in a predictable, geometric order. Push planning is founded on management forecasts of customer demand, with great emphasis placed on the need to keep the parts of the plan moving forward. Managers and subcontractors focus on their individual portions of the project, with limited regard for managing workflow and preventing waste through collaboration and coordination
- **Supply chain management**: All the "activities that must take place to get the right product into the right consumer's hands in the right quantity and at the right time—from raw materials extraction to consumer purchase" (Mays Business School n.d.)

- **Waterfall model**: A push plan model used for software that breaks the development process into a set of discrete, sequential steps. It presumes a predictable project outcome, with little or no opportunity for adjustments as the project unfolds

Module 7: Project Scheduling

- **Activity:** "An element of work performed during the course of a project. An activity normally has an expected duration, an expected cost, and expected resource requirements" (Project-Management.com 2016). Beware that some organizations subdivide activities into tasks, while others use *task* and *activity* synonymously
- **Compress a schedule:** The process of taking a schedule you have already developed and reducing it without adjusting the project's scope
- **Cost:** "An expenditure, usually of money, for the purchase of goods or services" (Law 2016)
- **Crashing:** A schedule compression technique that involves adding resources such as overtime or more equipment to speed up the schedule. Because of the costs involved in adding resources, crashing is "the technique to use when fast tracking has not saved *enough* time on the project schedule. With this technique, resources are added to the project for the least cost possible" (Monnappa 2017)
- **Critical path**: The "series of activities which determines the earliest completion of the project" (Project-Management.com 2016)
- **Duration:** "The time needed to complete an activity, path, or project" (Larson and Gray 2011, 659)
- **Fast tracking:** A schedule compression technique in which "activities that would have been performed sequentially using the original schedule are performed in parallel. In other words, fast tracking a project means the activities are worked on simultaneously instead of waiting for each piece to be completed separately. But fast tracking can only be applied if the activities in question can actually be overlapped" (Monnappa 2017)
- **Float:** See *slack*
- **Last Planner System (LPS):** A proprietary production planning system that exemplifies living order concepts and pull thinking; developed by Glenn Ballard and Greg Howell as a practical implementaion of Lean principles
- **Last responsible moment:** "The instant in which the cost of the delay of a decision surpasses the benefit of delay; or the moment when failing to make a decision eliminates an important alternative" (Lean Construction Institute)
- **Milestone:** "A significant event in the project; usually completion of a major deliverable" (State of Michigan: Department of Technology, Management & Budget)
- **Path: "**A sequence of connected activities" (Larson and Gray 2011, 662)
- **Reliable promise**: In Lean and the Last Planner System, a formal commitments between team members. As defined by the Lean Construction Institute, "A promise made by a performer only after self-assuring that the promisor (1) is competent or has access to the competence (both skill and wherewithal), (2) has estimated the amount of time the task will take, (3) has blocked all time needed to perform, (4) is freely committing and is not privately doubting ability to achieve

the outcome, and (5) is prepared to accept any upset that may result from failure to deliver as promised" (Lean Construction Institute n.d.)

- **resource:** "Any personnel, material, or equipment required for the performance of an activity" (Project-Management.com 2016)
- **Schedule**: A specific, time-based map designed to help the project team get from the current state to successful project completion. A schedule should build value, have an efficient flow, and be driven by pull forces
- **Slack**: "Calculated time span during which an event has to occur within the logical and imposed constraints of the network, without affecting the total project duration" (Project-Management.com 2016). Or put more simply, slack, which is also called *float,* is the "amount of time that a task can be delayed without causing a delay" to subsequent tasks or the project's ultimate completion date (Santiago and Magallon 2009)
- **Sprint**: In Agile project management, a brief (typically two-week) iterative cycle focused on producing an identified working deliverable (e.g., a segment of working code)
- **Task:** *See* activity

Module 9: Project Risk Management

- **Black swan event:** Term used by Nassim Nicholas Taleb in his book *Black Swan: The Impact of the Highly Improbable* to refer to the most extreme form of externality. According to Taleb, a black swan event has the following characteristics: it is an outlier, unlike anything that has happened in the past; it has an extreme impact; and, after it occurs, people are inclined to generate a rationale for it that makes it seem predictable after all (2010, xxii)
- **Contingency planning**: The development of alternative plans that can be deployed if certain risks are realized (e.g., parts from a supplier do not meet quality requirements)
- **Ethics**: According to Merriam-Webster, a "set of moral principles: a theory or system of moral values"
- **Integrated Project Delivery**: A Lean-oriented contractual arrangement that emphasizes collaboration among all participants from the very earliest stages of the project, and that encourages participants to help solve each other's problems, taking a proactive approach to risk (Thomack 2018)
- **Issue**: A known concern, something a team will definitely have to address. Compare to a risk, which is caused by external factors that the project team cannot fully identify
- **Monetize risk**: To assign a dollar value to the potential impact of risks facing a project. Monetizing risks gives outcomes "real economic value when the effects might otherwise be ignored" (Viscusi 2005). Once you've monetized a project's risks, you can rank them and make decisions about which deserves your most urgent attention. You can also evaluate the cost-effectiveness of steps required to reduce risk. Every industry has its own calculations for monetizing risks, although it is unethical in some industries, especially where public safety is concerned
- **Monte Carlo simulation**: "A mathematical technique that generates random variables for modelling risk or uncertainty of a certain system. The random variables or inputs are modeled on the basis of probability distributions such as normal, log normal, etc. Different iterations or simulations are run for generating paths and the outcome is arrived at by using suitable numerical computations" (The Economic Times n.d.)
- **Proactive concurrency**: Intentionally developing an awareness of options that can be employed in case you run into problems with your original plan
- **Risk**: The probability that something bad will happen times the consequences if it does. The likelihood of a risk being realized is typically represented as a probability value from 0 to 1, with 0 indicating that the risk does not exist, and 1 indicating that the risk is absolutely certain to occur
- **Risk management**: "The process of identifying, quantifying, and managing the risks that an organization faces" (Financial Times)
- **Risk matrix**: A risk management tool in which the probability of the risk is multiplied by the severity of consequences if the risk does indeed materialize

- **Tolerable risk**: The risk you are willing to live with in order to enjoy certain benefits
- **Threat**: A potential hazard that could affect a project. A threat is not, in itself, a risk. A risk is the *probability* that the threat will be realized, multiplied times the consequences
- **Value of a statistical life**: An "estimate of the amount of money the public is willing to spend to reduce risk enough to save one life" (Craven McGinty 2016)

Module 10: Managing Project Value, Budgets, and Costs

- **Bottom-up estimate**: **"**Detailed cost estimate for a project, computed by estimating the cost of every activity in a work breakdown structure, summing these estimates, and adding appropriate overheads" (Business Dictionary n.d.). A bottom-up estimator starts by dividing the project up into tasks, then estimates a cost for each task, and sums the total costs for all the project tasks
- **Budget**: The funds that have been allocated for a project
- **Contingency fund**: A financial reserve that is allocated for identified risks that are accepted and for which contingent or mitigating responses are developed. Contingency funds are also often available to pay for an agreed-upon scope change
- **Cost**: "An expenditure, usually of money, for the purchase of goods or services" (Law 2016). Note that, like all terms, the meaning of "cost" varies somewhat from industry to industry. For example, in product development, the term has three specific meanings: 1) cost to create the product or project; 2) cost to establish a manufacturing cell capable of producing the product; and 3) cost of the final good or service to the market
- **Direct costs**: "An expense that can be traced directly to (or identified with) a specific cost center or cost object such as a department, process, or product" (Business Dictionary n.d.). Examples of direct costs include labor, materials, and equipment. A direct cost changes proportionately as more work is accomplished
- **Direct project overhead costs**: Costs that are directly tied to specific resources in the organization that are being used in the project. Examples include the cost of lighting, heating, and cleaning the space where the project team works. Overhead does not vary with project work, so it is often considered a fixed cost
- **Estimate**: An assessment of the likely budget for a project. An estimate involves counting and costing and is based on ranges and probabilities. Throughout a project, managers and team members are asked to estimate remaining work, cost at completion, and required remaining time. An estimate is a forward projection, using what is known, to identify, as best as possible, the required effort, time, and/or cost for part or all of a project
- **General and Administrative (G&A) overhead costs**: The "indirect costs of running a business, such as IT support, accounting, and marketing" (Investing Answers n.d.)
- **Iterative estimating**: A combination of top-down and bottom-up estimating, which involves constant refinement of the original estimate by taking into account information typically used in a top-down estimate (such as past history of similar projects) and increasingly detailed information generated by bottom-up estimating
- **Parametric estimating**: A way to use experience from parts of other projects to come up with estimates for work packages that are similar to past work but not the same
- **Phase estimating**: A type of iterative estimating that is "used when the project is large or lengthy or is developing something new or untried for the organization. In phased estimates, the near-term work is estimated with a high level of accuracy ±5 – 15% whereas future work is

estimated at a high level with ±35% accuracy" (Goodrich n.d.). As the project advances through major phases, the budget for subsequent phases is intentionally reviewed and refined in light of knowledge gained to date

- **Price**: **"**A value that will purchase a finite quantity, weight, or other measure of a good or service" (Business Dictionary)
- **Project Variation Request (PVR)**: *See* Scope Change Request
- **Scope Change Request**: A document that describes a proposed scope change, including its potential benefits and the consequences of not implementing the change. A Scope Change Request must be signed by all affected stakeholders prior to implementing a scope change. Also known as a Project Variation Request (PVR)
- **Scope creep**: Changes to a project's scope without any corresponding changes to the schedule or cost. The term is typically applied to changes that were unapproved or lacked sufficient knowledge about the project and potential assessment of risks and costs when they were approved. Simply put, scope creep is unmanaged change
- **Scope evolution**: An alteration to the project scope that occurs as the project participants learn more about the project. Scope evolution results in an official change in the project scope, and therefore to the project budget or schedule, as agreed to by all project participants. In other words, scope evolution is managed change
- **Target value**: The output stakeholders want the project to generate
- **Target-value design**: A design process that focuses on value as defined by the customer, with the project's overall design involving stakeholder engagement and collaboration
- **Top-down estimates**—Estimates that "usually are derived from someone who uses experience and or information to determine the project duration and total cost. However, these estimates are sometimes made by top managers who have very little knowledge of the component activities used to complete the project" (Larson and Gray, 134). A top-down estimator generates a total for the entire project and then divides up that total among the various project tasks
- **Value**: "The inherent worth of a product as judged by the customer and reflected in its selling price and market demand" (Lean Enterprise Institute 2014)

Module 11: Managing Limited Resources

- **Fixed resource**: A resource that "remains unchanged as output increases" (Reference n.d.)
- **Over-allocation**: A resource allocation error that occurs when more work is assigned to a resource than can be completed within a particular time period, given that resource's availability
- **Over-commitment**: A resource allocation error that occurs when a task takes longer than expected, tying up the resource longer than originally scheduled
- **Proactive resilience**: Taking timely action to prevent a crisis, often by introducing a change that upends the usual way of doing things at an organization (Laufer, et al. 2018, 56)
- **Resource allocation**: The "process of assigning and managing assets in a manner that supports an organization's strategic goals" (Rouse n.d.). On the project level, resource allocation still involves making choices that support the organization's strategic goals, but you also have to factor in your project's more specific goals
- **Resource capacity management**: The practice of "planning your workforce and building a skill inventory in exact proportion to the demand you foresee. It lets you optimize productivity and as a concept perfectly complements the Agile methodology" (Gupta 2017)
- **Resource leveling:** An approach to project scheduling that aims to avoid over-allocation of resources by setting start and end dates according to the "availability of internal and external resources" (ITtoolkit n.d.)
- **Resource management:** *See* resource allocation
- **Resource parsimony:** "Deploying the fewest resources necessary to achieve the desired results" (Gibbert, Hoegl and Välikangas 2007)
- **Resource smoothing: "**A scheduling calculation that involves utilizing float or increasing or decreasing the resources required for specific activities, such that any peaks and troughs of resource usage are smoothed out. This does not affect the overall duration" *(Association for Project Management n.d.)*
- **Triple bottom line (TBL)—** Term introduced by John Elkington as a way to broaden corporate thinking about the cost of doing business to include social and environmental responsibilities. He argued that rather than focusing solely on profit and loss, organizations should pay attention to three separate bottom lines: profit, people, and the planet. "It aims to measure the financial, social and environmental performance of the corporation over a period of time. Only a company that produces a TBL is taking account of the full cost involved in doing business" (The Economist 2009)
- **Variable resource**: A resource that changes "in tandem with output" (Reference n.d.)

Module 12: Project Monitoring, Analytics, and Control

- **Active control**: A focused form of project control that involves the following: 1) controlling what you can by making sure you understand what's important, taking meaningful measurements, and building an effective team focused on project success; and 2) adapting to what you can't control through early detection and proactive intervention
- **Compliance program**: A formalized program designed to ensure that an organization and its employees adhere to government regulations, follow all other laws, and behave ethically
- **Controlling**: In the monitoring and controlling phase of project management, the process of making changes in response to data generated by monitoring tools and methods to avoid missing major milestones
- **Earned value management (EVM)**: An effective method of measuring past project performance and predicting future performance by calculating variances between the planned value of a project at a particular point and the actual value
- **Informed intuition**: A combination of information and instinctive understanding. You develop informed intuition through experience and by constantly learning about your individual projects, your teammates, your organization, and your industry
- **Key performance indicator (KPI)**: A metric associated with a specific target (Gonzalez)
- **Linearity bias**—A cognitive bias that causes people to perceive direct, linear relationships between things that actually have more complex connections
- **Managing by walking around**—A management style that emphasizes unplanned encounters with team members, and spontaneous, informal reviews of equipment and ongoing work
- **Monitoring**: In the monitoring and controlling phase of project management, the process of collecting progress data and sharing it with the people who need to see it in a way that allows them to understand and respond to it
- **Monitoring and controlling**: The process of reconciling "projected performance stated in your planning documentation with your team's actual performance" and making changes where necessary to get your project back on track (Peterman 2016). Monitoring and controlling occurs simultaneously with execution

Module 13: Improving Project Performance - Project Reviews

- **Audit**: A deep investigation into any or all aspects of a project, with the aim of enabling stakeholders to make fully informed decisions about the project's future. An audit can provide a focused, objective review of part or all of a project
- **Audit report**: A report created at the end of an audit that typically contains an explanation of the context of the audit, including the overall focus or any important issues; an analysis of data, interviews, and related research compiled during the audit; action-oriented recommendations; and, in some cases, lessons learned and possibly one or more supporting appendices
- **Change management**: "Minimizing resistance to organizational changes through the involvement of key players and stakeholders" (Business Dictionary n.d.)
- **Close-out meeting**: An opportunity to end a project the way you started it—by getting the team together. During this important event, the team should review what went well, what didn't go well, and identify areas for improvement. All of this should be summarized in the final close-out report. A final close-out meeting with the customer is also essential. This allows the organization to formally complete the project and lay the groundwork for potential future work
- **Close-out report**: A final summary of project performance. It should include a summary of the project and deliverables; data on performance related to schedule, cost, and quality; a summary of the final product, service, or project and how it supports the organization's business goals; risks encountered and how they were mitigated; and lessons learned
- **genchi genbutsu**: A key principle of the famously Lean Toyota Production System, which means "go and see for yourself." In other words, if you really want to know what's going on in a project, you need to actually go to where your team is working, and then watch and listen
- **Project audit/review**: An inquiry into any or all aspects of a project, with the goal of learning specific information about the project
- **Project closure**: According to most project management publications, the final phase of a project. However, in the broader, living order vision of a project's life cycle, project closure often merely marks the end of one stage and the transition to another stage of the project's overall life cycle—although exactly where your work falls in the project's lifecycle depends on your perspective as to what constitutes "the project" in the first place
- **Recovery manager**: Term used by Todd C. Williams in *Rescue the Problem Project* to refer to a consultant brought in from the outside to audit a failing project, and, if possible, get it back on the path to success (17-19)
- **Strategic inflection point**: As defined by Andrew Grove, CEO of Intel from 1997 to 2005, "a time in the life of a business when its fundamentals are about to change. That change can mean an opportunity to rise to new heights. But it may just as likely signal the beginning of the end" (1999, 3). A strategic inflection point in an individual project is a time in the life of a project when its fundamentals are about to change

- **Project auditor**: The person responsible for leading an audit or review. Ideally, the project auditor is an outsider who is perceived by all project stakeholders to be fair and objective. He or she should have excellent listening skills and broad-base knowledge of the organization or industry

Module 14: Critical Project Management Skill – Negotiation

- **Arbitration**: A dispute-resolution method in which the disputing parties agree to let a neutral third party make a final decision
- **Consensus building:** A "conflict-resolution process used mainly to settle complex, multiparty disputes" (Burgess and Spangler 2003)
- **Core concerns**: According to Roger Fisher and Daniel Shapiro, "human wants that are important to almost everyone in virtually every negotiation. They are often unspoken but are no less real than our tangible interests" (2005, 14). Fisher and Shapiro focus on the following five core concerns: appreciation, affiliation, autonomy, status, and role
- **Dispute resolution**: A "process for resolving differences between two or more parties or groups" (Business Dictionary n.d.)
- **Information–based bargaining**: An effective type of negotiation described by G. Richard Shell in his book *Bargaining for Advantage*, which focuses on "three main aspects of negotiation: solid planning and preparation before you start, careful listening so you can find out what the other side really wants, and attending to the 'signals' the other party sends through his or her conduct once bargaining gets under way" (Shell 2006, xviii-xix)
- **Mediation**: A dispute resolution process in which a neutral third party helps "disputants come to consensus on their own" (Program on Negotiation: Harvard Law School 2018)
- **Negotiation**: A discussion with the goal of reaching an agreement that is moderately satisfying to both parties. Nobody gets everything they want in a successful negotiation, but everybody gets something. Perhaps most importantly, a wisely conducted negotiation ensures that the parties can continue to work together in the future
- **Positional bargaining**: An inefficient form of negotiation in which opposing parties take up positions and defend them, making only small concessions when forced to do so

Module 15: Personal and Organizational Project Management Growth

- **Capability Maturity Model (CMM)**—The first widely used maturity model, developed in the software industry in the late 1980's by the Software Engineering Institute (SEI) at Carnegie Mellon University and the United States Department of Defense
- **Knowledge management**: The "planning, organizing, motivating, and controlling of people, processes, and systems in the organization to ensure that its knowledge-related assets are improved and effectively employed" (King 2009)
- **Learning**: "Increasing one's capacity to take effective action" (Kim 1993)
- **Learning organization**: According to David A. Garvin, "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights" (1993)
- **Mindfulness**: A state of nonjudgmental awareness
- **Organizational learning**: The process of retaining, storing, and sharing knowledge within an organization. More than merely the sum of the knowledge of all the members of the organization, achieving organizational knowledge "requires systematic integration and collective interpretation of new knowledge that leads to collective action and involves risk taking as experimentation" (Business Dictionary)
- **Organizational Project Management Maturity Model (OPM3)**: The most widely recognized maturity model, developed by the Project Management Institute. The OPM3 is designed to help an organization support its organizational strategy from the project level on up through the portfolio and program levels
- **Project management maturity**: The "progressive development of an enterprise-wide project management approach, methodology, strategy, and decision-making process. The appropriate level of maturity will vary for each organization based on its specific goals, strategies, resource capabilities, scope, and needs" (PMSolutions 2012)
- **Project maturity model**: A set of developmental stages that can be used to evaluate an organization's state of maturity in a particular domain

Module 16: Putting All the Pieces Together

- **Event-driven:** Term used to describe a project that unfolds in response to changing events
- **Intention-driven**: Term used to describe a project that unfolds according to the single-minded intention of the project manager
- **Internet of things (IoT)**: The "system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction" (TechTarget n.d.)
- **Professional development plan (PDP)**: A document that describes 1) your current standing in your field, including a brutally honest assessment of your strengths and weaknesses; 2) your short- and long-term career goals; and 3) a plan for achieving your goals that includes specific deadlines