

## Note

Both *concepts* and *terms* — i.e. the words that express the concepts — evolve across time, space, and cultures. For instance, for some people ‘goal’ is more specific than ‘objective’, while for others it is the other way around. This reference list is compiled expressly for *Systems Planning*<sup>SM</sup>, sourced mainly from two classic books (Perdicoulis, 2010, 2011) and the *ETYMOS* journal.

A · B · C · D · E · F · G · H · I · J · K · L · M · N · O · P · Q · R · S · T · U · V · W · X · Y · Z

## A

- ACCURACY** (from *ad-* [L], towards + *cura* [L], care, meaning) The quality of being correct, due to adequate ‘care’; objective correctness, ‘to the point’, at the right value; in the context of measurement, associated with systematic error (Perdicoulis, 2012e); in the context of argument, associated with factuality (Perdicoulis, 2014).
- ACTION** (from *agere* [L], to act, to do; originally from *ἀγρεν* [Gk], to drive, conduct — *cf.* strategy, pedagogy, demagogy) The fact of doing something, typically to achieve an aim or objective.
- ACTIVITY** (etymology: same as ‘Action’) Condition when things are ‘happening’ or ‘being done’; can be attributed to various actors, including humans and nature.
- AD LIBITUM** ([L], meaning ‘according to pleasure’) Indicates freedom, usually with reference to conducting an action — that is, one does as one wishes or pleases.
- ADMINISTRATION** (from *ad* [L], to + *ministrare* [L], to wait upon; see also ‘Minister’) The process or activity of governing (or ‘running’) an organisation; synonym of ‘Governance’ and ‘Management’; also, the people responsible for this function; synonym of ‘Government’ and ‘Management’.
- AIM** (n.) (from *aestimare* [L], to estimate, assess) A general intended outcome; an intention; a synonym of ‘objective’, as something we wish to achieve, but more general or abstract; also, the direction at which we look.
- ANALYSIS** (from *ανάλυσις* [Gk], again, from the beginning + *λύσις* [Gk], solution, loosening) Decomposition of something complex ‘back into its constituents’. Analysis is typically concerned about the visible or otherwise perceptible constituents of the whole, often giving little or no importance to what keeps them together or how they relate to each other.
- ANTHOLOGY** A collection of carefully selected items, usually in the context of literature or music — originally denoted a collection of the ‘flowers’ (*ἀνθός* [Gk], flower) of literature.
- ASSESSMENT** Determine the importance, size, or value of something; set a value on real or personal property, usually for purposes of taxation; from Latin *assidere*, sit beside, assist [in the office of a judge].
- AUTHORITY** (from *autor* [L], originator, proposer, promoter) The acknowledged right (or power) to make decisions, give executive orders, and observe compliance.

## B

- BACKCASTING** A technique used to discover the action in a planning operation. Contrary to forecasting, which starts with a given state and actions and aims to predict the future in terms of outcomes, backcasting defines a desired or envisioned future state and seeks the action that is capable of reaching that state (optionally considering the given initial state).
- BRAINSTORMING** A technique that captures an unrestricted flow of keywords in search of novel and unusual ideas, either in personal or group applications. While brainstorming typically seeks to answer questions, it can also be used to ask questions in a sequential exploratory manner.
- BROWNFIELD** Urban site for potential building development, which has had previous industrial or commercial development on it, and may be facing issues of environmental contamination; often appears as the opposite of ‘greenfield’.

## C

- CAUSALITY** The relationship between causes and effects; sometimes the same notion appears as ‘causation’, especially in older texts, but ‘causation’ is closer to ‘causing an action’ rather than indicating a relationship.
- CAUSAL DIAGRAM** An explicit mental model that represents cause-and-effect relationships, typically in the form of directed graphs (with nodes and edges).
- COMPATIBILITY MATRIX** A technique that duplicates the elements of a set (such as intended outcomes or proposed actions) in a two-dimensional grid, so that the operator can have enough detail to determine whether or not each of these elements is compatible with the rest.
- COMPLEX** (from *con* [L], together + *plexus* [L], interwoven — from *πλέξεν* [Gk], to braid, twine) Consisting of many connected parts.
- COMPLICATED** (from *con* [L], together + *plicare* [L], to fold — *cf.* pleat) A particular aspect of complexity, when some parts of the whole are obscured by others.
- CONCEPT MAP** A technique that organises and represents knowledge in the form of tree diagrams, featuring concepts as nodes (boxes or circles) and their relationships as labelled arrows — for instance, ‘is’, ‘needs’, or other simple phrases.
- CONCILIATION** A technique similar to mediation, but with a ‘counselling’ or advisory function. Conciliators possess expert knowledge of the domain in which they conciliate, and often make suggestions for settlement terms and can give advice on the subject matter. Conciliators may also use their role to actively encourage the parties to come to a resolution.
- CONCISE PROCESS DIAGRAMS** (CPD) *Systems Planning*<sup>SM</sup> diagrams that represent processes with minimal information (i.e. states and action) from a relatively abstract point of view (i.e. the whole project); complemented by Extended process diagrams (EPD) and Personalised process diagrams (PPD).
- CORPORATION** (from *corpus* [L], body) A large company or group of companies authorised to act as a single entity, legally recognised for the purpose.
- COST-BENEFIT ANALYSIS** (CBA) An umbrella term for techniques that juxtapose the pros and contras of projects in financial terms, featuring various numerical operations.
- CRITERION** (plural: criteria; *κρίσις* [Gk], judgement) A reference by which we can make a comparison, and then upon that comparison issue a judgement — whether objectively, such as ‘smaller’, or subjectively, such as ‘better’.

## D

- DECISION** (from Latin *de-*, off, and *caedere*, to cut) Conclusion or resolution reached after consideration; choice — and fixing of that choice — made after thinking and talking about what is the best thing to do.
- DEDUCTION** The creation of particular statements from general laws, principles, or statements — i.e. the opposite of specificity.
- DESCRIPTIVE CAUSAL DIAGRAMS** (DCD) *Systems Planning*<sup>SM</sup> diagrams that represent causal mental models and reasoning (e.g. plans, policies) with *committed* changes (e.g. ‘increase’, ‘decrease’) — i.e. as opposed to Reverse blueprints (RBP).
- DEVELOPMENT** A specified state of growth or advancement, or the process of reaching that state; the word has a common root with ‘envelope’ (of unknown origin); development can be used with ‘pre-programmed’ systems, such as living organisms (that is, with their development encoded in the DNA), but not with non-living systems such as the Earth. In spatial planning, development is commonly in strict association with the change of land use.
- DIAGNOSTIC** (from *διαγνωστική τέχνη* [Gk], the art of distinguishing) A statement that recognises or defines an ailment (chiefly used in the human health context). The diagnostic represents a ‘package’ of information, not confined to the observation or symptoms, but often implies the causes and even the cure or remedy.
- DIAGRAM** A simplified drawing or schematic representation of an object (or situation), showing its appearance, structure, or function — for instance, process diagram, causal diagram, graphs. Some types of ‘maps’ are diagrams — for instance, mind maps, concept maps.
- DIOCESE** (from *διοκεν* [Gk], to keep house, administer) A district under the care of a bishop; the administration of a military unit; *cf.* ‘Precinct’.
- DYNAMICS** (from *δύναμις* [Gk], force) Relationships between entities, in a way that one ‘forces’ the other to behave in a certain way — for instance, to stimulate growth, development, or change in general.

## E

- EIA** (Environmental Impact Assessment) Process that identifies, forecasts, evaluates, and suggests mitigation of the (biophysical, social, and other relevant) effects of development proposals prior to major decisions being taken and commitments made.
- EFFECTIVENESS** (from *ex-* [L], out, thoroughly + *facere* [L], to do, to make) The degree to which an effort is successful in producing an intended outcome; typically attributed to the whole operation (Z to Z’).
- EFFICACY** The ability to produce an intended outcome; typically attributed to the action (X to Z’).
- EFFICIENCY** The state or quality of being efficient — i.e. achieving the best outcome with the least resources (e.g. time, money, materials, work); typically attributed to the whole operation (Z, Z’, and the resources associated with X).
- EXACTNESS** (from *ex-* [L], thoroughly + *agere* [L], to act, perform) High performance, reliability, certainty; typically incorporates both *accuracy* and *precision* (Perdicoulis, 2014).
- EXPERT** A person who has a comprehensive and authoritative knowledge and/ or skill in a particular field of study or professional practice. Synonyms are ‘specialist’, the more informal ‘guru’, as well as the wider scope ‘wise’, ‘sage’, or *σοφός* [Gk]. The opposite of an ‘expert’ is a ‘novice’, who is a beginner in the field of interest, or a ‘layperson’, who has no knowledge in the field of interest — although an expert in one field may be a layperson in another.
- EXPOSITORY WRITING** A formal writing technique common in technical and scientific writing, which presents the subject very clearly without great dependency on external sources.
- EXTENDED PROCESS DIAGRAMS** (EPD) *Systems Planning*<sup>SM</sup> diagrams that represent processes with more detailed information than CPDs — i.e. equivalent to *procedures*.
- EXTRAPOLATION** A forecasting technique, extending the range of known data into an unknown situation (generally with regards to time — that is, in the future), under the assumption that all conditions will remain the same as for the original data.

## F

- FUTURES** (pl.) Finance contracts for assets (especially commodities or shares) bought at agreed prices but delivered and paid for later.

## G

- GOAL** A desired achievement. Goals are usually expressed in more concrete terms than objectives, so they describe the specific and often measurable results (or outcomes) the organisation intends to achieve.
- GOVERNANCE** (from *κυβερνεῖν* [Gk], to steer) The act or responsibility of conducting the affairs of an organisation with competence and authority; synonym of ‘Administration’ and ‘Management’; derivatives: ‘Government’, as the people responsible for governance.
- GRAPH** (a) A diagram showing the relation between variable quantities (typically two), measured along an orthogonal set of coordinates (which are also known as ‘Cartesian’, after René Descartes); (b) A diagram showing the relationship of nodes and edges, typically in arbitrary space — that is, without a coordinate system of reference.
- GREENFIELD** Area of land that has not yet had buildings on it, but which is being considered for commercial development; often used as the opposite of ‘brownfield’.
- HEURISTICS** (from *ευρίσκειν* [Gk], to find) Type of techniques that enable a person to discover or learn something for themselves, often by trial and error or by rules that are only loosely defined.

## I

- INDEX** (pl. indices — from *in* [L] towards + *dicere* [L], to say) A composite expression with a dimensional value (often unit-less), reflecting the status of a complex object or situation. Indices typically combine a number of parameters, thus funneling a number of dimensions of complexity into a single dimension. Indices are often mathematical combinations of indicators, and may be objective (simply combining facts) or subjective (for instance, incorporating comparisons to values of reference).
- INDICATOR** (from *in* [L] towards + *dicere* [L], to make known, or *dicere* [L], to say) A quantifiable — and preferably measurable — parameter of a complex object or situation, typically reflecting one dimension of its status. Indicators can be combined to form indices.
- INDUCTION** The creation of a general statement from particular instances; it is a synonym for ‘generalisation’.
- INSIGHT** Accurate and deep understanding, in the sense of ‘inner sight’ or wisdom.

## J

- JUDGEMENT** A considered or thoughtful decision, or a sensible conclusion such as a classification, made against some reference criteria — for instance, preferences or laws.

## M

- MANAGEMENT** (from *manus* [L], hand; originally in the sense ‘to put [a horse] through the paces of the manège’ — an enclosed area in which horses and riders are trained) The responsibility for and control of a company or organisation; also, the people responsible for this function; synonym of ‘Administration’ and ‘Governance’; archaic: trickery, deceit, in the sense of *manipulation*.
- MEDIATION** A technique of resolving disagreement or disputes, typically between two parties, in which a third, independent party is involved to structure the meetings and help the parties come to consensus or agreement. In mediation this third party maintains neutrality.
- MENTAL MODELS** Thematic cognitive generalisations based on understanding and knowledge, but also containing assumptions and generalisations; they influence how we see and understand the world, as well as how we reach conclusions and take action.
- META-DATA** Literally, ‘data about data’. If ‘data’ represents facts such as greenhouse gas emissions, then ‘meta-data’ refers to the location of the measurements, frequency of sampling, sampling method, etc.
- METHOD** (from *μετά* [Gk] + *οδός* [Gk], which means ‘returning to the [known] path’ or ‘marking the path [for finding it again]’) An established procedure for doing something within a known context; *cf.* ‘Strategy’.
- METHODOLOGY** (a) A set of [alternative] methods used in an area of activity (e.g. research, praxis); (b) in-depth presentation [and discussion] of the selected method in a particular operation (e.g. research project).
- MINISTER** (from *ministrare* [L], to wait upon; from *minister* [L], servant; from *minus* [L], less) A person acting under the authority of another (*cf.* *πρόεδρος* [Gk], servant); member of the clergy.
- MISSION** (from *mittere* [L], to send) A transitory sense of being, such as an assignment, or a permanent sense of being, such as a *raison d’être*.

## N

- NARRATIVE** (n.) A communication technique presenting a sequence of events. It is a synonym of ‘storytelling’.

## O

- OBJECTIVE** (n.) A desired outcome in general terms; it can be specified further (see ‘Goal’ and ‘Target’).
- OPERATION** (from *operari* [L], to expend labour [L], to do) *cf.* *opus/opera* [L], work(-s) A managed process (alternatively, an organised activity) with a defined protocol of conduct (see also ‘Method’ and ‘Procedure’).
- ORGANIGRAM** (procedure) Organigram or organisation chart) Hierarchical representation of the roles and the relationships between them, often with reference to people’s names.
- ORGANISATION** (from *όργανον* [Gk], tool, instrument) An articulated group of people with a common mission — e.g. a public institution or a private enterprise.

## P

- PARAMETER** Something that can be measured or estimated (formally, a quantity), whose value can be registered for one or more purposes.
- PERFORMANCE** (from *par* [F], through, to completion + *fournir* [F], to furnish, provide) The degree of accomplishment of a simple task or a more complex operation; typically refers to the achieved outcomes, which often overshadow the efforts made behind the scenes; it is *also* the main interest in competitive environments; in such cases it is synonymous with *effectiveness*; considering resource requirements (e.g. time, money, materials, work), then performance becomes synonymous with *efficiency*.
- PERSONALISED PROCESS DIAGRAMS** (PPD) *Systems Planning*<sup>SM</sup> diagrams that represent procedures (i.e. EPDs), but from a *personal* point of view (i.e. different for each actor). *Partiure* PPDs are intended for the team members, while *ligature* PPDs are intended for the project manager.
- PERT CHART** (Project Evaluation and Review Technique) An optimisation technique for complex operations that feature multiple and often overlapping tasks. It often builds on the information of a Gantt chart.
- PLAN** Action proposal at the second highest tier of strategy, between policy and programme; also a generic form to express ‘what to do’ (for a particular, yet often implicit purpose).
- PLANNING** The operation of preparing for the future; the procedure varies in protocol and degrees of complexity and rigour; the ‘spatial’ version has a strong interest in actions regarding the organisation of space, including the built and the natural environment.
- POLICY** Action proposal at the highest tier, often in the form of guidance or principles about action (from old French *police*, civil administration, via Latin from *πόλις* [Gk], city). Alternatively, an insurance contract (from French *police*, bill of lading, contract of insurance, from *apodixis* [L], originally *αποδείξις* [Gk], evidence, proof).
- PRECINCT** (from *prae* [L], before + *cingere* [L], to gird, to encircle) A clearly defined area of ground around a cathedral, church, or college; *cf.* ‘Diocese’.
- PRECISION** (from *prae* [L], before + *caedere* [L], to cut) The quality of giving a ‘clear cut’ value; in the context of measurement, associated with low random error (Perdicoulis, 2012e); in the context of argument, associated with coherence and/ or appropriate resolution (Perdicoulis, 2014).
- PROBLEM** (*πρόβλημα* [Gk] — from *πρό* [Gk], forward + *βάλειν* [Gk], to throw, as in ‘ballistics’) A question thrown forward for contemplation and/ or academic discussion (*cf.* ‘Project’); the original idea about ‘problems’ was that if someone threw a question forward, then someone else might answer it.
- PROCEDURE** (from *pro* [L], forth + *cedere* [L], to go) A specified, particular, established, or official way of carrying out an activity or operation; synonym of ‘Method’ — see also ‘EPD’ and ‘PPD’.
- PROCESS** (etymology: same as ‘Procedure’) A sequence of actions and states — see also ‘CPD’.
- PROGRAMME** (from *πρό* [Gk], before + *γράφειν* [Gk], to write) Technically, a document published before its contents are implemented, as opposed to an *ex post* documentation such as a logbook. In planning, programme denotes an action proposal at the lower tier of strategy, and one tier above the operational level.
- PROJECT** (from *pro* [L], forth + *iacere* [L], to throw) An individual or collaborative undertaking that is carefully prepared to achieve a particular purpose (*cf.* ‘Problem’); action at the operational (or tactic) level; it may arise from strategic tiers (top-down approach), or may be conceived before them (bottom-up approach).
- PROTOCOL** (from *πρότος* [Gk], first + *κόλλα* [Gk], glue, denoting a first page or a flyleaf in a volume incrementally compiled by loose documents, which serves as an index to mark their order or location) An established or official way for carrying out scientific experiments, medical treatments, formal meetings, etc.

## Q

- QUALITY** (*ποιότης* [Gk]) Inherent property of substance (i.e. ‘how things are’) that may exist in varying degrees (e.g. ‘whiter’, ‘warmer’). Quality can be analysed and described or measured, but becomes subjective when associated with ‘goodness’ (e.g. ‘good boxer’ or ‘good runner’).

## R

- RATIONAL** Using reason or logic in thinking out a problem; in accordance with the principles of logic or reason.
- REASON** The faculty of rational argument, deduction, judgment, etc.; the power of comprehending, inferring, or thinking especially in orderly (rational) ways.
- REGIME** (from *regere* [L], to rule) An identifiable type or style of governance.
- RETURN ON INVESTMENT** (ROI) A financial index representing the benefit to the investor along time; the calculations table is accompanied by a corresponding graph that demonstrates evolution over several years.
- REVERSE BLUEPRINTS** (RBP) *Systems Planning*<sup>SM</sup> diagrams that represent system structure and function — i.e. causal mental models and reasoning with *relative* changes (e.g. ‘+’ or ‘-’), as opposed to Descriptive causal diagrams (DCD). RBPs are similar to the Causal loop diagrams (CLD) of Systems Thinking/ System Dynamics, with some differences in the semantic mark-up.
- ROADMAP** Visual depiction of ‘options along the way’, usually referring to development options (e.g. technology, products); typically displayed in sequences along time, with strategic rather than operational value (*cf.* ‘Workflow’).

## S

- SCOPE** The angle in which we are looking (see ‘Aim’); it determines how many things we see when we look.
- SEA** (Strategic Environmental Assessment) Process that analyses and assesses strategy proposals; facilitates the search for the best option and supports democratic decision making; can be combined with impact assessment at the project level (i.e. EIA).
- SECRETARY** (from *secretarius* [L], confidential officer; from *se-* [L], apart + *cernere* [L], to sift) A person employed to carry out administrative tasks (cf. ‘Administration’), either at a senior/ executive level (i.e. with the power to put plans or actions into effect) or at a junior/ assistant level (e.g. dealing with correspondence and appointments).
- SEMANTICS** (from *σημαντικός* [Gk], significant, from *σημαίνω* [Gk], to signify, from *σημα* [Gk], sign) The meaning of a word, sentence, etc.
- SEMIOTICS** (from *σημείον* [Gk], sign, from *σημα* [Gk], sign) The study of signs as expressions of reality (Perdicoulis, 2019).
- SHAREHOLDER** An owner of shares in a company.
- SIMULATION** (from *similis* [L], like, similar) A constructed reality, either referring to the past or the future — the latter type being used as forecasting technique. Simulation is based on models (such as mental models or numerical models), and the type of simulation follows accordingly — for instance: qualitative or numerical. Simulation can also take place with distributed or shared models, in which cases role-playing is an appropriate medium.
- STAKEHOLDER** A person with concern or interest in a particular situation or action (e.g. a business or operation). Stakeholders can be affected, and also affect that particular situation or action.
- STOCHASTIC** (from *στόχος* [Gk], target) Something that cannot be predicted (‘hit’) precisely (v. entry) or accurately (v. entry).
- STRATEGIC PLANNING** A planning method (that is, a way to plan); credited to the ancient Greek military (*στρατός* [Gk]); in the early 20th C., strategic planning became popular in the private sector (that is, businesses), and later appeared in the public sector — including spatial planning.
- STRATEGY** (from *στρατός* [Gk] + *άγειν* [Gk], leading the army [in new and unknown conditions]) An action proposed to achieve an intended outcome; strategy is high-level and abstract, condensed, or generalised action; strategy is pioneering action, confronting novel situations and unexplored grounds; therefore, it contains risks and can follow no pro-forma instructions (recipes).
- SWOT** A technique that identifies strengths, weaknesses, opportunities and threats for a particular situation. The technique classifies facts into these four categories comparing to one or more specific (but frequently un-declared) references.
- SYSTEM** A set of connected things or parts forming a complex whole, in particular; a set of things working together as parts of a mechanism or an interconnecting network.
- SYNTHESIS** (from *σύν* [Gk], together + *θέσις* [Gk], position) Composition (literally, placing together) or combination of simpler elements into something more complex.

## T

- TARGET** An intended outcome, usually defined with deadlines and quantitative achievement marks.
- THEORY** A verified accepted ‘view’ or mental map (system of ideas intended to explain something), usually generally with experimental confirmation; from *θεωρέω* [Gk], contemplation, speculation; associated to *θεωρός* [Gk], spectator.
- TRANSACTION CHAIN DIAGRAMS** (TCD) *Systems Planning*<sup>SM</sup> diagrams that bundle money flows with product or service flows for tracing, examination, and/ or adjustment purposes.

## V

- VALUE** What is important to an organisation, a community, etc.; also, any particular numerical instance of a parameter.

## VISION

- A conceived image of a state (most commonly about the future, but it can also be about the past), highly condensed or concentrated.

## W

- WORKFLOW** (from *work* [En], tasks to be undertaken + *flow* [En], a steady, continuous stream) Sequence of tasks and/ or states as operational instructions for the execution of a managed activity (e.g. project); can be detailed or aggregated.

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