

Glossary

AIDIMA A non-profit consortium between furniture, wood, packaging and related industry, aimed at establishing standard processes for the sharing of business information (B2B) ([Chap. 8](#))

Bibliometric Analysis Methods A set of methods to quantitatively analyze scientific and technological literature (e.g., journal articles) ([Chap. 3](#))

Bullwhip effect The effect that when no information sharing is in place between supply chain members, distortion of customer demand inflates going through upstream members. The uppermost upstream member would have the biggest inflated demand and then, overproduce parts ([Chap. 4](#))

Business case A document that justifies a project in terms of its value in reference to cost consumption. It includes project background, goal, objectives, current state assessment, desirable future state, benefit analysis results, cost summary, resource needs, and timelines ([Chap. 5](#))

Business process A collection of related, structured activities or tasks that using an input, produce a specific output in service or product for fulfilling the given requirement ([Chap. 1](#))

Carbon Disclosure Project (CDP) An organization based in the United Kingdom which works with shareholders and corporations to disclose the greenhouse gas emissions of major corporations ([Chap. 9](#))

Cloud Computing The delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network (typically the web) ([Chap. 3](#))

Common Object Request Broker Architecture (CORBA) A standard defined by the Object Management Group (OMG) that enables software components written in multiple computer languages and running on multiple computers to work together ([Chap. 3](#))

- Competitive business strategy** The strategy of a company that uniquely characterizes the company from others in conjunction with its business goals, philosophy, planning, and execution ([Chap. 1](#))
- Corrected Ordinary Least Squares (COLS) Regression** A deterministic regression-based approach that corrects ordinary least squares to discover a frontier line for the benchmarking purpose ([Chap. 9](#))
- Cross-dock** A junction point where the shipments coming from suppliers are sorted out, rearranged, and departs to destinations ([Chap. 4](#))
- DAML** A markup language for the U.S. Defense Advanced Research Project Agency (DARPA) that is based on XML. DAML is designed to have a greater capacity than XML for describing objects and the relationships between objects, to express semantics, and to create a higher level of interoperability among Web sites ([Chap. 4](#))
- Delphi Technique** A structured communication technique as a systematic, interactive forecasting method which relies on a panel of experts ([Chap. 3](#))
- Description logics (DL) language** A family of formal knowledge representation languages to be used to model *concepts*, *roles* and *individuals*, and their relationships ([Chap. 9](#))
- Earned value management** A project performance measurement technique that evaluates project progress in an integrated manner of scope, time, and cost ([Chap. 6](#))
- Economic Input–Output Life Cycle Assessment (EIO-LCA)** An analysis method to quantify how much environmental impact can be directly attributed to each section of the economy and how much each sector purchases from other sectors in producing its outputs by aggregating section-level data ([Chap. 9](#))
- Energy Star** An international standard for energy efficient consumer products or manufacturing processes originated from the USA ([Chap. 9](#))
- Enterprise environmental factors** Relevant government or industry standards, the organization’s infrastructure, and marketplace conditions ([Chap. 6](#))
- European Union Emission Trading System (EU-ETS)** The first large emissions trading scheme in the world launched in 2005 to combat climate change. EU-ETS currently covers more than 10,000 installations with a net heat excess of 20 MW in the energy and industrial sectors which are collectively responsible for close to half of the EU’s emissions of CO₂ and 40 % of its total greenhouse gas emissions ([Chap. 9](#))
- EXPRESS-G** A standard graphical notation as part of the EXPRESS language for displaying entity and type definitions, relationships and cardinality in modeling product data ([Chap. 9](#))

Green House Gas (GHG) Gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect ([Chap. 9](#))

Greenhouse Gas (GHG) Protocol Corporate Value Chain Standard A part of the Greenhouse Gas Protocol established by World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) (also referred to as the Scope 3 Standard) to provide requirements and guidance for companies and other organizations to prepare and publicly report a GHG emissions inventory that includes indirect emissions resulting from value chain activities (i.e., scope 2 emissions) ([Chap. 9](#))

Greenhouse Gas (GHG) Protocol Product Life Cycle Standard A part of the Greenhouse Gas Protocol established by World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) to enable companies to measure the greenhouse gases associated with the full life cycle of products including raw materials, manufacturing, transportation, storage, use and disposal ([Chap. 9](#))

Growth Curve Matching A method for mapping an empirical model of the evolution to a certain quantity over time ([Chap. 3](#))

Intermodal transportation A transportation mode that involves more than one transportation mode and typically, a seaport has the intermodal transportation mode consisting of rail, truck, and vessel ([Chap. 4](#))

Interoperability An ability of two or more systems or components to exchange information and to use the information that has been exchanged ([Chap. 2](#))

ISO 14064 Standards Standards, as part of the ISO 14000 series of International Standards for environmental management, that provide governments, businesses, regions and other organizations with an integrated set of tools for programs aimed at measuring, quantifying and reducing greenhouse gas emissions. These standards allow organizations to take part in emissions trading schemes using a globally recognized standard ([Chap. 9](#))

Kanban System Literally meaning “signboard” or “billboard”. A concept related to lean and just-in-time (JIT) production. It is a scheduling system that helps determine what to produce, when to produce, and how much to produce ([Chap. 8](#))

Less-than-truckload When a truck is filled with fragmented small shipments, that is, none of those individual shipments can fill the truck shipping capacity fully ([Chap. 4](#))

Mass Customization The mass production of individually customized goods or services in the low unit costs ([Chap. 3](#))

Milk-run A method that was originated from milk delivery, that is, a truck visits predetermined shipment origins and picks up shipments in order and delivers to a destination ([Chap. 4](#))

- Off-shoring** Establishing a business entity or production facility in a foreign country ([Chap. 1](#))
- Operational business capability** The capability whether a firm is capable of supporting business goals and competitive business strategy ([Chap. 1](#))
- Organizational process assets** Formal and informal plans, policies, procedures, guidelines, information systems, financial systems, management systems, lessons learned, and historical information that could influence a project's success ([Chap. 6](#))
- Outsourcing** Acquiring raw materials and/or components from outside suppliers, including domestic and foreign suppliers ([Chap. 1](#))
- OWL (Web Ontology Language)** The Web Ontology Language OWL is a semantic markup language for publishing and sharing ontologies on the Web. OWL is developed as a vocabulary extension of RDF (the Resource Description Framework) and is derived from the DAML+OIL Web Ontology Language ([Chap. 4](#))
- OWL-DL** OWL sublanguage designed to provide the maximum expressiveness possible while retaining computational completeness, decidability, and the availability of practical reasoning algorithms ([Chap. 9](#))
- OWL-S** An ontology built on top of Web Ontology Language (OWL) by the DARPA DAML program, replacing the former DAML-S ontology. OWL-S is used to describe Semantic Web Services, enabling users and software agents to automatically discover, invoke, compose, and monitor web resources offering services, under specified constraints ([Chap. 9](#))
- PAS 2050** A consultative document, as part of the PAS (Publicly Available Specification), in support of assessing the life cycle greenhouse gas emissions of goods and services ([Chap. 9](#))
- Patent Analysis Methods** A set of methods to quantitatively analyze historical patent applications and issuances to figure out technological trends ([Chap. 3](#))
- Project charter** An official document that triggers the start of a project and provides a high level overall description for the project ([Chap. 6](#))
- RDF** Resource Description Framework. A family of W3C specifications originally designed as a metadata model but has come to be used as a general method for conceptual description or modeling of information that is implemented in web resources, using a variety of syntax formats ([Chap. 4](#))
- Reference ontology** The ontology that is defined according to a specific business domain reflecting unique business terminology and its meaning and structure ([Chap. 2](#))
- Remote Procedure Call (RPC)** An inter-process communication that allows a computer program to cause a subroutine or procedure to execute in another

address space (commonly on another computer on a shared network) without the programmer explicitly coding the details for the remote interaction ([Chap. 3](#))

RosettaNet A non-profit consortium aimed at establishing standard processes for the sharing of business information (B2B) ([Chap. 8](#))

Scenarios and Relevance Tree An analytical technique to generate a rich and detailed portrait of a plausible future world as a high level of abstraction and then draw a relevance tree to discover paths leading to a specific scenario in the future, starting with a specific project or policy at the present ([Chap. 3](#))

Scope creep The progressive, uncontrolled increase in project scope ([Chap. 6](#))

Self-Defeating Prophecy A prediction that prevents what it predicts from happening: the complementary opposite of a self-fulfilling prophecy ([Chap. 3](#))

Self-Fulfilling Prophecy A prediction that directly or indirectly causes itself to become true, by the very terms of the prophecy itself, due to positive feedback between belief and behavior ([Chap. 3](#))

Semantic mediation A methodology to share business information between units by developing a mediation tool in the middle that receives the request from one partner and interprets the request in an understandable format and sends it to another partner ([Chap. 2](#))

Semantic Web Service A Semantic Web Service, like conventional web services, is the server end of a client–server system for machine-to-machine interaction via the Web. Semantic services are a component of the semantic web because they use markup which makes data machine-readable in a detailed and sophisticated way (as compared with human-readable HTML which is usually not easily “understood” by computer programs) ([Chap. 4](#))

Service Oriented Architecture (SOA) A set of principles and methodologies for designing and developing software in the form of interoperable services (e.g., Web service) ([Chap. 2](#))

Simple Object Access Protocol (SOAP) A protocol specification for exchanging structured information in the implementation of Web services in computer networks ([Chap. 3](#))

Stakeholder An individual that is affected by the project and the stakeholder would benefit from and participate in the project ([Chap. 5](#))

System Dynamics An approach to understanding the behavior of complex systems over time. A complex system is characterized by feedback loops, time delays and nonlinearity ([Chap. 3](#))

Technology Assessment The study and evaluation of new technologies ([Chap. 5](#))

Technology Forecasting An attempt to predict the future characteristics of useful technological machines, procedures or techniques ([Chap. 3](#))

- Technology Foresight** An attempt to guide the development of new technologies as the most upstream element of the technology development process ([Chap. 3](#))
- UBL** OASIS Universal Business Language (UBL) with intension to become an international standard for electronic commerce freely available to everyone without licensing or other fees ([Chap. 8](#))
- Universal Description** (UDDI), A platform-independent XML-based registry for businesses worldwide to list themselves on the web and a mechanism to register and locate web service applications ([Chap. 3](#))
- Vertical integration** The business relationship that a single company, typically OEM, owns almost every business unit or function ([Chap. 2](#))
- Web Service** A method of communication between two electronic devices over the web. The W3C defines a “Web service” as “a software system designed to support interoperable machine-to-machine interaction over a network” ([Chap. 3](#))
- Web Service Description Language (WSDL)** An XML-based language that is used to describing the functionality offered by a Web service ([Chap. 3](#))
- Work breakdown structure** A method to decompose a project into subtasks until all necessary tasks are covered to finish the project. Product development process has a counterpart of WBS that is developed by product hardware structure ([Chap. 6](#))
- Work package** The lowest level of WBS tasks and it is usually finished in a short time ([Chap. 6](#))
- XML** Extensible Markup Language. A markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. It is defined in the XML 1.0 Specification produced by the W3C, and several other related specifications ([Chap. 2](#))

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