

Lean and Green Glossary

This glossary is designed to provide a common language for the emerging lean and green community. If you would like to add to the glossary, please email your submission to dwayne@leanaccountingsummit.com.

Join this movement by attending the first annual Lean and Green Summit in Boulder, CO, July 17-18, 2008, www.leanandgreensummit.com

Section 1

Lean Manufacturing Terms

B

Build-To-Order

Building and delivering a product based on a customer-specific order. Pull is an important concept of Build-To-Order. Contrast to Repetitive Manufacturing.

C

Chaku-Chaku (Load-Load)

A method of conducting single-piece flow, where the operator proceeds from machine to machine, taking the part from one machine and loading it into the next.

E

EPE Interval (EPEI)

Fundamental concept to lean manufacturing. The EPEI is the time it takes to run through every regular part produced in a process. Knowing the EPEI helps determine the manufacturing lot size and supermarket quantities for each part produced in a manufacturing process, as well as the number of kanban cards in the replenishment loop.

H

Heijunka (Production Smoothing)

Keeping total manufacturing volume and mix as constant as possible.
Synonymous with level load scheduling or production smoothing.

Hoshin Kari = Policy Deployment

The selection of goals, projects to achieve the goals, designation of people and resources for project completion and establishment of project metrics.

J

Jidoka (Automation)

Stopping a line automatically when a defective part is detected. Exceptions handling in real time.

K

Kaikaku

Radical Improvement, usually applied only once within a value stream.

Kaizen (Continuous Improvement)

Continuous Improvement is striving for perfection by continually removing successive layers of Waste, as they are discovered. It is generally accepted that a complete transformation process from mass production to Lean Manufacturing takes years. Perfection is zero waste and progress can't be benchmarked against competitors' levels of waste, but requires striving for world-class performance.

Kanban

A method of JIT production that uses standard containers or lot sizes with a single card attached to each. It is a Pull system in which work centers use a card to signal that they wish to withdraw parts from feeding operations or suppliers. The Japanese word kanban, loosely translated, means card, billboard or sign.

M

Muda (Waste)

Any human activity which absorbs resources, but creates no real value in the eyes of the customers. Lean theory classifies waste into seven categories: overproduction, defects, unnecessary inventory, inappropriate processing, excessive transportation, waiting and unnecessary motion.

N

Nagara System

A production system where seemingly unrelated tasks can be produced by the same operator simultaneously.

Non-Value Added (NVA)

Anything done that the customer would not want to pay for if they knew about it.

P

Pacemaker

Any process point along a value stream that sets the pace for the entire stream.

Pitch

The time needed in a production area to make one container of products. For example, if Tact Time equals 30 seconds and pack size is 20 pieces, pitch is 10 minutes.

Poka Yoke

Commonly referred to as Error-Proofing or Mistake-Proofing. The aim of Poka Yoke is to design devices that prevent mistakes from becoming defects by giving the earliest possible warning to enable response to abnormalities. Poka Yoke devices sense abnormalities and take action only when an abnormality is identified.

Pull-based Manufacturing

An essential part of any Build-To-Order strategy. Having set up the framework for Flow, the next step is to only produce what the customer needs. Pull means that no one upstream should produce goods or services until the customer downstream asks for it. Contrast this concept to Push.

Push-based Manufacturing

The production of items required by a given schedule planned in advance. Push based manufacturing is typically associated with producing products to forecasted demand.

R

Repetitive Manufacturing

Building the same product over and over again. Repetitive manufacturing can apply to building both customer-specific or uniform, generic products in long continuous production runs. Lean Manufacturing strategies and/or Push-based manufacturing methods can be employed.

S

Shusa

The leader of the team whose job is to design and engineer a new product and it into production.

Six Sigma

Six Sigma is a statistical term that equates to 3.4 defects per one million opportunities. Typical manufacturers operate at around three sigma, or 67,000 defects per million. Six Sigma can achieve dramatic improvement in business performance through a precise understanding of customer requirements and the elimination of defects from existing processes, products and services. Key tenets of Six Sigma: Define Measure, Analyze, Improve, and Control. To fully embrace Six Sigma, an organization must work intimately with all internal disciplines in addition to external suppliers and customers.

Specify Value

What does and does not create value is to be specified from the customer's perspective and not from the perspective of individual companies, functions and departments.

Supermarket

In lean manufacturing terms, a supermarket is a tightly managed amount of inventory within the value stream to allow for a pull system. Supermarkets, often called inventory buffers, can contain either finished items or work-in-process. They are used to handle finished goods inventories being replenished from a continuous flow pacemaker process, between a continuous flow process and other manufacturing processes that are shared by other value streams and for incoming parts and material being pulled from supplier locations.

Supply Chain Execution (SCE)

A business strategy to improve shareholder and customer value by optimizing the flow of products, services and related information from source to customer. Supply Chain Management encompasses the processes of creating and fulfilling the market's demand for goods and services and involves a trading partner community engaged in a common goal of satisfying the end customer.

Supply Chain Management (SCM)

A business strategy to improve shareholder and customer value by optimizing the flow of products, services and related information from source to customer. Supply Chain Management encompasses the processes of creating and fulfilling the market's demand for goods and services and involves a trading partner

community engaged in a common goal of satisfying the end customer.

Supply Chain Planning (SCP)

A subset of Supply Chain Management, this is the process of coordinating assets to optimize the delivery of goods, services and information from supplier to customer, balancing supply and demand. A Supply Chain Planning suite overlays a transactional system to provide planning, what-if scenario analysis capabilities and real-time demand commitments.

T

Taiichi Ohno

Born in 1912, he developed the Toyota Production System using the quintessence of Japanese reasoning. He was an excellent originator of new ideas in the industrial world with a unique management style. His Japanese production system made planning for the manufacture of automobiles the most modern process in the world.

Takt Time

Takt time represents the customer demand rate and is used to synchronize the rate of production with the rate of sales. Numerically it is the daily production number required to meet orders in hand divided into the number of working hours in the day.

The Five S's

Typically attributed to the Toyota Production System (TPS), the overriding idea behind the Five Ss is that there is "a place for everything and

everything goes in its place." Every item that is used in a business process is clearly labeled and easily accessible. Discipline, simplicity, pride, standardization and repeatability as emphasized in the Five Ss are critical to the lean enterprise in general and flow implementations specifically.

Toyota Production System (TPS)

The manufacturing strategy of Toyota, widely regarded as the first implementation of Lean Manufacturing. Today, Toyota refers to TPS as the "Thinking Production System." The system is intended to simulate thinking while working, and to stimulate thinking about how to improve work.

V

Value Stream

By locating the value creating processes next to one another and by processing one unit at a time, work flows smoothly from one step to another and finally to the customer. This chain of value-creating processes is called a value stream. A value stream is simply all the things done to create value for the customer.

Value Stream Mapping

A Lean planning tool used to visualize the value stream of a process, department or organization.

Visibility System

Layout and organization of work so that a deviation from expectation should be obvious by eye. Use of five-S, kanban, and other lean techniques should make a work area practically "run itself."

Section 2

Sustainability Terms

A

Accountability

being answerable to all stakeholders, including any natural or social systems affected by a business such as customers, employees, and communities

Appreciative Inquiry

a philosophy of organizational assessment and change that seeks examples of success to emulate and organizational or personal strengths to build upon, rather than focusing upon fixing negative or ineffective organizational processes

B

Best Practice

an effective, innovative solution, process, or procedure that demonstrates a business' dedication to making progress in environmental and corporate social responsibility; sometimes shared with collaborators and competitors to shape standards for an industry

Biodiesel

a type of fuel made by combining animal fat or vegetable oil (such as soybean oil or used restaurant grease) with alcohol; biodiesel can be directly substituted for diesel (known as B100, for 100% biodiesel), or be used as an additive mixed with traditional diesel (known as B20, for 20% bio-diesel)

Bioenergy

energy generated from renewable, biological sources (biomass) such as plants, to be used for heat, electricity, or vehicle fuel

Biofuel

fuel created from renewable, biological sources such as plants or animal byproducts, but excluding biological material (such as natural gas, coal, or methane) which has been transformed by geological processes

Biomass

living or recently-dead organic material that can be used as an energy source or in industrial production; excludes organic material that has been transformed by geological processes (such as coal or petroleum)

Biomimicry

a science that studies natural processes and models in order to imitate the designs to solve human problems, i.e. studying a leaf to better understand and design solar cells

Brown Power/Energy

electricity generated from the combustion of nonrenewable fossil fuels (coal, oil, or natural gas) which generates significant amounts of greenhouse gases

C

Calvert

an investment firm that highlights socially responsible investing and publishes an annual index of the largest U.S. companies that represent socially responsible investments

Cap and Trade System

a strategy to reduce carbon emissions via financial incentives; "caps" establish emissions limits and fines for exceeding those limits, while companies operating below their carbon limits can sell or "trade" their offsets to companies that are operating above the limits

Carbon Footprint

the total amount of greenhouse gases emitted directly or indirectly through any human activity, typically expressed in equivalent tons of either carbon or carbon dioxide

Carbon Trading

a trading system for countries, companies and individuals designed to offset carbon emissions from one activity with another, whereby those who cannot meet their emissions goals may purchase credits from those who surpass their goals

Cause-related Marketing

a business strategy whereby a company aligns its mission and goals to create a specific and tailored partnership with a nonprofit organization or cause

Ceres

a national network of investors, environmental organizations and other public interest groups working with companies and investors to address sustainability challenges such as global climate change; Ceres hosts an annual competition to highlight the best examples of sustainability reporting in North America; pronounced "series"

Clean Air Act

federal legislation passed in 1970 and amended in 1990 that authorizes the EPA to set National Ambient Air Quality Standards and to regulate industry in order to meet those maximum emissions levels

Clean Production

a concept developed under the Kyoto Protocol in which manufacturing processes reduce environmental impact and decrease ecological problems by minimizing energy and raw materials use, and making sure emissions and waste are as minimal and as non-toxic to environmental and human health as possible

Clean Water Act

federal legislation passed in 1972 and amended in 1976 that requires the EPA to set maximum pollutant levels for each known contaminant in U.S. surface waters and authorizes the EPA to regulate industrial discharge in order to meet those standards

Climate Change

changes in global climate patterns (such as temperature, precipitation, or wind) that last for extended periods of time as a result of either natural processes or human activity; the contemporary concern is that human activity is now transcending natural processes in causing the most prevalent climate changes of our time

Closed-loop Recycling

a process of utilizing a recycled product in the manufacturing of a similar product or the remanufacturing of the same product

Closed-loop Supply Chain

an ideal in which a supply chain completely reuses, recycles or composts all wastes generated during production; at minimum "closed-loop supply chain" indicates that the company which produces a good is also responsible for its disposal

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)

federal legislation passed in 1980 that established a tax on the petroleum and chemical industries to fund cleanup of hazardous waste sites, as well as establishing EPA authority to assign responsibility for that cleanup to the polluters or purchasers of contaminated land

Corporate Citizenship

a company's responsible involvement with the wider community in which it is situated

Corporate Health

the idea that companies, especially commercial businesses, have a duty to care for all of their stakeholders in all aspects of their operations

Corporate Responsibility Report

a periodically-published report of a company's corporate responsibility practices, goals, and progress toward achieving those goals that may be included with the company's annual report or as a separate publication that focuses on the company's social and environmental impact; the process of creating this report is meant to uncover strengths and weaknesses as well as enhance transparency for all company stakeholders;

Corporate Responsibility

the degree to which companies manage business practices to produce an overall positive impact on society

Corporate Social Responsibility

the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workplace as well as the local community and society at large; a company's obligation to be accountable to all of its stakeholders in all its operations and activities (including financial stakeholders as well as suppliers, customers, and employees) with the aim of achieving sustainable development not only in the economic dimension but also in the social and environmental dimensions

Corporate Sustainability Report

a periodic report published by a company to outline its progress toward meeting its financial, environmental, and social sustainability goals; often published in compliance with third-party standards such as the UN Global Compact or Global Reporting Initiative;
Cradle-to-Cradle
a design philosophy put forth by architect William McDonough that considers the life-cycle of a material or product, and ensures that the product is completely recycled at the end of its defined lifetime

D

Demand-Side Management
the implementation of policies that control or influence demand of certain products or services
Dematerialization
the reduction of total materials used in providing customers with products or services

E

Eco-Efficiency
the creation of more goods and services while using fewer resources and creating less waste and pollution
Eco-friendly
a product, practice, or process that is "green" or good for the environment, creating no unnecessary or hazardous waste and minimizing use of non-renewable, natural resources

Ecological Footprint

the total amount of land, food, water, and other resources used by, or the total ecological impact of, a person or organization's subsistence; usually measured in acres or hectares of productive land

Ecological Justice, a.k.a. Ecojustice

the concept that all components of an ecosystem (such as plant and animal life as well as natural resources) have a right to be free from human exploitation and free from destruction, discrimination, bias, or extinction; distinct from Environmental Justice

Energy Efficiency

the result of actions taken to reduce dependence on or to save fuels, i.e., selection of road vehicles with higher MPG or the use of renewable sources of power for heating and cooling

Environmental Audit

a systematic, documented, periodic and objective evaluation of how well a project, organization, individual, or service is performing in terms of environmental impact, including, but not necessarily limited to, compliance with any relevant standards or regulations

Environmental Impact Assessment (EIA)

an assessment of potential environmental effects of development projects; required by the National Environmental Policy Act (NEPA) for any proposed major federal action with significant environmental impact

Environmental Justice

the concept of equal access to environmental resources and protection from environmental hazards regardless of race, ethnicity, national origin, or income; distinct from Ecological Justice

Environmental Risk Assessment (ERA)

the tracking and rating of environmental risks, such as emissions, associated with a product and its manufacturing

Environmental Valuation

the inclusion of environmental costs and benefits into accounting practices using such mechanisms as taxes, tax incentives, and subsidies; by quantifying environmentally-related costs and revenues, better management decisions and increased investment in environmental protection and improvement are encouraged

Environmental, Social and Government (ESG)

an acronym commonly used by investment firms to refer to the types of issues or factors considered in measuring a company's "responsible practices"; these issues or factors include the environmental effects of a company's business practices, social metrics such as fair pay and treatment of labor and community involvement and ethical corporate governance practices that are both transparent and anti-corruption

F

Fair Trade

an international trading partnership that seeks to help marginalized producers and workers achieve financial self-sufficiency by establishing direct lines of trade between producers and consumers, guaranteeing producers fair prices for goods, restricting exploitative labor processes, and favoring environmentally-sustainable production processes through a system of labeling products as "fair trade"

Fossil Fuels

fuels, such as natural gas, coal, and petroleum, that formed from the fossilized (or geologically transformed) remains of plants and animals

G

Geothermal Energy

a natural and sustainable form of heat energy derived from steam and hot water found below the surface of the Earth

Global Reporting Initiative (GRI)

a reporting standard generally accepted to be the leading international standard for reporting social, environmental and economic performance

Global Warming

the gradual, average increase of temperature of the Earth's near-surface atmosphere that is accelerated by the greenhouse gases emitted by human industry; global warming is one type of and a contributor to other types of global climate change in general, such that at individual locations the temperature may fluctuate or drop even though the global average is rising

Green Accounting

the incorporation of the amount of natural resources used and pollutants expelled into conventional economic accounting in order to provide a detailed measure of all environmental consequences of any and all economic activities

Green Building

a comprehensive process of design and construction that employs techniques to minimize adverse environmental impacts and reduce the energy consumption of a building, while contributing to the health and productivity of its occupants; a common metric for evaluating green buildings is the LEED (Leadership in Energy and Environmental Design) certification

Green Design

the design of products, services, buildings, or experiences that are sensitive to environmental issues and achieve greater efficiency and effectiveness in terms of energy and materials use

Greenhouse Effect

the trapping of heat within the Earth's atmosphere by greenhouse gases such as CO₂, which is necessary to keep the planet at a temperature warm enough to sustain life, but becomes dangerous when greenhouse gases produced by humans cause the effect to intensify and push the global temperature to too high a level

Greenhouse Gas

a gas that contributes to the natural greenhouse effect, whereby heat is trapped within the Earth's atmosphere, including: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride

Greenwashing

the process by which a company publicly and misleadingly declares itself to be environmentally-friendly but internally participates in environmentally- or socially-unfriendly practices

K

Kyoto Protocol

an international agreement reached during a summit in Kyoto, Japan in 1997, the Kyoto Protocol builds upon the United Nations Framework Convention on Climate Change and sets targets and timetables for industrialized countries to reduce their greenhouse gas emissions; 175 parties have so far ratified the Protocol and are legally bound to adhere to its principles

L

LEED Certification

an acronym for Leadership in Energy and Environmental Design sponsored by the United States Green Building Council that creates standards for developing high performance, sustainable buildings

Life Cycle Assessment (LCA)

a process of evaluating the effects of a product or its designated function on the environment over the entire period of the product's life in order to increase resource-use efficiency and decrease liabilities; commonly referred to as "cradle-to-grave" analysis

LOHAS Market

an acronym for Lifestyles of Health and Sustainability; a market that consists of mindful consumers passionate about the environment, sustainability, social issues and health

M

Meta-Trend

a global and overarching force that will affect many multidimensional changes; for example, environmental impacts on business, individuals and countries

N

Natural Capital

a company's environmental assets and natural resources existing in the physical environment, either owned (such as mineral, forest, or energy resources) or simply utilized in business operations (such as clean water and atmosphere); often traditional economic measures and indicators fail to take into account the development use of natural capital, although preservation of its quantity and quality and therefore its sustainable use is essential to a business' long-term survival and growth

Non-Governmental Organization (NGO)

a private, non-profit organization that is independent of business and government, that works toward some specific social, environmental, or economic goal through research, activism, training, promotion, advocacy, lobbying, community service, etc.

Non-renewable Resource

a natural resource that is unable to be regenerated or renewed fully and without loss of quality once it is used, i.e., fossil fuels or minerals

O

Open-Loop Recycling

a recycling process in which materials from old products are made into new products in a manner that changes the inherent properties of the materials, often via a degradation in quality, such as recycling white writing paper into cardboard rather than more premium writing paper; often used for steel, paper, and plastic, open-loop recycling is also known as downcycling or reprocessing

Organic

a term signifying the absence of pesticides, hormones, synthetic fertilizers and other toxic materials in the cultivation of agricultural products; 'organic' is also a food labeling term that denotes the product was produced under the authority of the Organic Foods Production Act

P

People, Planet, Profit

the expanded set of values for companies and individuals to use in measuring organizational and societal success, specifically economic, environmental and social values; "people, planet, profit" are also referred to as the components of the "triple bottom line"; see Triple Bottom Line

R

Renewable Energy

energy derived from non-fossil fuel resources (such as solar, wind, or geothermal energy) that can be replenished in full without a loss of quality; separate from sustainable energy because of emissions or other unsustainable impacts of the process of creating renewable energy

Renewable Portfolio Standard

a state policy that requires that state to meet a certain percentage of its energy needs with renewable energy by a certain date

S

Shareholder Resolution

a corporate policy recommendation proposed by a shareholder holding at least \$2,000 market value or 1% of the company's voting shares presented for a vote by other shareholders at the company's annual meeting; an increasing number of shareholder resolutions request a company and/or its board of directors to carry out responsible business practices, especially regarding social, environmental and human rights issues

Social Entrepreneurship

an entrepreneurial endeavor that focuses on sustainable social change, rather than merely the generation of profit

Social Return on Investment (SROI)

a monetary measure of the social value for a community or society yielded by a specific investment

Socially Responsible Investing (SRI)

an investment practice that gives preference to companies that value social and environmental impacts in addition to financial gain; socially responsible investments, also known as "ethical investments," involve companies and practices that cause little or no depletion of natural assets or environmental degradation, and that do not infringe the rights of workers, women, indigenous people, children nor animals

Stakeholder Engagement

the ongoing process of soliciting feedback regarding a company's business practices or major decisions from financial shareholders, as well as individuals or groups effected by corporate environmental or social practices such as suppliers, consumers, employees, and the local community

Stakeholder

an individual or group potentially affected by the activities of a company or organization; in sustainable business models the term includes financial shareholders as well as those affected by environmental or social factors such as suppliers, consumers, employees, the local community, and the natural environment

Standards

government or privately-created lists of social and environmental criteria used to regulate or evaluate the corporate responsibility of various companies; examples include the Global Reporting Initiative and UN Global Compact as well as indexes used by socially responsible investment firms such as CERES, Calvert and Domini

Strategic Philanthropy

a corporate philanthropy or community giving program that maximizes positive impact in the community as well as for the company, including bolstered employee recruitment, retention and a stronger company brand

Supply-Side Economics

the use of policies such as tax cuts and business incentives to control to supply of certain goods or services

Sustainability

the successful meeting of present social, economic, and environmental needs without compromising the ability of future generation to meet their own needs; derived from the most common definition of sustainability, created in 1987 at the World Commission on Environment and Development

Sustainable Design

a process of product, service, or organizational design that complies with the principles of social, economic, and environmental sustainability

Sustainable Development

development that utilizes tools, supplies and strategies that protect and enhance the earth's natural resources and diverse eco-systems so as to meet the social and economic needs of the present without compromising the ability to meet the needs of the future

Sustainable Energy

energy produced both from renewable resources or by use of clean production technology

T

Tragedy of the Commons

the inherent conflict between individual interests and the common good, based on the assumption that an individual uses a public good without considering the impact of his or her use on the availability of that good, therefore resulting in the over-exploitation of a public resource; the concept is explored in a 1968 essay written by Garrett Hardin

Transmaterialization

the process of substituting a service for a product in order to meet customer needs while reducing the use of materials and natural resources

Transparency

a measure of increased accountability and decreased corruption in which a business reports on its ethics and performance results through accessible publication of the business' practices and behavior; there is a strong movement to increase the transparency of business processes via independently-verified corporate responsibility reporting

Triple Bottom Line

an expansion of the traditional company reporting framework of net financial gains or losses to take into account environmental and social performance; see People, Planet, Profit

Triple Top Line

a phrase describing a company's improved top-line financial performance over the long term due to sustainable business practices, including less capital investment and increased revenues

U

United Nations Global Compact

an international initiative that seeks to bring businesses together voluntarily in order to promote socially and environmentally responsible practices; signatories pledge to uphold the Compact's 10 Principles

United States Business Council on Sustainable Development (USBCSD)

a non-profit organization promoting sustainable development by establishing networks and partnerships between American companies and government entities; the USBCSD provides a voice for industry and is the U.S. branch of the World Business Council of Sustainable Development

Venture Philanthropy

a charitable giving model that bridges venture capital strategies with philanthropic giving, creating strategic relationships among individuals and nonprofit organizations

W

Waste-to-Energy

a recovery process in which waste is incinerated or otherwise turned into steam or electricity, and used to generate heat, light or power through the process of combustion

Waste-to-Profit

the process of using one company's waste or by-product as the input or raw material for another company, thereby increasing business profits and decreasing waste; also referred to as byproduct synergy

World Business Council on Sustainable Development (WBCSD)

an association of 170 international companies that provides business leadership with support to operate, innovate, and grow through sustainable development initiatives that incorporate the "three pillars of economic growth:" environmental protection, social development and economic growth

Z

Zero Waste

a production system aiming to eliminate the volume and toxicity of waste and materials by conserving or recovering all resource

Section 3

Guided Collaboration Terms

Open Space Technology www.openspaceworld.org

Open Space Technology is an engaging, participative methodology that is designed to help people self-organize in order to focus productively on the issues that matter to them as a group. Developed by Harrison Owen, the process encourages individuals to identify and host conversations and to invite others to participate, by choice, in the topics of interest to them. It is effective in situations where a diverse group of people must deal with complex and potentially conflicting material in innovative and productive ways.

World Café www.theworldcafe.com

An intentional way to create a living network of conversations in which new knowledge, new relationships, and creative insights can emerge. Developed by Juanita Brown and David Isaacs of Whole Systems Associates, from their extensive experience with grass-roots community organizing and social change, the process simulates conversations one might have with a small group of people in a café setting and encourages cross-pollination of ideas. It has been used worldwide in corporations and communities to engage multiple stakeholders in questions that matter to them collectively.