AZUMUTA

Azumuta's Cheat Sheet

0 - 9

5s audit 5S audit Check or 5S Organization Checklist is a bench-marking checklist that assesses how well a factory or an office is organized. It provides a framework that defines efficiency and organization for the systematic working of a workplace.

5s best practices Pioneered by Toyota Motor Company, the 5S method applies standard housekeeping practices in the workplace through the five principles of Sort (seiri), Set in order (seiton), Shine (seiso), Standardize (seiketsu), and Sustain (shitsuke).

5s visual management 5S visual management is defined as an improvement process originated by the Japanese to create a workplace that supports company-wide integration of workplace organization, standardization, visual control, visual display, and visual metrics.

5s workplace The five in a 5S workplace organizational and housekeeping methodology refers to five steps – sort, set in order, shine, standardize and sustain. ... The term refers to five steps – sort, set in order, shine, standardize and sustain – that are also sometimes known as the five pillars of a visual workplace.

8 wastes of lean The 8 Wastes of Lean are Defects, Overproduction, Waiting, Non-Utilized Talent, Transportation, Inventory, Motion, and Extra-Processing.

A - D

andon A device that calls attention to defects, equipment abnormalities, other problems, or reports the status and needs of a system typically by means of lights – red light for failure mode, amber light to show marginal performance, and a green light for normal operation mode.

andon in lean manufacturing Much like the "check engine" light in a car, Andon in Lean manufacturing is a system designed to alert operators and managers of problems in real time so that corrective measures can be taken immediately.

audit The definition of an audit is the process of evaluation or analysis of something to determine its accuracy or safety, or is the document that declares the result of such an analysis or evaluation. ... An example of an audit is a written piece of paperwork outlining mistakes on your tax return.

audit process automation Auditing is defined as the on-site verification activity, such as inspection or examination, of a process or quality system, to ensure compliance to requirements. An audit can apply to an entire organization or might be specific to a function, process, or production step.

audit scope Audit scope, defined as the amount of time and documents which are involved in an audit, is an important factor in all auditing. The audit scope, ultimately, establishes how deeply an audit is performed. It can range from simple to complete, including all company documents.

augmented worker Another way to define augmented work is work that integrates digital technologies into the manufacturing process to evolve how that work is done. ... Whether digital technologies assist workers or change how they work, manufacturers are already using augmentation to achieve significant competitive advantages.

balancing line Line balancing is a production strategy that involves balancing operator and machine time to match the production rate to the Takt time. ... In other words, the quantities of workers and machines assigned to each task in the line should be rebalanced to meet the optimal production rate.

causal factor A determining or causal element or factor; "education is an important determinant of one's outlook on life" determinant, determining factor, determinative, determiner. cognitive factor - something immaterial (as a circumstance or influence) that contributes to producing a result.

causal factor analysis A method of searching for the cause or causes of certain effects. Because the causal factor needs to be identified, the researcher will have to obtain data or use inferences.

cause and effect diagram for manufacturing industry A fishbone diagram, also called a cause and effect diagram or Ishikawa diagram, is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes.

cloud computing The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

competency management Managerial competencies are the skills, motives and attitudes necessary to a job, and include such characteristics as communication skills, problem solving, customer focus and the ability to work within a team.

competency matrix A training/competency matrix is a tool used to document and compare the required competencies for a position with the current skill level of the employees performing the roles. It is used in a gap analysis for determining where you have critical training needs and as a tool for managing people development.

contributory factors? These are factors that either influenced or caused a single event or chain of events that contributed to the incident. The factors may have had either a negative or a positive effect, eg, some may have mitigated or minimised the outcome of the incident.

customizable software A customization is a feature, extension, or modification that requires custom coding and/or some form of special implementation. A configuration is when you use native tools in the system to change its behavior or features.

digital factory worker training Employee training is a program that is designed to increase the technical skills, knowledge, efficiency, and value creation to do any specific job in a much better way. ... Training increases the needed skill set and helps in development of an employee as well as overall growth of the organization.

digital operator training Operator training. The specialized education of an organization's employees in the general knowledge and specific skills required to do their jobs effectively. ... The objective of the training is to enable the operator to perform the job in a manner that is satisfactory to the employer and satisfying to the employee.

digital training Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology. It encompasses the application of a

wide spectrum of practices including: blended and virtual learning. ... adaptive learning. badging and gamification.

digital work instructions In addition to this, digital work instructions provide a paperless, data processing tool that gathers real-time information for better control of your operations. With digital procedures, you will be able to track your work and information, communicate with your team, and have full visibility of in-process work.

digitize workflow Digital workflow is a sequential, predictable combination of data, guidelines, and tasks that make up everyday processes at a business. By defining workflows digitally, business users can look up crucial data instantly, keep track of processes and tasks, streamline them for optimal productivity, and even automate them.

document security alliance The Document Security Alliance provides a forum for Government Agencies to meet and work with the Private Sector and Academia to resolve issues related to the production and distribution of counterfeit documents. You may apply by filling out our Online Application or using the Word documents below

E - H

elevate technologies Elevate Technology is a technology management company based in Houston, Texas. With a highly trained staff versed in multiple disciplines in the technology sector, we provide innovative technology services to a variety of small, medium and corporate level businesses.

ergonomy The applied science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort. Also called biotechnology, human engineering, human factors engineering.

erp Enterprise resource planning (ERP) is business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services and human resources.

error proofing Error-proofing refers to the implementation of fail-safe mechanisms to prevent a process from producing defects. This activity is also know by the Japanese term poka-yoke, from poka (inadvertent errors) and yokeru (to avoid)

example of poka yoke in manufacturing Example of Poka-Yoke device – many elevators are equipped with an electric eye to prevent doors from shutting on people. They are also equipped with sensors and alarms to prevent operation when overloaded.

factory management Factory Managers supervise factory workers and ensure that factory operations run smoothly. They typically work in manufacturing plants to oversee the production of goods, such as electronics, cars, equipment, and packaging.

factory planning Factory Managers supervise factory workers and ensure that factory operations run smoothly. They typically work in manufacturing plants to oversee the production of goods, such as electronics, cars, equipment, and packaging.

fish bone diagram A fishbone diagram, also called a cause and effect diagram or Ishikawa diagram, is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes.

fishbone diagram example manufacturing The team used the six generic headings to prompt ideas. Layers of branches show thorough thinking about the causes of the problem. For example, under the heading "Machines," the idea "materials of construction" shows four kinds of equipment and then several specific machine numbers.

fishbone root cause analysis Root cause analysis is a structured team process that assists in identifying underlying factors or causes of an adverse event or near-miss. ... A fishbone diagram is a visual way to look at cause and effect.

formlabs Formlabs is a 3D printing technology developer and manufacturer. The Somerville, Massachusetts-based company was founded in September 2011 by three MIT Media Lab students. The company develops and manufactures 3D printers and related software and consumables.

gemba Japanese word of which the literal translation is "the real place." where the actual services are provided or where the work is done.

hidden factory The Hidden Factory is the set of activity (or activities) in the process that result in reduction of quality or efficiency of a business process or manufacturing department, and is not known to managers or others seeking to improve the process.

high cycle assembly software

high cycle production software

I - L

iiot projects IIoT projects can focus on predictive maintenance, industrial automation, broader operational efficiency, reducing downtime or making better business decisions and creating new revenue streams. Each of these will need a different set of sensors, networks and data analytics.

imts International Manufacturing Technology Show

industry 4.0 Industry 4.0 refers to a new phase in the Industrial Revolution that focuses heavily on interconnectivity, automation, machine learning, and real-time data. Industry 4.0, also sometimes referred to as IIoT or smart manufacturing, marries physical production and operations with smart digital technology, machine learning, and big data to create a more holistic and better connected ecosystem for companies that focus on manufacturing and supply chain management.

internet of things The internet of things, or IoT, is a 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.

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iot applications in industry Digital/connected factory, facility management, production flow monitoring, inventory management, plant Safety and Security, quality control, packaging optimization, logistics and Supply Chain Optimization.

ishikawa diagram A fishbone diagram, also called a cause and effect diagram or Ishikawa diagram, is a visualization tool for categorizing the potential causes of a problem in order to identify its root causes.

iso 9000 ISO 9000 is defined as a set of international standards on quality management and quality assurance developed to help companies effectively document the quality system elements needed to maintain an efficient quality system. They are not specific to any one industry and can be applied to organizations of any size.

iso 9001 ISO 9001 is defined as the international standard that specifies requirements for a quality management system (QMS). Organizations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements.

iso/TS ISO/TS 16949 is an ISO technical specification aimed at the development of a quality management system that provides for continual improvement, emphasizing defect prevention and the reduction of variation and waste in the automotive industry supply chain.

issue management Issue management is the process of identifying and resolving issues. Problems with staff or suppliers, technical failures, material shortages – these might all have a negative impact on your project.

issue tracking The management of change requests. It might be a stand-alone system or part of a help desk system that tracks bug reports.

kaizen A Japanese term meaning "change for the better". Applied to business organizations, it implies continuing improvement involving everyone

kaizen process improvement "Tools and techniques commonly used in process improvement include: Six Sigma Tools. Six Sigma involves the collection and analysis of data to minimize cycle time and defects. Simulation. Simulation plays a vital role when it comes to the improvement of processes. Lean manufacturing, process mapping, SIPOC analysis, TQM.

kamishibai board The kamishibai board is a visual management tool like hour by hour production status boards are for supervisors and line managers. If hour by hour boards are used during the shift and on an hourly or bi-hourly cadence, kamishibai boards are used for weekly, monthly and even quarterly audits.

kanban A card or sheet used to authorize production or movement of an item; when fully implemented, kanban (the plural is the same as the singular) operate according to the following rules: 1. All production and movement of parts and material takes place only as required by a downstream operation. 2. The specific tool which authorizes production or movement is called a kanban. The word literally means card or sign, but it can legitimately refer to a container or other authorizing device. 3. The quantity authorized per kanban is minimal, ideally one. The number of available kanban for an item is determined by the demand rate for the item and the time required to replenish."

key performance indicators manufacturing

kpi in manufacturing A manufacturing KPI or metric is a well-defined measurement to monitor, analyze and optimize production processes regarding their quantity, quality as well as different cost aspects. They give manufacturers valuable business insights to meet their organizational goals.

lead Time The total time it takes for a process to convert a raw material to a finished quality part

lean manufacturing Lean manufacturing is a methodology that focuses on minimizing waste within manufacturing systems while simultaneously maximizing productivity. ... Lean manufacturing is based on a number of specific principles, such as Kaizen, or continuous improvement.

lean operation Lean operations is a means of running an organization by focusing on providing greater customer satisfaction while using as few resources as possible. The objective of lean operations is twofold: Creating value for customers and eliminating waste. Companies that use lean operations are highly concerned with efficiency.

learning management A learning management system (LMS) is a software application for the administration, documentation, tracking, reporting, and delivery of educational courses, training programs, or learning and development programs. The learning management system concept emerged directly from e-Learning.

line balance Line balancing is a production strategy that involves balancing operator and machine time to match the production rate to the Takt time. ... In other words, the quantities of workers and machines assigned to each task in the line should be rebalanced to meet the optimal production rate.

line balancing Making sure all operator in a line configuration (often a connected conveyorbelt) are equaly tasked. (spend a similar amount of time working)

low cycle assembly software

low cycle production software

M - P

machine monitoring system Machine monitoring is the process of connecting your machine to the internet to collect and interpret data.

manufacturing execution system Manufacturing execution systems (MES) are computerized systems used in manufacturing, to track and document the transformation of raw materials to finished goods. MES provides information that helps manufacturing decision makers understand how current conditions on the plant floor can be optimized to improve production output.

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mesa model As an educational association, MESA provides models that help those from a variety of levels and disciplines within the manufacturing and production enterprise to converge on common views of what they need to accomplish and how enterprise solutions can assist. The objective is to provide a platform for mutual understanding and planning for increased performance.

mistake proofing Mistake proofing, or its Japanese equivalent poka-yoke (pronounced PO-ka yo-KAY), is the use of any automatic device or method that either makes it impossible for an error to occur or makes the error immediately obvious once it has occurred.

muda A traditional general Japanese term for activity that is wasteful and doesn't add value or is unproductive. Removing waste is an effective way to increase profitability

pareto bar graph A Pareto chart is a bar graph. The lengths of the bars represent frequency or cost (time or money), and are arranged with longest bars on the left and the shortest to the right. In this way the chart visually depicts which situations are more significant.

pareto charts A Pareto Chart is a graph that indicates the frequency of defects, as well as their cumulative impact. Pareto Charts are useful to find the defects to prioritize in order to observe the greatest overall improvement. In order to expand on this definition, let's break a Pareto Chart into its components.

pareto diagram A Pareto chart is a type of chart that contains both bars and a line graph, where individual values are represented in descending order by bars, and the cumulative total is represented by the line. The chart is named for the Pareto principle, which, in turn, derives its name from Vilfredo Pareto, a noted Italian economist.

PDCA Plan-Do-Check-Act. An iterative four-step problemsolving process typically used in quality control. It is also known as the Deming Cycle, Shewhart Cycle, Deming Wheel, or Plan-Do-Study-Act.

poka-yoke A Japanese expression meaning "common or simple, mistake proof". A method of preventing errors by putting limits on how an operation can be performed in order to force the correct completion of the operation

pull system A manufacturing planning system based on communication of actual real-time needs from downstream operations – ultimately final assembly or the equivalent – as opposed to a push system which schedules upstream operations according to theoretical downstream results based on a plan which may not be current

Q - Z

QMS (Quality Management System) A quality management system (QMS) is a collection of business processes focused on consistently meeting customer requirements and enhancing their satisfaction. It is aligned with an organization's purpose and strategic direction.

quality management Quality management is the act of overseeing all activities and tasks that must be accomplished to maintain a desired level of excellence. This includes the determination of a quality policy, creating and implementing quality planning and assurance, and quality control and quality improvement.

QRM Quick Response Manufacturing is just like lean, a (logistical) improvement method that strives for more flowshorter lead times. The most important distinction with Lean is that QRM has been developed specifically for customer-specific or high-mix / low-volume production.

roi calculator ROI (Return on Investment) measures the gain or loss generated on an investment relative to the amount of money invested. ROI is usually expressed as a percentage and is typically used for personal financial decisions, to compare a company's profitability or to compare the efficiency of different investments.

root cause A root cause is an initiating cause of either a condition or a causal chain that leads to an outcome or effect of interest. ... A "root cause" is a "cause" (harmful factor) that is "root" (deep, basic, fundamental, underlying, initial or the like). The term "root cause" appeared in professional journals as early as 1905.

root cause diagram Also known as a fishbone diagram, a cause-and-effect diagram helps you examine potential causes by category. For example, manufacturing industries label the diagram branches with the six M's (machines, methods, materials, measurements, Mother Nature, manpower) and think of causal factors within each category.

six sigma A statistical term used to refer to a process that generates a maximum defect probability of 3.4 parts per million (PPM) when the amount of process shifts and drifts are controlled over the long term to less than +1.5 standard deviations from the centered mean.

skill matrix A Skills Matrix is a table that displays people's proficiency in specified skills and knowledge, as well as their interest in working on assignments using these skills and knowledge. ... At the intersection of the rows and columns, you identify the level of each person's particular skills, knowledge, and interests.

software off the shelf It means a ready made software product that you purchase as opposed to custom made software that is designed for a specific purpose. Microsoft office is off the shelf software. It comes from the days when software was sold in boxed packages containing physical media and instruction manuals.

SOP Standard Operating Procedure

standard work An agreed upon set of work procedures that effectively combines people, materials, and machines to maintain quality, efficiency, safety, and predictability; establishes a routine for repetitive tasks, provides a basis for improvement by defining the normal and highlighting the abnormal, and it prohibits backsliding

tact time Takt time is the maximum amount of time in which a product needs to be produced in order to satisfy customer demand.

takt rate The rate at which product must be turned out to satisfy market demand. It is determined by dividing the available production time by the rate of customer demand. The beat of the process

time studies manufacturing A structured process of directly observing and measuring human work using a timing device to establish the time required for completion of the work by a qualified worker when working at a defined level of performance.

total productive maintenance (TPM) Aims at maximizing equipment effectiveness throughout the entire life of the equipment. It involves such basic elements as a routine maintenance system, education in basic housekeeping, problem-solving skills, and activities to achieve zero breakdowns.

TPS Toyota Production System

traceability in manufacturing Traceability is the ability to track every part and product throughout the manufacturing process, from the moment when raw materials enter the factory to the moment when final products are shipped.

track defects In engineering, defect tracking is the process of tracking the logged defects in a product from beginning to closure (by inspection, testing, or recording feedback from customers), and making new versions of the product that fix the defects.

wrk solutions Workforce Solutions are third-party products and services relating to the sourcing, engagement and development of employed and non-employed (including contingent) workers.