IASSC Certified Lean Leader™ (Intermediate Level)

IASSC Certified Lean Leader Body of Knowledge Topics

1. Introduction to Lean – An introduction of Lean including definitions, benefits, principles and history. Blooms Taxonomy target level (max): Apply

2. Gemba (The Real Place) – A philosophy that reminds us to get out and spend time on the "floor" – the place where real action occurs. Blooms Taxonomy target level (max): Analyze

3. Kaizen (Continuous Improvement) – A strategy where employees work together proactively to achieve regular, incremental improvements in the process. Blooms Taxonomy target level (max): Analyze

4. KPIs (Key Performance Indicators) – Metrics designed to track and encourage progress towards critical goals of the organization. Blooms Taxonomy target level (max): Analyze

5. Teamwork and Team Skills – Team working, reaching consensus, brainstorming, motivation skills, individual and team empowerment. Blooms Taxonomy target level (max): Apply

6. MUDA (Wastes) / MURA (Fluctuation) / MURI (Overburden) – the three families of efficiency losses. Muda (Waste) being anything in the creation process that does not add value from the customer's perspective. MURA (Fluctuation) being waste of unevenness or inconsistency and it works against efficiency, Mura creates many of the seven wastes that we observe, Mura drives Muda! By failing to smooth our demand we put unfair demands on our processes and people and cause the creation of inventory and other wastes. MURI (Overburden) to give unnecessary stress to our employees and our processes. Blooms Taxonomy target level (max): Analyze

7. 5S – Sort (eliminate that which is not needed), Set In Order (organize remaining items), Shine (clean and inspect work area), Standardize (write standards for above), Sustain (regularly apply the standards). Blooms Taxonomy target level (max): Create

8. Kano Model – A theory of customer satisfaction and product development that identifies five categories of product qualities based on how they affect the customer's perception of the product. Blooms Taxonomy target level (max): Analyze

9. Just-In-Time (JIT) – Key principle aiming to pull parts through production based on customer demand instead of pushing parts through production based on projected demand. Relies on many lean tools, such as Continuous Flow, Heijunka, Kanban, Standardized Work and Takt Time. Blooms Taxonomy target level (max): Analyze

10. Bottleneck Analysis – Identify which part of the process limits the overall throughput and improve the performance of that part of the process. Blooms Taxonomy target level (max): Analyze

11. Continuous Flow – Creation where work-in-process smoothly flows through production with minimal (or no) buffers between steps of the process. Blooms Taxonomy target level (max): Analyze

12. Takt Time – The pace of production that aligns production with customer demand. Calculated as Planned Production Time / Customer Demand. Blooms Taxonomy target level (max): Create

13. Value Stream Mapping – A tool used to visually map the flow of production. Shows the current and future state of processes in a way that highlights opportunities for improvement. Blooms Taxonomy target level (max): Create

14. Flow diagram (or swim-lanes diagram) – Visual mapping of a transactional / cross-functional process showing tasks sequence for each actor on parallel lanes, to highlight complexity, lost time, irritants, thus showing improvement opportunities and project a target improved process. Blooms Level: Apply

15. Spaghetti diagram – Visual tool to represent the physical flow of products or movements of persons, highlighting wastes, safety or cross-flow quality risks. Blooms Level: Evaluate

16. Layout Planning – Review and discuss different layouts such as product layout, process layout, cellular layout, etc. Blooms Taxonomy target level (max): Apply

17. Single-Minute Exchange of Dies (SMED) – Reduce setup (changeover) time to less than 10 minutes. Techniques include: Convert setup steps to be external (performed while the process is running), Simplify internal setup (e.g. replace bolts with knobs and levers), Eliminate non-essential operations, Create Standardized Work instructions. Blooms Taxonomy target level (max): Apply

18. Heijunka (Level Scheduling) – A form of production scheduling that purposely produces in much smaller batches by sequencing (mixing) product variants within the same process. Blooms Taxonomy target level (max): Understand

19. Kanban (Pull System) – A method of regulating the flow of goods both within the "factory" and with outside suppliers and customers. Based on automatic replenishment through signal cards that indicate when more goods are needed. Blooms Taxonomy target level (max): Analyze

20. Jidoka (Zero Defect Principle) – Aiming for zero-defect, by preventing their occurrence, signalizing, reacting as quick as possible and solving definitively. This relies on various tools and techniques such as Autonomation, Andon, Poka-Yoke, Root-Cause Analysis and Quick Response Quality Control. Blooms Taxonomy target level (max): Analyze

21. Andon – Visual feedback system for the plant / office "floor" that indicates production status, alerts when assistance is needed, and empowers operators to stop the process. Blooms Taxonomy target level (max): Analyze

22. Poka-Yoke (Error Proofing) – Design error detection and prevention into production processes with the goal of achieving zero defects. Blooms Taxonomy target level (max): Analyze

23. Root Cause Analysis – A problem solving methodology that focuses on resolving the underlying problem instead of applying quick fixes that only treat immediate symptoms of the problem. A common approach includes use of Ishikawa (fish-bone diagram) and 5 Whys.. Blooms Taxonomy target level (max): Analyze

24. Risk Analysis – Risk of failure in Lean improvements and processes and how we can consider and reduce them to have a successful projects. Including the concepts of the FMEA method for products, machines, processes or projects. Blooms Taxonomy target level (max): Apply

27. Overall Equipment Effectiveness (OEE) – Framework for measuring loss for a given process. Three categories of loss are tracked: Availability (e.g. down time), Performance (e.g. slow cycles), Quality (e.g. rejects). Blooms Taxonomy target level (max): Understand

28. Standardized Work – Documented procedures for production that capture best practices (including the time to complete each task) in order to avoid variability of practices and favoring sustainability of Kaizen improvements. Must be “living” documentation that is easy to change. Blooms Taxonomy target level (max): Create

29. Sustainment – Discuss importance of maintaining and sustaining results of Lean project after improvement and how it can be monitored through regular meeting and team review and etc. Blooms Taxonomy target level (max): Apply

30. Visual Management – Visual indicators, displays and controls used throughout facilities to improve communication of information. Blooms Taxonomy target level (max): Create

31. Short Interval Control / Active Supervision – Set of standardized management rituals to monitor Safety / Quality / Delivery / Cost performances in a timely manner to allow early reaction and daily improvements, involving field actors (in consistence with Gemba and collective intelligence logic): measurements at the workstation, stand-up operational meetings, Gemba walks, shift hand-overs, relying on the Visual Factory. Blooms Level: Analyze

33. Kaizen task-force workshops – Also known as “Kaizen Blitz or Kaizen Event”. A structured work group improvement event focused in couple of days (typically 3 to 5), involving field players and following DMAIC logic to deliver rapid, accessible, accepted and demonstrated improvements. Blooms Level: Analyze

35. DMAIC (Define, Measure, Analyze, Improve, Control) – A step-by-step methodology to carry out an improvement initiative answering a clear need for change, based on facts and being put under standard for sustainability. Blooms Level: Remember

36. SMART Goals – Goals that are: Specific, Measurable, Attainable, Relevant, and Time-Specific. Blooms Taxonomy target level (max): Analyze

37. Stakeholder Management – Discuss Stakeholder analysis including communication, presenting, reporting and change management. Blooms Taxonomy target level (max): Apply

38. PDCA (Plan, Do, Check, Act) – An iterative methodology for implementing improvements: Plan (establish plan and expected results), Do (implement plan), Check (verify expected results achieved), Act (review and assess; do it again). Blooms Taxonomy target level (max): Analyze

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