THE 10 PRINCIPLES OF LEAN

1. VALUE: specify the added value for the customer

Determine what the customer perceives as value; that's the ultimate test and guiding principle in Lean.

Explanation: many organizations never identify their customers' needs, let alone base their decisions on these needs. Organizations that do identify their customers' needs, seldom bother to ask their customers whether they got it right. Note that internal customers are also considered customers.

2. VALUE CHAIN: define all activities in the process

List every step in the end-to-end process, identify where value is created and map out the value stream.

Explanation: this is about every step in the chain, so every activity performed to deliver the product or service (from design, to delivery, to after-sales service). A value stream map shows how processes are interrelated, which is useful for determining the order of optimization initiatives.

3. FLOW: remove all excess activities

Make sure the products and information can flow freely through the processes. Identify and eliminate waste and shorten the lead time. Use TIM WOODS (Transport, Inventory, Movement, Waiting, Overproduction, Overprocessing, Defects, Skills) to identify possible waste.

Explanation: flow improves lead times and quality while reducing costs. Any activity that does not contribute directly to added customer value is cut from the process. The remaining activities are designed so that the product or service can flow freely towards the (internal) customer.

4. PULL: customer-driven production system

Introduce one-piece flow, and pivot from push to pull. On demand production means the customer at the very end of the production chain pulls the product through all the steps of the production process.

Explanation: the customer triggers the start of your business processes. As soon as the customer triggers the process, activity 1 (e.g. order processing) is executed. This triggers activity 2 (e.g. availability check), and so on. This ensures that work begins only when necessary. Traditionally, batch production is considered more efficient, but practice has proven otherwise. Batch production should be reduced in favor of one piece flow.

5. PDCA: strive for perfection

Apply the PDCA (Plan-Do-Check-Act) circle to processes. Strive for continuous waste reduction and continuous improvement (Kaizen).

Explanation: organizations introduce several smaller improvement projects where necessary. They take many small steps, and sometimes a few bigger steps, and stay the course for several years. This is preferable to introducing a very big project every few years whose results often disappoint. Perfection is obviously out of reach, but it is about having a mindset that is focused on long-term improvement and gradually getting better. That's where Lean is at its best and helps to improve organization and results.

6. 'Go to Gemba': go to the source

Focus on the root causes when looking for solutions to bottlenecks and start looking for ways to improve the situation at the source (Go to Gemba), where it happens and with the people who do the work.

Explanation: it is helpful to follow and analyze a product or service's route through the different departments (walk the process).

7. First reduce variation, then improve performance

When improving processes, first aim for increasing reliability of these processes (reducing variation), and only then set your sights on improving their performance (shifting the average).

Explanation: this leads to structural improvements instead of a zigzag line.

8. Visualize

Visualize performance, bottlenecks and solutions as much as possible.

Explanation: this helps to retain people's focus, collaboration and follow-up. Don't hide data in a process, manual or system, but provide visual information where people need it (on a need-to-know basis). There are powerful visual aids that can help convey the information, like

drawings, photos, yellow lines, flashing lights (Andon lights), improvement boards, dashboards, and so on.

9. Adopt the DMAIC approach and choose Lean tools carefully

Use DMAIC on improvement projects and consciously choose when to use (or not to use) particular Lean tools.

Explanation: DMAIC is a project-based approach to solving a problem whose cause and solutions have not yet been determined. The five phases of this approach—Define, Measure, Analyze, Improve and Control—make up the acronym DMAIC. A DMAIC project has a clearly defined beginning and end. It is systematic, structured and fact-based. Quantification and statistical evidence enable empirical decisions rather than emotional or conjecture-based choices.

Explanation: there are many Lean tools (e.g. Voice-of-the-Customer, Value Stream Mapping, 5S, waste analyses) that are suitable for improvement projects with specific purposes. The trick is to select the right tools for the right purpose. Note: many of these tools have been borrowed from other disciplines, such as statistics, logistics, risk management, change management, et cetera.

10. Lean Leadership

a   Lean leaders solve dilemmas based on long-term customer needs.
b   Leadership includes common sense, a fresh outlook and the ability to listen and ask open questions!
c   If leaders properly do their job, they get teams that serve their customers while continuously improving.
d   Lean leaders have an eye for the human dimension when organizing work and foster discipline in carrying it out.
e   Continuously improving and learning teams need a coaching, service-minded leader.