



LEAN: A WINING WORKING WAY

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The term Lean is beginning to be recognized by Panamanian managers and government leaders. The term was coined in US in the 90s by James Womack, Daniel Jones y Daniel Roos in their book *The Machine that Changed the World*. That “machine” meant the Toyota Production System where the lean work system is borne as part of a philosophy shaped by the scarcity of post-war Japan and as a high efficiency frugal production system.

Lean can be defined as **the elimination of waste** in all production and logistics processes, providing customers exactly what they need and no more. Lean builds upon four tenets:

1. Elimination of waste. Waste is defined as **anything that does not add value in the customer’s eyes**.
2. Using the full capacity of workers: enhanced scope of work and responsibility for process improvement.
3. Integration of suppliers: external part of the production team (partners)- the extended enterprise.
4. Continuous improvement: Kaizen.

These principles are deployed in the design and control activities of the business, mainly in process management where continuous improvement focuses on the elimination of the following eight wastes:

1. Over production: Producing more than the demand for customers, resulting in unnecessary inventory, handling, paperwork, and warehouse space.
2. Waiting time: Customers waiting in line, operators waiting for part or work to arrive.
3. Unnecessary transportation: Excessive movement of materials due to poor layouts and process design, lack of coordination and workplace organization.
4. Excess Processing: Poor design of activities and unproductive time to accomplish them.
5. Too much inventory: Excessive inventory resulting from bad planning and forecasts; obsolete materials.

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6. Unnecessary movements: Waste of time and effort in doing activities as a result poor design of tasks within processes.
7. Defects: Use of materials, time and production capacity for production of defects sorting out bad parts, rework or warranty costs with customers.
8. Poor use of human potential to improve productivity and quality of operations, customer service and continuous improvement.

From the above, it can be inferred that the objectives of lean are improving profits and the return on investment: *How?* Problem-solving activities by workers and management to increase revenues (higher quality products), reduce costs (more productivity and less waste) and decrease assets (less inventory and better use of capacity). So more profits with less assets translates into a higher return on assets.

In conclusion, the lean working way, still not very well known and barely applied in Panama, offers a great potential to improve performance in manufacturing and logistics operations, and, in general, in any activity undertaken by processes.