## **Customer eccentricity**

Business, Marketing



The core idea is to maximize customer value while minimizing waste. Simply, lean means creating more value for customers with fewer resources. A lean organization understands customer value and focuses its key processes to continuously increase it. The ultimate goal is to provide perfect value to the customer through a perfect value creation process that has zero waste.

To accomplish this, lean thinking changes the focus of management from optimizing separate technologies, assets, and vertical departments to optimizing the flow of products and services through entire value streams that flow horizontally across technologies, assets, and departments to customers. Eliminating waste along entire value streams, instead of at isolated points, creates processes that need less human effort, less space, less capital, and less time to make products and services at far less costs and with much fewer defects, compared with traditional business systems.

Companies are able to respond to changing customer desires with high variety, high quality, low cost, and with very fast throughput times. Also, information management becomes much simpler and more accurate. A BRIEF HISTORY OF LEAN Although there are instances of rigorous process thinking in manufacturing all the way back to the Arsenal in Venice in the 1450s, the first person to truly integrate an entire production process was Henry Ford.

At Highland Park, MI, in 1913 he married consistently interchangeable parts with standard work and moving conveyance to create what he called flow production. The public grasped this in the dramatic form of the moving assembly line, but from the standpoint of the manufacturing engineer the breakthroughs actually went much further. Ford lined up fabrication steps in

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process sequence wherever possible using special-purpose machines and go/no-go gauges to fabricate and assemble the components going into the vehicle within a few minutes, and deliver erfectly fitting components directly to line-side. This was a truly revolutionary break from the shop practices of the American System that consisted of general-purpose machines grouped by process, which made parts that eventually found their way into finished products after a good bit of tinkering (fitting) in subassembly and final assembly. ... The problem with Ford's system was not the flow: He was able

to turn the inventories of the entire company every few days.

Rather it was his inability to provide variety. The Model T was not just limited to one color. It was also limited to one specification so that all Model T chassis were essentially identical up through the end of production in 1926. (The customer did have a choice of four or five body styles, a drop-on feature from outside suppliers added at the very end of the production line. Indeed, it appears that practically every machine in the Ford Motor Company worked on a single part number, and there were essentially no changeovers. When the world wanted variety, including model cycles shorter than the 19 years for the Model T, Ford seemed to lose his way. Other automakers responded to the need for many models, each with many options, but with production systems whose design and fabrication steps regressed toward process areas with much longer throughput times.

Over time they populated their fabrication shops with larger and larger machines that ran faster and faster, apparently lowering costs per process step, but continually increasing throughput times and inventories except in the rare case—like engine machining lines—where all of the process steps

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could be linked and automated. Even worse, the time lags between process steps and the complex part routings required ever more sophisticated information management systems culminating in computerized Materials Requirements Planning(MRP) systems.

As Kiichiro Toyoda, Taiichi Ohno, and others at Toyota looked at this situation in the 1930s, and more intensely just after World War II, it occurred to them that a series of simple innovations might make it more possible to provide both continuity in process flow and a wide variety in product offerings. They therefore revisited Ford's original thinking, and invented the Toyota Production System. This system in essence shifted the focus of the manufacturing engineer from individual machines and their utilization, to the flow of the product through the total process.

Toyota concluded that by right-sizing machines for the actual volume needed, introducing self-monitoring machines to ensure quality, lining the machines up in process sequence, pioneering quick setups so each machine could make small volumes of many part numbers, and having each process step notify the previous step of its current needs for materials, it would be possible to obtain low cost, high variety, high quality, and very rapid throughput times to respond to changing customer desires. Also, information management could be made much simpler and more accurate.

PRINCIPLES OF LEAN The five-step thought process for guiding the implementation of lean techniques is easy to remember, but not always easy to achieve: 1. Specify value from the standpoint of the end customer by productfamily. 2. Identify all the steps in the value stream for each product family, eliminating whenever possible those steps that do not create value.

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3. Make the value-creating steps occur in tight sequence so the product will flow smoothly toward the customer. 4. As flow is introduced, let customers pull value from the next upstream activity. As value is specified, value streams are identified, wasted steps are removed, and flow and pull are introduced, begin the process again and continue it until a state of perfection is reached in which perfect value is created with no waste. LEAN ACTION PLAN While every individual or company embarking on a lean journey will have different challenges based on their particular set of circumstances, there are several crucial steps that can help reduce resistance, spread the right learning, and engender the type of commitment necessary for lean enterprise.

Getting Started •Find a change agent, a leader who will take personalresponsibilityfor the lean transformation. •Get the lean knowledge, via a sensei or consultant, who can teach lean techniques and how to implement them as part of a system, not as isolated programs. •Find a lever by seizing a crisis or by creating one to begin the transformation. If your company currently isn't in crisis, focus attention on a lean competitor or find a lean customer or supplier who will make demands for dramatically better performance. Forget grand strategy for the moment. •Map the value streams, beginning with the current state of how material and information flow now, then drawing a leaner future state of how they should flow and creating an implementation plan with timetable. •Begin as soon as possible with an important and visible activity. •Demand immediate results. •As soon as you've got momentum, expand your scope to link improvements in the value streams and move beyond the shop floor to office processes. Creating an Organization to Channel Your Value Streams •Reorganize your firm by product family and value stream. •Create a lean promotion function. •Deal with excess people at the outset, and then promise that no one will lose their job in the future due to the introduction of lean techniques. •Devise a growth strategy. •Remove the anchor-draggers. •Once you've fixed something, fix it again. •" Two steps forward and one step backward is O. K. ; no steps forward is not O. K. Install Business Systems to Encourage Lean Thinking •Utilize policy deployment. •Create a lean accounting system. •Pay your people in relation to the performance of your firm. •Make performance measures transparent. •Teach lean thinking and skills to everyone. •Right-size your tools, such as production equipment and information systems. Completing the Transformation •Convince your suppliers and customers to take the steps just described. •Develop a lean global strategy. Convert from top-downleadershipto leadership based on questioning, coaching, and teaching and rooted in the scientific method of plan-do-check-act . Integrate Six Sigma, Lean and Kaizen People spend months drilling the Six Sigma process and statistical tools 1-Sample Sign Test This is used to test the probability of a sample median being equal to hypothesized value. H0: m1 = m2 = m3 = m4 (null hypothesis) Ha: At least one is different (alternate hypothesis)