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A Perfect Time to Choose Lean!

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President Ronald Reagan said it best, "Recession is when a neighbor loses his job. Depression is when you lose yours." Today, we all know that not only has recession taken deep roots but its far-reaching branches are causing a panic of global depression. What are our options? Should we maintain status quo or invest in technologies that could give us a shot at avoiding the painful path towards depression? According to quality guru, W. Edwards Deming, "It is not necessary to change. Survival is not mandatory." Thus, it is clear that the choice is ours – we can choose to work our way out of this quagmire or we can choose to resign ourselves to whatever fate delivers.

Lessons from History

In the 1950's, Toyota then a small Japanese company, faced a similar struggle and was on the verge of bankruptcy. It made the choice to survive. As the say the rest is history - Toyota not only survived but captured the global automotive market in 2006 and has been at the top ever since then. Even today, when the 'Big 3'and others in automotive market are gasping for air under the strong currents of the economic crisis, Toyota is able to mitigate the impact significantly. One of the primary reasons for Toyota's tenacity and superiority is the culture it has created within its entire value chain using a tool called Toyota Production System (TPS) or lean technology.

What is Lean Technology?

Lean technology is a philosophy of making a conscious choice to radically redefine and dynamically optimize strategy, systems, processes and services and add value to clients, employees and shareholders.

Lean is a powerful common-sense tool used globally to eliminate waste from organizations, processes and systems. The focus is on creating value for the client and eliminating anything considered non-value added. Lean can be applied to eliminate waste in corporate offices, government, manufacturing, software development, energy utilization or any processes that are used by any industry, organization or entity. Lean can also be applied to projects to reduce project timeline and cost and improve quality. Also, Lean can be used by individuals or families to eliminate non-value added tasks and activities from their day-to-day lives so that they can focus only on the critical things which add value.

There are several companies globally who have benefitted from Lean not only by leveraging millions of dollars in cost savings, but also in superior client retention, gaining a competitive advantage and a developing a strong and lasting culture of continuous improvement.

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Lean is now a universal term for a compilation of core operation and improvement tools and services that can help any organization continuously and rapidly improve in order to deliver products or services of the highest quality, at the lowest cost, in the shortest amount of time.

Advancements to Lean Technology

In the 1980's, as micro-chip technology advanced further and as computers, cell phone and other popular consumer products flooded the market in millions, reliability of these products became critical. The tool which was developed to address this was Six Sigma. Using Six Sigma tools allowed companies achieve near perfect quality. This became a competitive advantage and a growth strategy for companies like Motorola, GE and others.

Sigma is a statistical term that measures how far a given process deviates from perfection (which is represented by the mean of the normal bell-curve). Thus, Six Sigma refers to the a statistical, data-driven approach to strive for near perfect quality (3.4 or less defects in a million) in any process - from manufacturing to transactional and from product to service. Six Sigma has structured phases similar to project life cycle management which are defined as DMAIC (Define, Measure, Analyze, Improve and Control).

A major drawback of Six Sigma is that it is a time consuming project and there are several cases within the hi-tech industry, where that the Six Sigma projects exceed the life cycle of the product being improved. In order to address this drawback, practitioners combined the proven power of Lean to provide rapid improvements with Six Sigma quality tools and created Lean Six Sigma.

What is Lean Six Sigma?

Lean Six Sigma is an approach to combine the power and speed of Lean with the quality improvement focus of Six Sigma. Thus, **Lean Six Sigma means almost perfect quality at a high velocity.**

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The following is a basic comparison of Lean and Lean Six Sigma technology:

LEAN	LEAN SIX SIGMA
Rapid Efficiency improvement	Rapid Quality improvement
Waste & Cost Reduction	Rapid Defect reduction
Continuous Improvement is a goal	Quick elimination of root cause(s) is a goal
Culture Change across organization is expected	Some culture change is expected
Uses Kaizen approach	Uses Kaizen & accelerated DMAIC methodology
Quick results	Moderately quick results
Limited root cause analysis	Extensive root cause analysis
Software is not required to implement	Statistical software is required
Requires personnel with basic Lean training	Requires a few highly trained Six Sigma personnel
Can be used universally across all application types	Most suited for very high volume applications
Can be used to address 95%-99% of issues	Applicable to specific quality problems (1%-5%)
Not very expensive to implement	Moderately expensive to implement

Lean, Six Sigma and Lean Six Sigma explained using a basic analogy:

Using a basic analogy of several patients rushed to a hospital after a major car pile-up:

Using Lean approach –a team of several doctors and nurses would rush the patient to ER, quickly analyze the patients, triage patients based on severity of injuries; take care of the most severe injuries first, stabilize them; then focus on patients with less severe injuries. Provide additional treatment to critically injured patients and continuously monitor their progress till released from ER.

Using Six Sigma approach – a team of highly trained doctors would focus on patients with severe injuries and subject these patients to a series of tests - checking for deviations from normal functionality of major organs and systems; identify problems; discuss till agreement is reached regarding the root causes of the complex injuries; then administer the correct treatments and surgeries with great precision so that the patient can be back to normal when discharged; ensuring that there is no possibility of a relapse. The drawback is that the patient with severe injuries may have to wait several hours for the analysis to be complete and accurate.

Using Lean Six Sigma approach **–** a team of highly trained doctors along with other doctors and nurses would rush the patients to ER, quickly analyze the patients, triage patients based

on severity of injuries; take care of the most severe injuries and in parallel run a series of tests quickly on the most severely injured patients, identify complex problems rapidly, determine the probable root causes and immediately administer the treatment to stabilize the patients and get them back to normal health; ensuring that there is no possibility of a relapse.

Why use Lean or Lean Six Sigma?

Currently there is unnecessary complexity resulting in tremendous waste in all public and private sectors of our country like manufacturing, healthcare, government - both federal and state, IT, service industries and even non-profits. Can you imagine the progress our country could make by eliminating the waste?

Albert Einstein said, "Simplicity is the greatest form of sophistication." Simplicity results in more manageable processes that are easy to control, monitor, change and improve. Some of the current economic crisis could have been avoided if the processes and systems were so simple that monitoring was more transparent, immediate accountability was possible and corrections could be made at the initial stages of detection of abnormalities.

If we make the choice to survive, the only way we can get out of this crisis and avoid a similar situation in the future is to accept full personal responsibility as individuals, corporations, governments and as a nation. We must admit that we are all predisposed to unnecessary complexity, greed and resulting waste to varying degrees. We must wage an immediate **"war on unnecessary complexity"** and a **"war on waste"** in our processes, projects, systems, government and in our lives.

Lean and Lean Six Sigma tools have the ability to truly transform culture. Organizations must invest in lean operations for one simple reason: Their long-term survival and success depend on it. Organizations that understood and applied lean values, principles, and processes have experienced very significant benefits such as the following:

- ✓ Lead time reduction of up to 75%
- ✓ On time delivery rate up to 100%
- ✓ Productivity improvements of over 80%
- ✓ Scrap reductions of up to 95%
- ✓ Space utilization improvements of over 25%
- ✓ Set-up time reductions of over 85%
- ✓ Machine down time reductions of 70%
- ✓ Total project time reduced by 70-90%
- ✓ Project rework reduced by 60-90%
- ✓ Project costs reduced by 50-70%

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Thus, the current economic crisis is a perfect time to invest in this time-tested 'engine', called Lean technology and its quality-focused version Lean Six Sigma. Not only can will it help us survive this economic crisis but also allow us to build a resilient culture of optimized corporations, governments and individuals whose core philosophy is to continuously add value to clients, employees and shareholders so we can thrive for several generations.

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