**“Toyota is not lean”**

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***Lean and Six Sigma aren't the answer to improving your hospital. Being like Toyota is, but that doesn't mean the answer is gemba walks and value stream maps. Don't let the consultants fool you.***

The Lean approach to process improvement gets a lot of attention in healthcare. First appearing in the 1990s, Lean management was touted as a way to remove waste and add value to processes. The theory was largely based on the practices of Japanese carmaker Toyota, a company that, at the time, was rapidly stealing market share from U.S. competitors.

Its success, combined with its leaders' unusual openness, made Toyota one of the most, if not the most, studied and written about organizations of its time.

Today, thousands of consultants help organizations, including those within the healthcare industry, implement Lean and Six Sigma techniques.

To be clear, Lean and Six Sigma are quite different, though they have similar goals.

Lean focuses on removing waste, improving efficiency and improving value through a set of specific processes and tools, many of which were derived from processes and tools observed at Toyota (e.g., gemba walks, value-stream mapping, Heijunka, just-in-time, etc.).

Six Sigma, which arose out of Motorola in the mid-1990s and was famously used by GE's Jack Welch, can be best described by an acronym: DMAIC — define, measure, analyze, improve and control.

Despite the popularity of these approaches — and the millions of dollars companies spend on them — neither has conclusively been shown to consistently improve company performance.

In fact, a 2007 study summarized by the [*Wall Street Journal*](http://online.wsj.com/articles/SB116787666577566679) found Six Sigma companies performed more poorly than competitors who hadn't implemented the program, as judged by stock performance of the Six Sigma companies compared to the S&P 500 (see Figure 1).

**Figure 1 – Stock Performance of Publicly Traded Companies Implementing Six Sigma**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **When Implemented Six Sigma** | **Stock Performance During Period of Implementation-2007** | **S&P 500 Performance for Same Period** |
| Home Depot | -8.3 % | July 2001 | +16% |
| Honeywell | -7.2% | January 2000 | -3.6% |
| GE | -16% | July 2000 | -2.6% |
| 3M | -1% | December 2003 | +29% |

*Source: QualPro analysis of Six Sigma performance vs. S&P, January 2007.*

A similar analysis — this time of companies that implemented Lean processes — performed by John Kenagy, MD, founder of healthcare consulting firm Kenagy & Associates, found Lean companies fared better, but still underperformed companies that skipped out on the Lean/Six Sigma bandwagon altogether (See Figure 2). *Editor's note: Because the companies analyzed implemented Lean in the 1990s, Dr. Kenagy assessed the company's performance during 2000-2007 to mirror the periods examined by the QualPro analysis.*

**Figure 2 – Stock Performance of Publicly Traded Companies Implementing Lean**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company** | **Time Period Assessed** | **Stock Performance During Period** | **S&P 500 Performance for Same Period** |
| GM | January 2000-2007 | -40% | -3.6% |
| Daimler/Chrysler | January 2000-2007 | -21% | -3.6% |
| Ford | January 2000-2007 | -65% | -3.6% |
| Delphi | January 2000-2007 | -81% | -3.6% |

How did Toyota fare during this period?

|  |  |  |  |
| --- | --- | --- | --- |
| **Toyota** | **January 2000-2007** | **+44%** | **-3.6%** |

The finding surprised many executives and Wall Street observers, but it wasn't actually surprising to the company that had originated it all: Toyota.

**Toyota's success is not because it's Lean**Back in the mid-1990s, Toyota leaders were perplexed by this very issue: Hundreds of companies across all industries had replicated Toyota's tools and other Lean processes, but few were able to replicate Toyota's performance. Toyota wondered why, and reached out to two Harvard Business School professors — Steven Spear and H. Kent Bowen — to find out.

The carmaker knew its only competitive advantage was the Toyota Production System, and it wanted to engage in a discovery process around why TPS seemed so much more effective than Lean: Was there a critical component the Lean consultants missed?

Spear and Bowen studied for Toyota for four years, and discovered that indeed, there was a critical component missing:

"So why has it been so difficult to decode the Toyota Production System? The answer, we believe, is that observers confuse the tools and practices they see on their plant visits with the system itself. That makes it impossible for them to resolve an apparent paradox of the system — namely that activities, connections and production flows in a Toyota factory are rigidly scripted, yet at the same time Toyota's operations are enormously flexible and adaptable…**the rigid specification is the very thing that make the flexibility and creativity possible**," the two wrote in a [*Harvard Business Review*](http://hbr.org/1999/09/decoding-the-dna-of-the-toyota-production-system/ar/1) report on their findings (emphasis mine).

Thus, Toyota has Lean processes and tools, but processes and tools aren't enough.

Dr. Kenagy, who spent two years studying Toyota during his time as a Harvard Business School visiting scholar, came to the same conclusion.

"In two years at Toyota, I never 5S'd anything, and I never went to a Kaizen event," he says. "Consultants observed 5S, poka-yoke, just-in-time, and those became Lean. It was the collection of the tools. They took the idea of Kaizen as continuous improvement, and made it an event."

But continuous improvement is not an event or project, it's just that: continuous.

The narrow, project-based focus is likely the reason so many companies have failed to realize the same results as Toyota.

"Projects don't change the baseline," explains Dr. Kenagy. "You have to move out of the project framework." But how do organizations do so?

By embedding continuous improvement into the culture (and more specifically, the [mindsets, methods, strategies and structures](http://www.beckershospitalreview.com/healthcare-blog/ceos-love-talking-about-culture-here-s-why-they-shouldn-t.html)) of the organization, and enabling and empowering employees to adjust and adapt their work in real time if doing so improves the organization's product or service in some way.

Six Sigma fails because it relies on sending information up to leaders who make decisions, which are then sent back down to the middle managers and front lines to be implemented. This layout is problematic because it takes time and moves decisions further away from those most familiar with the work. (I've previously written about this concept on this blog in a post titled "[Peter Drucker's brilliant 47-year-old idea to transform healthcare](http://www.beckershospitalreview.com/healthcare-blog/peter-drucker-s-brilliant-47-year-old-idea-could-transform-healthcare.html).")

There's just too much data available today to send it up to managers for every decision; doing so creates a bottleneck that slows the organization's ability to adapt and adjust to market changes.

"When work becomes complex, dynamic and unpredictable, you can't get data up quick enough," says Dr. Kenagy, who has developed a theory for healthcare innovation, called[Adaptive Theory](http://www.beckershospitalreview.com/healthcare-blog/steve-jobs-didn-t-disrupt-he-adapted-so-should-healthcare.html), that encompasses these principles. "It's not a failure of the people; it's a system failure."

And while Lean does produce slightly better results for the organizations that implement it, its project focus hurts its true potential. Ironically, this is the same potential the Toyota Production System wholly enables: empowering employees to continually explore their workplace and make rapid decisions and process improvements as close as possible to where the work is being done. This takes creativity and flexibility — two things Toyota valued but consultants didn't adequately acknowledge in their methodical and cookie-cutter approach to Lean.