



Measuring success means having the right KPIs

I know that I've written about measurement before, but that was about posting your Lean gains. Now I want to talk about what to measure. Why take the time to talk about this? Because quality management works and it pays off.

Some research released in June 2012 from the Chartered Quality Institute and Chartered Management Institute of England, entitled "The contribution of quality management to the U.K. economy," sheds some light on the benefits of adopting quality management approaches – both to an organization and to the economy as a whole.

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The report calculates that:

- For every £1 spent on a quality management program, costs were reduced on average by £16;
- For every £1 spent on a quality management program, revenues were increased by £6;
- Overall, quality management practices contributed 6 per cent of U.K. GDP or approximately £90 billion to the U.K. economy in 2011; and,
- Lastly, if quality management programs were adopted fully throughout the British economy, an additional £52 billion could have been added to the country's overall GDP and upwards of 500,000 jobs could have been created.

So now we know there are real outcomes, but what do we want to mea-

sure? A recent LinkedIn discussion on the Toyota Production System Network asked "Which KPIs are most important or vital for the manufacturing industry?" In short, they were asking about the top five KPIs.

One person wrote:

1. Sales orders
2. Profits
3. ROI
4. Profit margins
5. Warranty costs

Another wrote:

1. Yield
2. Effectiveness (OEE)
3. Labour efficiency
4. Scrap
5. Operator skill level/flexibility

Yet another wrote:

1. Material management KPI
2. Purchase order management KPI
3. Productivity KPI by functional group
4. Quality assurance KPI
5. Plant maintenance KPI

These are quite good, but they do reflect the hands-on bias of many readers in this group. I prefer the following for "top" KPIs because they tie into the larger view and they include safety and morale. Some of the suggestions for the top five include items that are seasonal (e.g., sales orders) or might not be preventative – like quality "assurance" and inspections as opposed to building in quality at source.

Here are my top KPIs:

1. Quality
2. Cost
3. Delivery
4. Safety
5. Morale

Let's take a look at these items one at a time.

1. Quality: Define it however you want but make sure that everyone in the plant (this includes the office, sales, warehousing, etc.) knows what you mean. Everyone should have a measure that ties directly into the top-level KPI

for quality. They need to see how their quality impacts overall quality.

2. Cost: All said, the cost of production should be going down and the profit should be going up. Finding sources of waste and eliminating them is the best way to reduce costs. Otherwise, you'll try to fix your costs as given and then add to the purchase price to achieve your profit.

3. Delivery: Whether it's on-time delivery to your client or simply on-time delivery to the next stage in the production process, you've got to make sure that everyone is aware of this important dimension. An andon board is very useful here. When everyone is green for good, the delivery will be on time.

4. Safety: "It hasn't happened yet" is not good enough. You may not have had a major accident yet, but that doesn't mean your workplace is safe. I encourage you to read Charles Duhigg's book, *The Power of Habit*, and his description of Alcoa and the safety "habit" – it prepared the way for Lean changes.

5. Morale: Go ahead and post your standardized morale survey results. Lean is all about bringing respect to people, so why not show your gains?

So now we know what we want for our top level KPIs. And we know what we've long assumed – that Lean process improvements really do pay off. To separate your plant from those that have tried and failed at Lean, keep everyone's eye on their site-specific measurable and how they connect to your top five. Don't let their attention wander or allow them to become distracted by the most recent "fire." You'll always have challenges, but you'll be judged by how you keep people on track! 🍁

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QUESTION FROM THE FLOOR...

Question: I'm a trainer with some experience in Lean. Could you give me a few examples of illustrative cases to use in my teaching?

Answer: Be happy to! Here are some cases and stories I've used across different sectors.

- Just ask people how they would feel if they came home and found out you had just purchased 10,000 tins of canned beans and stored them in their garage, and your only defence was that they were on sale! It's not a saving if you've got to pay for storing it.
- Ask them about their drive into work or home. You can teach the concept of flow relatively easily. The traffic is not going to "flow" if people brake for random hallucinations! Or you can

show them a YouTube video on the formation of a "phantom traffic jam" to show how traffic should flow and why it doesn't.

- A good example of poke yoke is the kill function on the handle of the mower. If the handle is let go, the mower engine is turned off.

- A good example of one of seven deadly wastes is waiting. Ask someone who's taken a person to the hospital about "hurry up and wait!"

- Another is over-processing. I once asked about a multipart self-carboning form. Only the top sheet (of five) was used. I asked about the other four. They said they didn't know. They were, in fact, collected at the end of the day and put into the dustbin! (I watched!)

Be imaginative and you'll soon see examples of where Lean is needed everywhere! 🍁

BOOK REVIEW

CREATING MIXED MODEL VALUE STREAMS: PRACTICAL LEAN TECHNIQUES FOR BUILDING TO DEMAND, 2ND ED.

By Kevin J. Duggan

Duggan's expertise pays off when discussing high product mix, scheduling problems, shared resources and unstable customer demand. Many times I find clients wondering about how their Lean initiatives will fare when addressing these issues. They wonder about how their Lean tools and best practices will get them by when considering such things as mixed model production, for example. Now I can point out how Toyota does it or present them with different texts and examples, but Duggan's book is an excellent alternative.

Becoming familiar with the use of straightforward value stream maps is certainly good. For anyone who is trying to make improvements beyond those embodied in a basic value stream map, this book is well worth reading.

This second edition builds on the real-world complexity of implementing Lean in a mixed model environment that the first edition introduced so well. It contains new information for constructing product family matrices, updates to sections on mixed model value streams and expands on mixed models by taking on such issues as takt capability, heijunka (load level scheduling) and sequenced first-in, first-out (FIFO) lanes

Becoming familiar with the use of straightforward value stream maps is certainly good. For anyone who is trying to make improvements beyond those embodied in a basic value stream map, this book is well worth reading. It will show you how to implement a Lean value stream in a way that everyone will understand. It translates the theory of Lean into practical guidance for use in the day-to-day events that we all face. An issue that I see clients struggle with is, "How do we make product flow when there are a variety of products in the same value stream?" This book will help you understand flow in complex situations. 🍁