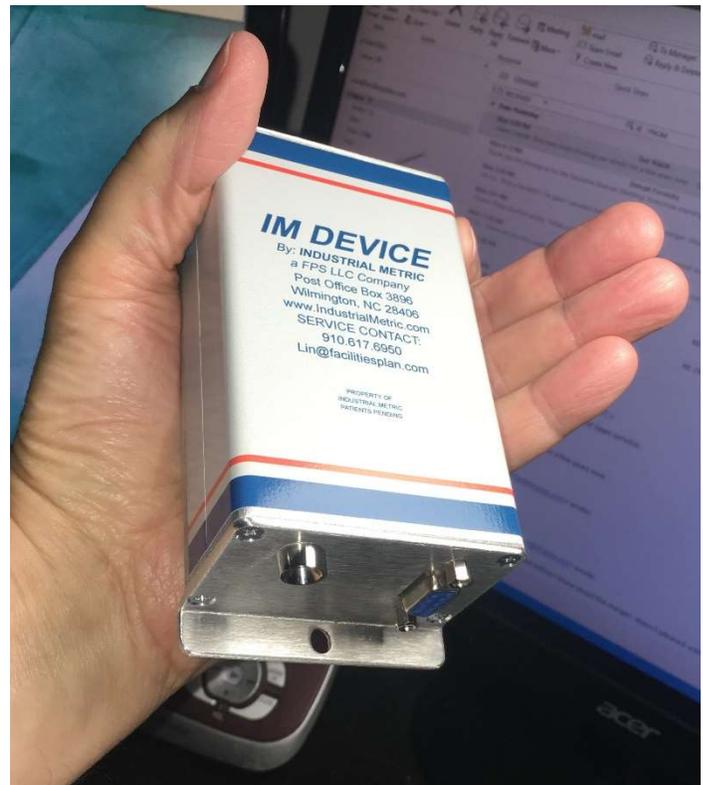# New Startup Brings IoT to Lean Six Sigma

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At the end of <u>The Goal</u>, the manager (Alex) talks about the future he wants to create for his company:

"… can you imagine what the meaning is to being able to hone in on the core problem even in a complex environment? To be able to construct and check solutions that really solve all negative effects without creating new ones? And above all to cause such a major change smoothly, without creating resistance but the opposite, enthusiasm? Can you imagine having such abilities?"

We all want to improve our manufacturing and distribution processes, right?

So why is it so hard?

There are lots of obstacles, of course, but one of the biggest barriers to implementing improvements in supply chain facilities has always been our ability to accurately measure and analyze end-to-end processes.

The beginning of the new year brings good news on that front! My friend Lin Brown has just launched a startup in North Carolina that aims to leapfrog this problem with a simple, elegant solution based on Internet of Things (IoT) technology. Lin has been around this industry for a long time, and has worked in facilities all over the world. His new company is built to solve a problem that many of us know far too well:

"How can we get better data about a process, so that we can pinpoint and improve the gaps?"

From my experience, I'd argue that there are three powerful forces that frequently undermine efforts to get good measurements:

1. Easy vs. Useful. We tend to measure the things that are easiest (and cheapest) to measure, even though these may not help us really understand the key steps in a process.

2. Garbage In, Garbage Out. The data that we do get is full of errors, either from the people or from the machines that collected it. Unless we understand how the data is gathered and cleaned, we may not even realize how inaccurate it is.

3. Compiling Chaos. Data gets collected in a variety of formats and stored in multiple systems. Reconciling this data is time-consuming and complicated.

Lin's new company Industrial Metric (IM) elegantly solves all of these problems with a cloud based analytics platform that is tied to sensors in a manufacturing or distribution facility. The sensors collect data from key process steps in real time, and send it securely back to a central repository in the cloud. Just log in to the dashboard from any computer and, ta da, you have a real-time view of how your end-to-end process is performing. And, of course, it can send out alerts when something unexpected happens.

There are a handful of companies that have already begun to use IM, and the early feedback is positive. From what I've seen, I think IM could be poised to become every Lean Six Sigma Black Belt's best friend. Think about the impact that this system would have during each step in a DMAIC process improvement project:

- **Define**: The IM dashboard highlights inconsistencies, showing you where you have opportunities for improvement.
- **Measure**: The IM sensors provide accurate measurements that allow for an objective baseline of current performance.
- **Analyze**: IM data can be collected on test runs for proposed modifications, to validate their potential benefits.
- **Improve**: The IM dashboard makes it easy to demonstrate the impact of improvements at the level of each individual step, and at the higher levels of an end-to-end process.
- **Control**: Ongoing monitoring by IM ensures that gains are maintained over time.

For me, IM is like a Fitbit... for an entire facility. I've become obsessed with my Fitbit, and it has absolutely caused me to change my behavior. The feedback I get tells me how much exercise I've gotten each day, and how my heart rate and weight have changed as a result. It's hard to argue with the data! And isn't that exactly the sort of feedback loop that we need to have in order to drive and maintain process improvements in a supply chain facility? IM is a simple, fast, and flexible way to connect actions with results… just like a Fitbit.

There's obvious value for a supply chain manager to be able to view the performance of their facility in one dashboard. But there are three other unique things about the way that Lin has designed the IM solution that really stand out for me.

First, when was the last time you tried to get a new piece of supply chain technology approved by your IT department? Security procedures are tight, and getting tighter with every cyberattack that hits the news. But because it is simple, lightweight, and requires no integration with existing systems, it should be easy to get IT's blessing for an IM installation. Rather than tying in to a company's complex control systems and network infrastructure, IM is designed to run entirely independently. The sensors connect to the internet via the cellular network. Since IM is not connected to your local network, it can't be used by hackers as a backdoor into your systems. And, besides, the data that IM is collecting is of limited value to a hacker anyway.

Second, because it runs in the cloud, IM simultaneously provides exactly the same view to people in the facility and to the folks back at HQ. There's no question about how a facility is really performing. This "single source of truth" approach ensures that people are focused on results, because it eliminates so many sources of error and subjectivity. And with multiple facilities running IM, you could even benchmark between them, while monitoring performance across the entire network.

Third, IM is designed to work with a wide variety of sensors. So rather than settling for data from whatever things are easiest to measure, you can actually get metrics from the steps that give you the best information about your process. It's just a question of finding the right sensor to measure each step, and then plugging that sensor into the IM system.

Some of the biggest "breakthroughs" in the supply chain come from combining relatively simple ideas in a clever new way. (For example: robots + movable racks = Kiva). Industrial Metric is using this philosophy to combine Lean Six Sigma with the Internet of Things. Deploying sensors throughout a facility to create a real time dashboard is a simple, but powerful new approach to providing managers and executives with the information we've always needed.

Faced with the pressures of competition and automation, supply chain professionals need to be focused on ways to innovate and improve our processes. I'm looking forward to following Lin Brown's new endeavor, and expect to see Industrial Metric enabling us to make truly fact-based decisions and take smarter, faster actions that will create real value for our customers, our shareholders, and our supply chains. And that, in the end, is what The Goal is all about!

Michael Frost - Supply Chain professional experienced in Global manufacturing and Logistics.

Looks promising, wonderful innovation.…

Bruno E de Oliveira, CSCP - Strategy and Governance manager at Caterpillar Inc.

Thanks Daniel!! Nice concept... this is a great example of innovation in the manufacturing environment to generate better performance.…

Dave Dixon - Supplier Development Engineer at Caterpillar Inc.

Pin point as always **Daniel Stanton**…

Carmen Juarez - SAP Supply Chain IS&S Project Leader at Plasticomnium Auto Inergy Systems Division

I loved this article, nice job!…

Steven Brown - Owner at Virginia Artesian Bottling Company

We are interested. We would like to learn more and do a test application. We will contacting Industrial Matric.…

Marty Groover - Manufacturing Intelligence Director | IT & OT Capabilities | Project Management | Supply Chain…

Great article, there is much opportunity in that space. Will be interesting to do if the lid capability will become part of your ERP systems to recover investment.…

Daniel Stanton - Thanks **Marty Groover**. I totally agree. One of the things that's interesting about the IM approach is that it provides an objective, independent check against what any ERP is doing... or says it is doing.…

Dan Quinn - Independent Consultant

Thanks Daniel, terrific concept.…