Process excellence in the spotlight

Greater efficiency with Lean Management

Interview with Dr. Marc Waelti, Head of Operations, Laboratory Weighing, Mettler-Toledo

Based on the successes achieved by the Toyota Production System, the concept of lean (i.e. streamlined) manufacturing has become established internationally since the 1990s. The topic is now becoming increasingly relevant for a highly-regulated sector of industry in which the focus is on maximum product quality along the entire value chain. q&more talked to Dr. Marc Waelti from Mettler-Toledo about the role of lean theory and practice in the development of solutions for labs and processes.

Dr. Waelti, "Lean Management" can be understood as a management philosophy that uses a more intelligent approach to organization to eliminate waste operations within production and administration. What significance does this topic have for your company?

Lean Management is very important at Mettler-Toledo. Beginning with Production, we started to optimize our processes and organizational set-up in line with the principles of Lean Production a few years ago. In subsequent steps, we then extended lean philosophy to areas outside Production. First, we continued along the value chain – both towards the customer and towards the supplier. As a next step, we are now also extending Lean Management to other areas such as Development and Administration. Our efforts in this area focus on satisfying customer requirements at all times while simultaneously avoiding all forms of waste ("muda"). The term "muda" refers to any activity that consumes resources but offers no value to the customer. You also have to appreciate that the implementation of Lean Management is a never-ending journey. Once the foundations have been laid, the aim is to achieve continuous improvement by the targeted deployment of the methods and tools. It's also important to strive for optimum utilization of all of the available resources. And I'm not talking about working as hard as possible here, but about using the good, creative ideas of all employees – and visitors, where possible – to achieve continuous improvement.

Instruments from Mettler-Toledo are used in research-intensive sectors in particular. How can lean be utilized here?

Lean Management can be successfully deployed within any industry. Customer requirements for the respective industry have to be well understood, however. These customer requirements also include regulatory requirements – and standards, quality models and so forth in particular. While the implementation plan needs to be carefully tailored to individual needs, the goal is always the same: the avoidance of activities that do not create value. The lean methods that are deployed are also always the same: the degree to which particular methods are deployed will depend on the processes in question.

Could you give us an example of a "lean solution"?

I'd like to use an everyday example – inviting some friends over for a coffee. Let's imagine that I've asked three friends to be at my house for coffee at 3 PM. So I start making the coffee at a quarter to three. I try to estimate how many cups of coffee we're going to drink. I then fill up my trusty filter coffee machine with the right amount of water. I then look for my pack of coffee beans and grind the approximate amount of coffee that I'll need. I now need to find the filter. I finally track it down and then fit it into the machine and fill it with ground coffee. I spill some powder onto the counter. Doesn't matter, I think, wiping it away – no-one will notice the coffee's a bit weaker – and I start the machine. It's now about five to three and the coffee's brewing nicely.

The phone rings. Something's come up and one of my friends has to take a raincheck. Well, OK, there'll just be some coffee left over. The doorbell rings. My two other friends have arrived. I invite them in, ask them to sit down and offer them a coffee. One of my friends eagerly hands me his cup, but the other asks me if it wouldn't be too much trouble to get a decaf? I'm a bit nonplussed. Of course, I can now go ahead and brew up some decaf but I'd have to empty the coffeepot and make a new batch – that'd take 15 minutes. Or I could just apologize and say I don't have any decaf in the house – and disappoint my friend. My little coffee event hasn't really gone to plan. And this is true of many of our day-to-day processes.

But a lean solution might look much like this: It's ten to three and I'm pottering about, laying the table. When my friend calls me to say he can't come, I spend a minute chatting with him on the phone. I then fill up the water tank in my capsule coffee machine. The doorbell rings soon after and I invite my two friends in. I ask them how they'd like their coffee. One friend would prefer a strong espresso, while the other wants a decaf latte. So I go to my coffee machine, take the espresso capsule sitting in the capsule dispenser on the left and brew an espresso. Now engaged in lively conversation with my friends, I then move on to brewing the decaf latte. The decaf capsule is on the far right of the dispenser in a row marked with a red label. The coffees are now ready and we sit down at the table.

I hope you can see the difference. In the second example, I satisfy the customer's needs quickly and precisely. And I only start the value creation process when I know what my friend wants. There's no spillage and I don't make too much coffee – or the wrong coffee. I don't waste any time looking for things. Since I always keep my capsules in predefined locations, I avoid a situation where I use the wrong capsule. And because it's especially important to use my decaffeinated coffee only when it's explicitly asked for, I've added a red label as an extra safety precaution. These are all elements of Lean Management.

Toyota's maxim is that good products can be manufactured only by good employees. How do you motivate your employees in-house to embrace "lean"?

When introducing Lean Management, it's especially important to realize that this decision involves major changes for employees – and that negative emotions can be the initial response. Staff may resist or challenge such changes. You therefore need to educate the workforce about the reasons for the change: they need to be shown the goals and strategy and get trained-up in the subject.

Marc Waelti studied materials science at ETH Zurich, Switzerland. In 1995, he joined Siemens Building Technologies in Volketswil (Switzerland) while working towards his doctorate in the Institute for Quantum Electronics at ETH Zurich. This was followed by management positions in the development of microsystems at Corning IntelliSense in Wilmington (USA) and Phonak Hearing Systems in Stäfa (Switzerland). In 2004, he moved into production, first as Director Corporate Manufacturing Engineering at Phonak, then as Vice President Operations at Sensirion AG (Switzerland). From 2011 he has been Head of Operations Laboratory Weighing at Mettler-Toledo in Greifensee (Switzerland), where he oversees the production of lab balances, mass comparators and moisture analyzers. He is particularly interested in the achievement of operational excellence, to which he applies his wide-ranging industry experience gained in building safety/security, telecommunications, medical devices, microsensors, automotive and precision instruments, combined with his expertise in Lean Six Sigma and SCOR.

Measures need to match the current level of employee awareness. Trust is created by quickly achieving some initial successes as a team. As everyone – and management in particular – starts to live the lean philosophy the new behavioral patterns will slowly become second nature. The program can now be extended in a series of further stages. Goals and roadmaps are drawn up, and standards are defined. And the workforce is involved at all times: at any point in time, they're clear on their goals and know where they stand. Their ideas and suggestions are accommodated. They are encouraged to implement some improvements independently and get actively involved in the rollout of larger-scale improvements. And, as said, it's important to remember that the changeover to Lean Management is primarily a "people challenge" – and not a technical problem.

■ **Dr. Waelti, thank you very much for your time.**

(Dr. Waelti was interviewed for q&more by Claudia Schiller.)

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