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SERVICING LEAN

Examining the adoption of lean in the service industry.

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Services: lessons from Toyota: How did the leanest of companies apply the principles it developed in manufacturing to services? *Niklas Modig, Ryusuke Kosuge and Pär Åhlström* of Stockholm School of Economics talk about Toyota Sales Logistics.

Services and standards: stand off or stand up?: *Sarah Lethbridge*, senior research associate at the Lean Enterprise Research Centre, discusses the role of standards in a continuous improvement programme in a service environment.

A value creating paradigm: *Dr Ahmed Al-Ashaab* shares with LMJ the research on lean product development he is leading at Cranfield University.

American the Lean: LMJ crosses the Atlantic Ocean to look at examples of lean implementation in the United States. The five case studies included in this *It's a lean world* special are introduced by *John Shook*, chairman and CEO of the Lean Enterprise Institute.

The Harada Method: Norman Bodek and David Fennig talk about a new methodology to develop people in a company focused on improving.

The Fifth Column: In this month's column, *John Bicheno* (in disguise) addresses some of the most common misconceptions about lean in services.



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Safe people and efficient machines

SCGM's CEO, *Sandra Cadjenovic*, gives LMJ an account of what the company has accomplished on the field in the last month.



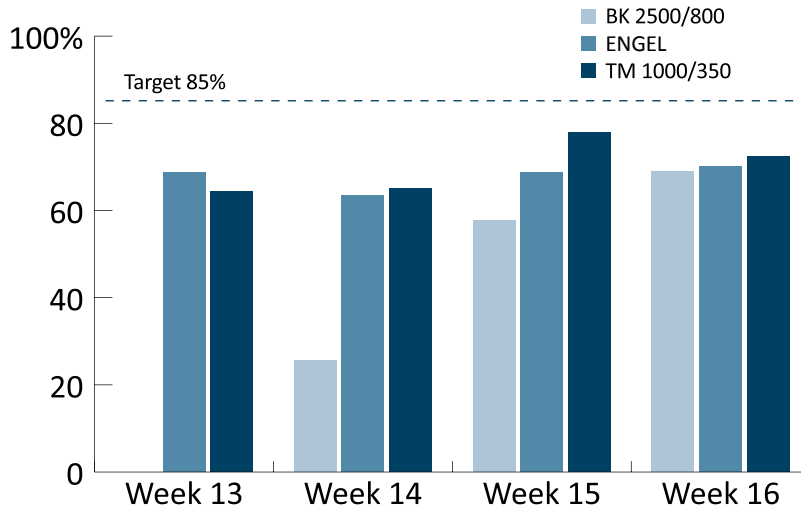
Dear readers, another month has gone by and here I am informing you on SCGM's latest progress with lean implementation. Time flies, and change happens quickly in our company. The last article focused mostly on lean safety and how we started implementing it. Since then, we took the first steps of the reactive phase: the Safety Board has been put up. You can see four indicators on it (on the left): Heinrich Pyramid, layout of the company, body outline and a green cross where the Safety Team has started to track the injuries, hazards, unsafe conditions and behaviors occurring in the firm.



All employees have been explained how to fill in the injuries form with a given example and a notice (name/when/where/what part of the body was injured). Thanks to this, they have become aware of the importance of knowing and tracking where and when safety issues arise. People are showing great interest in participating: leaders of various sectors tell me that workers are coming to them with the problems but also with ideas on how to tackle them. The conclusion is that lean has had a great impact in changing the mindset of people.

Apart from the indicators, the board shows graphs that will show how many injuries (red), first aid wounds (yellow) and unsafe behaviors and acts (green) are reported. Our diligent Safety Team has been holding meetings every week to set up an action plan to improve the company's safety performance in the months to come. They have taken pictures of all the unsafe places they detected around the SCGM facility and, with the

OVERALL EQUIPMENT EFFECTIVENESS IN PERCENTS BY WEEK



Building the Autonomous Management pillar is a time-consuming job that is not for the impatient: we created a Master Plan for it //

help of their leaders, they have begun tackling them, one by one.

After making sure that our people are and feel safer in their working environment, together with the Steering Committee and the consultant we have moved on to the next pillar, which is taking care of the main tools people at SCGM operate with: machines. Originally, we named the pillar "Advanced Maintenance". At first, it seemed reasonable to focus our attention on machine maintenance, but during a meeting we realised that the name referred merely to maintenance, without letting the concept the pillar builds on expand to other areas and connect with other pillars. Therefore, our second pillar was renamed Autonomous Management. This indicates that together with other pillars and the operators involved we can keep the machines in the best possible condition autonomously, cut the losses they produce due to natural and forced deterioration, have better quality of the products and worry-free workers.

Building the Autonomous Management pillar is a time-consuming job that is not for the impatient: we created a Master Plan for it.

1. REACTIVE
 - Actual situation analysis;
 - Elimination of losses;
 - Evaluation and standardisation of identified solutions.
2. PREVENTIVE
3. PROACTIVE

As you can see, the stepping stone would be to analyse the actual state of the plant, with the help of the Autonomous Management team that we are about to create and introduce to the structure. We will go to the shop floor and do the initial cleaning of the machines with the operators (let me point out that much has already been done with the implementation of 5S). The machines would clearly show where sources of contamination are,

helping us to flag them up with coloured tags.

Furthermore, in defining the actual situation, calculation of OEE is essential. As you probably know, we have started tracking OEE on our three machines - BK 2500/800, TM 1000/350 and Engel. In the last article, you read about how we reduced the losses: for BK 2500/800 and Engel the biggest loss was due to the lack of people during SMED. We have hired three new employees, trained them on tool change and now our OEE has increased.

For the third machine, TM 1000/350, the main source of loss we had to attack was breakdowns. It has worked with one, instead of the usual three batters. We have replaced the old batters with new ones and the result of our meticulous examination of losses was an improved OEE chart (left).

We will introduce MTBF (mean time between failures) and MTTR (mean time to repair), the key reliability metrics for systems that can be repaired or restored.

Consider this example: a machine operates on one shift of 8 hours with 20 minutes for breaks. In a 30-day period the machine has 20 breakdowns for various reasons. In total these breakdowns account for 30 hours of lost time.

What is the MTBF ?

What is the MTTR ?

- Total available time = $(8 - 0.33) \times 30 = 230$ hours
- Total downtime = 30 hours
- Total uptime = $(230 - 30) = 200$ hours
- No. of Breakdowns = 20

$$MTBF = 200/21 = 9.52 \text{ hours}$$

$$MTTR = 30/20 = 1.5 \text{ hours}$$

All these calculations, along with loss and scrap trends, will help us to understand the present situation and lead us to the areas we need to act on first.

Here's what we have been up to in the past month. In the next issue you will read all about our ideas being realised, and much more. Stick around!