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THE NATURE OF LEAN

Examining the synergies between
lean thinking and a green strategy

Companies featured in this edition include:
Toyota, MITIE, Gemalto, Tesco, 3M, Brasil Foods

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The future of supermarkets: Tesco's success relies on a strong lean and green ethos. Experts from Cardiff Business School and Cranfield University in the UK explain

Green, lean... and clean: MITIE is a facilities management company that operates in Britain and Europe. *Jon Lightowler* talks about the interaction of lean and green within the business

Lean's Western beginning: In the final part of his article, *Richard Schonberger* provides an interesting account of the history of lean

Leaning and booming: This month LMJ travels to Brazil to analyse the adoption of lean in the South American country

A new paradigm for assessment: *Denis Becker* of Netherlands-based digital security specialist Gemalto shares his view on lean assessment, and explains why a new model is needed

LMJ in conference: *Roberto Priolo* reviews the summit in São Paulo organised by the Lean Institute Brasil

Leaning towards excellence



SCGM CEO Sandra Cadjenovic gives LMJ an account of the latest progress the Serbian company is making in its continuous improvement journey. This month a plant manager and quality manager have their say too.

Despite the scorching temperatures of the Serbian summer, SCGM employees have been working hard to improve things daily. The progress was noticed by customers as well - existing ones were praising us and deals with new ones were closed thanks to lean.

We have signed new contracts, which are going to bring important assignments for us in the next few months. There was also an annual poll conducted to show customer satisfaction: it has improved this year. This is like tailwind for us as we keep improving.

So far I have been the one updating you about lean implementation at SCGM, but this time I have decided to let two of our managers speak. They will provide you with first hand news and impressions from their departments.



Jelena Kostic, Plant Manager

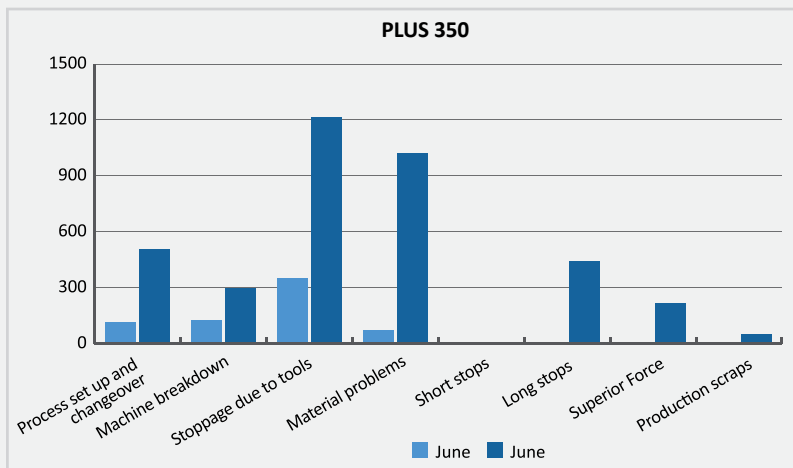
The injection molding facility is my main 'office', where I am in charge of 20 people working three shifts. Together, we produce plastic parts and take care of seven machines on the premises. We were doing that even before lean was introduced, but with the new system we are doing it much better. I have embraced the tenets and purpose of continuous improvement and I have been teaching these to my employees. We organised a lot of training and I am happy to say that we have all started thinking lean to some degree.

At this point, workplace organisation is at a higher level than ever before: our shop floor looks clean, tidy with tool cribs and documentation holders well designated, thanks to 5S. As soon as we set that in place, we started to focus on making our employees more organised. Only now do I realise that many problems arising or omissions occurring were due to my operators having too many obligations, with their responsibilities poorly defined. Thus, a new competence matrix has been made, with precisely defined tasks for each of them to follow. According to the new distribution of responsibilities, for each shift we will have:

- one main operator to follow the progress of work;
- team for tool-change;
- team for material handling;
- team for process operations;
- team for machine maintenance.

Training is being conducted at the moment to make people clearly understand what the scope of their assignments is, further improve the working conditions on the shop floor and avoid I-did-not-do-it situations.

OEE



Our OEE trend has been followed closely. The Steering Committee meets on a monthly basis, analyses the results and makes the action plan to decrease losses according to priorities shown. Some of the main problems we have solved are listed below.

Materials

- **New material dryers:** the plastic granules we use for injection molding require thorough drying before entering the process. This operation was done manually in the material dryer requiring the full attention of the operator. The material was often damp, often leading to delays in the IM process. Having recognised this, we installed three new automatic closed system material dryers, with a plan to turn the rest of the old ones into semi-automatic, with the parameters and alarm set, which will signal the operator the start/finish of the process.
- **Dozers for material coloring:** we have introduced a new system for material coloring dosage - this was previously done by approximate measuring by the operator.
- **Reusing resources:** we used to dispose the scraps we produced. Now we are selecting and grinding them - part of the material can be reused and sent back to production, while the rest is sent to recycle companies.

Machines

Problems with machines are recurring, but we keep fighting. What we have done so far to keep them in better shape includes:

- **Electricity protection:** as you know from previous articles, electricity shortages have been hitting us from time to time, often for short intervals. In order to protect our machines, we have installed automatic switching off when there is no power, and red signal lamps to tell the operator when the power is back on, thus avoiding voltage coming on and off and damaging the machine.
- **Swift couplings:** the temper apparatus for injection molding has been giving us problems; one could often see spilled water around the machines, which is of course a safety issue. We have now installed swift couplings that stop water from spilling out using a valve that closes automatically.
- **Make it visible:** a board with a list of the machines was set up; when one of them breaks down, a red tag is put next to the picture of it, so that maintenance knows, by taking just a quick look at a board, where the emergency spot is.



Dragana Dobric, Quality Manager

I am the head of the Quality Department and a team leader for Lean Safety.

Before lean was introduced, I felt like I was fighting windmills all the time. SCGM Quality was naturally concerned with not letting customer receive products that were badly produced. However, we left every delivery with quite a number of scraps and defects. Rework was a normal part of our job, so we did not record it in our checklists. I was pleased to see that we were finally going into some deep analysis with the QA matrix, to find the faulty processes instead of focusing only on faulty products.

Whenever there is a high risk process, we put a big red notice, meaning that operators should pay special attention to product quality, every half an hour, and that the Quality Department should perform inspection controls every hour there; if estimated as a lower risk process, it is marked orange; if the process is without risk, blue.

As a team leader for Safety and Environment, I am proud to say that the number of injuries has been decreasing steadily. Last month we did not have any!