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# The combination of Lean and Six Sigma was a success in the improvement work

In Swedish Match's Swedish snuff production, an improvement program has been implemented based on both Six Sigma and Lean. It has proven to give very good results. For example, a single improvement project has resulted in a production increase worth several tens of thousands of euros per day.

**IN THE IN KUNGÄLV PLANT,** Swedish Match produces snuff of many varieties. *David Dreven*, who has the role of Improvement leader and Master Black Belt, has together with his colleague *Niklas Sommargren* developed the improvement program that is in use today. In his role he coaches employees in improvement work and supports problem solving and process development.

## **Lean + Six Sigma give a higher level of improvements**

The improvement program is based on a combination of Six Sigma and Lean,

both in terms of philosophy, structure and tools.

– An overall goal for us is to have the freshest products on the market. So we need to constantly challenge and transform our processes in accordance with the Lean approach, for example by leveling and balancing flows, shortening lead times and meeting the customers' needs in a timely manner. We also need to work with systematic problem solving, and that's where Six Sigma comes in, says David Dreven.

In the problem solving, they follow Six Sigma's DMAIC project structure

with its five phases: Define, Measure, Analyze, Improve and Control.

– We define problems in order to identify the root causes, we make measurements in order to make fact-based decisions, we analyze to find the best solution and then we implement and control the improvement to eliminate problems.

At the same time, according to David Dreven, it is important to do the right things from a holistic perspective, i.e. to focus on the improvements that have the greatest potential and which can provide the highest customer value.

– It is the combination of both doing the right things according to Lean and solving problems in the right way according to Six Sigma that gives good results and success in our improvement work. We do not distinguish between the two concepts. Our working method consists of both, although we do not actually use the name Lean and Six Sigma.

### Successful project

Our improvement work has resulted in reduced waste, increased customer satisfaction, shorter lead times and a more sustainable production that does not overload personnel and equipment. David Dreven tells us about a Master Black Belt project that produced very good results. The machine efficiency was not satisfactory in the production of a certain snuff product for which market demand is very high.

In the improvement project a combination of tools from both Lean and Six Sigma was used. For example, value stream mapping and leveling and balancing of the flows according to Lean, as well as control charts and statistical analysis according to Six Sigma, including regression analyzes and capability studies. Six Sigma tools were also used in the process development itself.

– This improvement project is still ongoing and we have now succeeded in significantly increasing machine efficiency, which means that we are able to deliver more of this popular product. The improvements have increased the overall machine efficiency by 30 percent, says David Dreven.

– The most important reason for this success is that we have worked systematically to produce facts so that we know that we are doing the right things. This has given good results in a short time.

Improvement projects are initiated in different ways in the Kungälv plant. They can arise during process analyzes and process transformations, as problems are found that need to be solved through Green Belt or Black Belt projects. Projects can also be generated from non-conformity reports and from the daily management of the production.

There is also a special process for improvement projects. For example, if there is a problem which a department cannot solve, it is addressed in a special forum. This forum consists of managers from different functions and also includes David Dreven. A business case is put together in order to solve the



problem and it is directed to the right owner.

### Structure and roles

In the improvement program at Swedish Match in Kungälv there is a role structure that is similar to Six Sigma. The same structure is also found in the plant in Gothenburg where Niklas Sommargren has a corresponding role. The roles are also related to specific levels of competence in problem solving and continual improvements.

All employees in the Kungälv and the Gothenburg plants have White Belt and Yellow Belt training. There are several specific roles in the improvement work. Green Belts work with improvements up to 50 percent of their time, Black Belts are improvement leaders who work up to 100 percent in leading improvement projects. Master Black Belts are improvement leaders who run larger and more complex projects that can include several different organizations, and they also develop the improvement program itself. A champion is a person in management who coordinates improvement work and ensures that what is done is in line with the company's goals. At the top of the improvement work is the Quality leader, which is the plant manager who has the main responsibility. All managers in the Kungälv and the Gothenburg plants have also been trained and they receive continual coaching in order to actively run improvement work.

### Education pays off quickly

At the Kungälv plant, a lot of effort is spent on education and training in improvement work. David Dreven himself attended both Black Belt training and

Lean leader training at Sandholm Associates. Niklas Sommargren, who has a corresponding role in the Gothenburg factory, has completed both Black Belt training and Master Black Belt Analytical at Sandholm Associates.

– This training has changed my approach to seeing and solving problems and I have built a very good base, from which I act all the time. With more knowledge and experience, I can address more complex problems and projects that extend across multiple organizational boundaries, says David Dreven.

He believes that training in improvement work is something that pays off quickly, often already at the first improvement project, and the future potential is huge.

– If you make sure you do the right things and have a good improvement program, this will pay for the entire improvement organization.

But at the same time, David Dreven emphasizes that training and focus should be according to the actual needs that the organization may have in different situations.

– It is important that those who are trained really have time to work with improvements. Knowledge needs to be maintained and used all the time. Our ambition is to continue developing the improvement work and training more Green Belts and Black Belts.

In the improvement work at Swedish Match, Sandholm Associates have provided training for Black Belts, Master Black Belts, Lean leaders and Green Belts.