Implementing Lean Manufacturing Philosophy at Kalmar Industries with Focus on Continuous Improvements.

Ardit Cejku
Ulrik Ottosson

Department of Industrial Management and Logistics, Lund University, Faculty of Engineering
Lund, Sweden

This article is based upon the Master's Thesis: Implementing Lean Manufacturing Philosophy at Kalmar Industries with Focus on Continuous Improvements. It was performed from the 1st of November 2010 to the beginning of March 2010. The purpose of the study was to develop a system where all ideas and suggestions could be gathered and visible for the whole organisation. Analyse, improve and present a better solution for Cargotec.

Introduction
Cargotec MAU Lidhult has been engaged with continuous improvements since last year, yet they have not a good software to collect all information and simplify the process containing how to follow different improvements and their status. The authors’ goal was to develop and deliver a system for continuous improvements which collects information and make all different improvements traceable for Cargotec Lidhult. It should also be applicable in different Cargotec sites around the world.

Problem discussion
Today, the staff of Cargotec MAU Lidhult works with improvements in an unstructured way which varies between the different production departments. In some departments a factory worker may bring up suggestions for improvements with a team leader. The team leader then evaluates whether or not to implement the suggested improvement and with help from production engineers he or she executes the implementations. This means that the factory workers’ participation in the work with continuous improvement is very limited and this situation may cause decreasing engagement and involvement in the production process development.

The different departments at MAU Lidhult do not communicate improvement work with one another. Therefore the potential exchange of knowledge and experience that could occur cross functionally is not utilised.

Methodology
This master’s thesis was approached with a qualitative method to capture the entirety of the problem. Data was collected from literature study, several interviews at Cargotec MAU Lidhult and benchmarking against Electrolux Laundry Systems, Haldex Traction and Höganäs Sweden AB. This work of this thesis was performed and improved iteratively, particularly in the stages of empiricism and analysis.

The reason why qualitative studies were used in this project is first and foremost that when it comes to continuous improvements, there are no standard methods. Each company needs to find its own way of implementing and working with it. Thus, there would be of no practical use in this case to conduct a survey with a large number
of companies. Even if such a survey ought to give some statistical indications on how others have organised their improvement work, one could not know if that information would help Cargotrec. The idea was rather to get much input from a limited number of persons and use that as a foundation when proposing ways to work.

Frame of Reference

Lean

Lean production can often be seen as a complex system. The heart of this system is Just In Time delivery and low inventories. By having low inventories, issues such as demand fluctuations and supplier demands are eliminated. Focus is put on improving the quality of inputs and reducing lead time. Through these efforts the result is continuous improvements in quality, responsiveness and productivity. Lean production entails cooperation between design for manufacture problems and suppliers on quality. It ensures that the main focus should be held on the design stage since the ease of manufacture, quality and service are built into the product (Levy, 1997).

Continuous improvements

There have always been needs for improvements within the production of goods and services. However, the degree of structure and the aim of the work regarding this matter have varied. Traditionally the improvement work has been conducted by management and executed exclusively by specialists (Nilsson, 1999). “Continuous improvements” is a more modern term for improvement work. Significant for continuous improvements are that they are always small changes in a process which differentiates them from radical and large scale changes e.g. new machinery (Nilsson, 1999). Another important part of the more modern approach is that people working in production is highly involved in designing the improvement work. Then the same people have mandate to actively execute the improvement activities as long as one always keeps up-to-date with the customer’s needs. The most important thing about working with continuous improvements is to never stop (hence the word continuous). A process always needs to adapt when needs and demands change. However, this is often neglected since the staff considers its time far too limited to focus on continuous improvements (Ljungberg and Larsson, 2001).

Empiricism

The data obtained came from interviews with MAU Lidhult management (white collar) and work shop operators (blue collar) as well as observations of the companies which the authors benchmarked against. Simplicity turned out to be a red line through all of the interviews. Everyone agrees that if work routines, meetings and the IT based system turn out to be rather complex Cargotec will never exercise a successful and long lasting improvement work. Administrative burdens ought to be as little as possible in order to prevent moral and engagement from decreasing. Many also mention the necessity of having some sort of ambassadors i.e. operators in each department with an extra interest in continuous improvements. These individuals would have a prominent role and a responsibility to lead the work and promote the philosophy among the operators.

Many of the interviewees, especially within management, believe that one ought to measure continuous improvements. Preferably each executed improvement can be estimated in cost or time savings. These figures are meant to serve as motivators to
further actions. The idea is to make people think “all changes we’ve performed have implied this” and hopefully motivation to do even more will rise.

Some of the operators feel that working with continuous improvements means having a misguided focus and that others think that the workplace needs no changes. They seem to believe that there are bigger issues to attend to first.

The benchmarking showed several good examples of how improvement work may be conducted. Haldex Traction have managed to build a simple system with minimised administration. A sheer determination of working with continuous improvements was shown by production being cut off for several hours every Friday and this time is spent on follow-ups for issues from previous week.

Electrolux Laundry Systems focus on fast and structured problem solving with very short decision making processes. When a problem surfaces a team leader in assembly can put together a team with the support functions needed to solve it.

Höganäs Sweden AB practice a traditional suggestion scheme with focus on technical improvement proposals. Standardisation is an absolutely essential feature in their system. When an alteration of machine technology is carried out and proven successful one makes sure that this is also implemented on all machines of the same type.

Analyses

One of the greatest challenges with this project and for the future work of Cargotec is to make the improvement work continuous and lasting and not being a project which ends at a certain point in time. The goal is to have a self sustaining Kaizen process at Cargotec where the operators conducts and executes the improvement work with limited involvement from management. However, management will need to lead this initially until a certain mind-set will develop in the organisation. In time it will start living its own life and the operators will constantly reflect upon and think about areas to improve and how to do it. A common mistake when introducing is that management sends the signal that it is time to improve everything fast. Once the novelty wears off the employees’ motivation decreases and the Kaizen process slowly fades.

MAU Lidhult has a history of using traditional suggestion scheme with individual financial compensation to the person generating the proposal of change. The authors are very critical to two aspects of such a system. One is that by only rewarding the person coming up with the idea one may create an environment where people tend to closed up and keep their ideas to themselves. The other is that in a suggestion scheme the idea creator is not part of the execution of the action. The sense of ownership will be significantly greater if one is at least partially responsible for implementing what one has suggested.

The authors are concerned about the operators being so sceptical towards continuous improvements and it implies a misguided focus. The difficulty lies in making people realise that gradually enhancing in small steps does not rule out solving the large problems as well. It is rather a complement. One also needs to understand that even if the companies’ processes function at a satisfying level today, one can always get better and actually needs to get better to meet the rising demands of the future.
Conclusions
The authors developed an excel based to support the improvement work of Cargotec. This system provides visibility and helps departments to work cross functionally. Through simplicity more employees will be engaged in the organisation and new improvements would be generated. Cargotec needs improvement teams consisting of operators as well as representatives from several support functions. These teams will have fortnightly reconciliation meetings to achieve a higher level of cross functionality. When introducing it is important to deliver the right message to the operators, which is “Never-ending improvements benefit both employees and enterprise”. In the long run, Cargotec will stay as a strong competitor in the business.
After implementing this concept with continuous improvements on Cargotec there are actions that need to be taken. It is crucial to follow up all suggestions. Thus, the concept stays alive. Cargotec wants to implement this concept throughout the whole organisation globally at once. Therefore, it is vital to convince all operators that this time is significantly different in comparison to all previous attempts which have failed.

References
Nilsson, Tommy (editor) (1999) STÄNDIG FÖRBÄTTRING - om utveckling av arbete och kvalitet. Arbetslivsinstitutet, Solna