

Facing the challenge to increase quality while working more efficiently using Lean Operational Management and Lean Six Sigma at Statistics Netherlands

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Abstract

Part of the ten point strategic agenda of Statistics Netherlands is to make our processes more effective and efficient and at the same time improve and secure the quality of our processes and output. This seems to be the eternal challenge: to become better with less effort.

In the past, and still ongoing, Statistics Netherlands has succeeded in meeting this challenge by large methodological and IT-redesigns that allowed breakthroughs in both quality and efficiency. To put more focus on the work processes, instead of on methodology and IT-systems, and to tap into the knowledge and potential of the employees, Statistics Netherlands embraced Lean Six Sigma and Lean Operational Management to realise an increasing part of their goals on efficiency and quality.

This presentation gives an insight in the way Statistics Netherlands introduced and implemented Lean Six Sigma and Lean Operational Management, and the challenges and success we had with it.

Keywords: Lean Operational Management, Lean Six Sigma, Quality, Efficiency.

1. Define²: problem definition

In 2014 our Director General Tjark Tjin-A-Tsoi introduced his 10-point agenda that formed the basis for the strategic agenda for Statistics Netherlands for the coming years (Statistics Netherlands, 2014). The team for Process Development (part of the Department for Process Development and Methodology) saw their main contribution to this strategic agenda in two of the ten points, which are: *Improve and secure quality* and *Make processes more effective and efficient*. These two point illustrate the eternal and universal challenge and brings us to the problem definition for this paper: to become better with less effort.

² The chapters of this paper follow the DMAIC-project phases of a Lean Six Sigma project. For more information about the DMAIC-project phases, see for example Wikipedia DMAIC (2016).

2. Measure: the size and nature of the problem

Until 2014 the main way to achieve more efficient and effective processes or to increase the quality was by doing large and expensive IT and methodological redesigns. These redesigns were (and still are) often triggered by budget cuts, the desire to implement new methodological methods or the use of new sources of input-data, or the need to replace “old” IT-systems. The redesign-projects that realised the desired changes, usually introduced a new IT-system that often dictated a new and more efficient way of working.

The departments of Statistics Netherlands, however, had an additional and also growing need. With more and more employees reaching their pension age, departments increasingly are being confronted with the risk of losing their single points of knowledge as well as the decreasing size of the work force. Departments wanted to become able to improve their work processes, securing the necessary knowledge and becoming more efficient and effective, without the need to replace or change IT-systems or being dependable on experts on IT and methodology. The objective of the team for Process Development is to satisfy this need with alternatives methods.

3. Analyse: root causes of the problem

Traditional (IT-)redesigns have a number of disadvantages causing their inability to completely satisfy the additional need of the departments. Even though these traditional redesigns themselves are being improved, for example by introducing SCRUM, they still are aimed at introducing a new or improved IT-system, relying on IT-experts and other experts and methodologists.

Moreover, these redesign are able to realise efficiency in a certain process with a frequency of maybe only once every 5 or 10 years (or even longer). They usually require a large investment to realise the change and the process of prioritising has a heavy focus on the return of investment time. Especially when the main goal is to replace an old IT-system, the return of investment is not always achieved within 5-10 years.

Of course, next to the redesigns, there were also some small scale improvements done by the departments themselves, teams changing the way they work by themselves to solve smaller problems they had. These improvements are often not visible or known beyond the team limits and made based on the best judgement of the people working in the teams.

The team for Process Development wanted to introduce a method for improving processes, in either efficiency and effectiveness or quality, that would support the departments and teams in realizing these small improvements themselves with less effort and in a higher frequency, using a structured best practice way in line with the company’s strategic agenda.

4. Improve: Introducing Lean Six Sigma

At first, at the start of 2014, the team for Process Development introduced Lean Six Sigma as a method for realizing the improvements. There had been a few departments working with Lean with quite some success and the search for an external specialized partner resulted in a choice for Lean Six Sigma as a method.

Lean Six Sigma is a project based problem solving method, featuring the DMAIC-project phases, Define, Measure, Analyse, Improve and Control. Lean Six Sigma is organized around a Belt structure. Orange Belts are people following a short training to create awareness of the method. Green Belts are people trained as project leaders of the less complicated Lean Six Sigma projects (12-16 weeks). (Master) Black Belts are trained to be experts, project leaders of more complicated projects (up to 26 weeks), trainers and coaches of other Lean Six Sigma Belts. The method offers a structure to process improvement based on best practices and statistical analyses. For more information about the DMAIC see [Wikipedia DMAIC \(2016\)](#). For more information about Lean Six Sigma see [Wikipedia Lean Six Sigma \(2016\)](#).

The first step taken inside Statistics Netherlands was training employees to Green Belts and Black Belts and realizing the first improvements doing lean Six Sigma projects within the company. The basic setup within the company is a centralized pool of Black Belts that take care of deployment, awareness, training, projects and coaching and a decentralized pool of Green Belts doing projects.

The training of Green Belts is done in waves. In the first wave the Black Belts to be (Business analysts from the Team for Process Development) faced the challenge of being the first and generating the first success stories that were necessary to generate broader support for the method within the company. After being trained to Black Belts in the second wave the centralized team of eight Black Belts started organizing the following training waves, coaching the decentralized Green Belts in training, developing and giving two-day Orange Belt trainings to reach a larger part of the company and spreading the awareness of Lean Six Sigma as a method. Next to the two-day Orange Belt training the team of Black Belts organized workshops and one-day conferences within the company, presenting the results all aimed at generating awareness and support for the method.

4.1. The results after two years of Lean Six Sigma

Two years after the start, the team of Black Belts have achieved some impressive results. Everyone in the company has heard of Lean Six Sigma, either through training, participating in a project or hearing about it in meetings, or from colleagues. In numbers we can state that over 500 people have been trained in Lean Six Sigma, including 8 Black Belts and 59 Green Belts, the rest being Champion Belts (management training) and Orange Belts. 110 projects have been finished or are still in progress generating almost 14.000 hours of efficiency (and 7.000 more hours are expected to be generated by the time all solutions of the now finished projects are implemented) next to improvements in quality and timeliness these projects have realised. Summarised we can say that Lean Six Sigma has already returned the investment it took to introduce it to Statistics Netherlands.

5. Improve: Introducing Lean Operational Management

One year after the introduction of Lean Six Sigma, the experience with the projects gave the insight that in order to turn Lean Six Sigma into a greater success, there was a need for a better grip on performance and more awareness on the processes and performances within the teams and departments of Statistics Netherlands. To achieve this, Lean Operational Management was introduced as a means of getting control over processes and performance and getting control over the process of continuous improvement.

The introduction consisted of doing pilots within two different departments. Under guidance and coaching from the centralised Lean Six Sigma Black Belts the teams within the chosen departments started with developing their own performance visual management board, having daily start-up meetings and weekly improvement meetings. Next to the structure provided by Lean Operational Management, attention was given to the cultural aspects, such as being transparent about your performance, being able to accept and learn from mistakes and giving feedback to each other on performance and team spirit.

The two pilots were a success, resulting in more insight into the performance of the teams and the processes involved and in the general spirit and mood within the teams. The pilots were followed by the decision to introduce Lean Operational Management companywide.

5.1. The results after one year of Lean Operational Management

The pilots had provided experiences that were used to develop a standard training and coaching approach for teams that wanted to start with Lean Operational Management. After an intake, a team is being trained during a one-day training and coached by one of the Black Belts until the team has reached a sufficient level of maturity (based on our own Lean Operational Management maturity checklist) into Lean Operational Management. Starting in January 2016, after evaluating the pilots, around 225 employees in about 35 teams employees have been trained into Lean Operational Management in three months' time and are being coached by the Black Belts. Lean Operational Management is now clearly visible inside the company. Visual management performance boards can be seen on walls when walking through the office, you can see teams having a daily stand up meeting in front of their boards. Teams are growing as they explore how Lean Operational Management helps them getting grip on and improving their performance, removing obstacles in a structured way.

6. Improve: Lean Six Sigma and Lean Operational Management working together

In practice, Lean Six Sigma and Lean Operational Management supplement each other almost perfectly. On the one hand when there is a gap between the expected or desired performance and the realised performance of a process, Lean Six Sigma provides an efficient and effective project based method to analyse the problem and find root causes, leading to solutions that should close the gap. Lean Operational Management provides the culture, the structure to accept and implement these solutions and make sure they are secured in the new and improved process.

On the other hand Lean Operational Management increases the process and performance awareness of teams, making the gaps between expected and realised performance more transparent. Lean Operational Management feeds the list of potential Lean Six Sigma projects and helps in prioritising the improvements, making Lean Six Sigma more effective as a method of realising improvements.

Linking back to the start of this paper, when the gap between expected and realised performance is too big to be closed by a Lean Six Sigma project and it is not possible to be closed without introducing new technologies, methodologies or IT-systems, a IT-redesign is needed.

7. Control: securing Lean Six Sigma and Lean Operational Management into the company

We can conclude that in two years' time Statistics Netherlands has achieved a lot with the introduction of Lean Six Sigma and Lean Operational Management. Everybody in the company knows about it and at least 25% of the employees of the company has had direct contact with the methods, either by participating in a Lean Six Sigma project or by starting with Lean Operational Management.

Of course introducing the methods is no goal in itself, but a means to achieve more efficient and effective processes and to improve and secure the quality of our work. By doing this, the team for Process Development has successfully introduced a method for improving processes, in either efficiency, effectiveness and/or quality, enabling the departments to realized these improvements themselves, fulfilling their arising need with which we started this paper.

One factor critical to the successful launch of Lean Six Sigma at Statistics Netherlands was the support and active participation of the Director General and the Board of Directors. This assured that Lean Six Sigma got a lot of attention and emphasis at the beginning. Right now we are at a point where the method must be embedded into the daily work of all departments and teams and the results that have been generated must start to speak for themselves and make every team and department see the benefits of these methods and how they can help to reach strategic goals of the company and departments.

The challenge we face now is to secure these achievements into the daily operations of Statistics Netherlands, further aligning our efforts and those of the departments with the strategic agenda. To do this we use the so-called Hoshi Kanri X-matrix. The X-matrix helps us to align team goals to department goals, and align those to company goals. We use it to define long-term goals (3-5 years), translate these to mid-term goals (1 year) that are translated into specific targets and actions to measure and overcome the gap and achieve our goals. Lean Operational Management is used to monitor the performance and guide us towards our goals on a daily and weekly basis and Lean Six Sigma to close the gaps.

8. References

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