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# Developing middle managers with Gemba training

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**Abstract.** Much has been written and researched on the role of top management in Lean transformations. However, even with top management commitment companies can struggle to keep up kaizen activities once the so-called implementation period has passed. Little has been made of the role of the middle managers. Often overlooked and underappreciated, the development of middle managers leadership skills through gemba based training and hansei (self-reflection), might be the missing link in successful and sustainable lean transformations. Based on a literature review on the subject and case studies of three different companies, we present how middle managers can become an integral part in sustainable lean transformations by taking the role of trainers, and leading on-the-job development of both technical-, improvement- and teamwork skills. This should be done by teaching Toyota Production System (TPS) on the gemba, creating space for Hansei. The training should be carried out in a train-the-trainer system where each manager is responsible for the training and development of their direct reports.

**Keywords:** Learning lean, middle-managers, on-the-job training, training within industry, gemba

## 1 Introduction

As the founder of Kaizen Institute and author of [1], Maasaki Imai once said; *"There are three most important requirements if you want to be successful and embrace kaizen and lean. The first of course is the Top Management commitment, second is the Top Management Commitment, third is Top Management commitment."* [2]. Indeed the commitment of top management was found to be one of five critical success factors in a study of lean implementations across two multinational companies in two different industries [3]. However, [4] found that middle managers are often overlooked as the resources needed for implementation and training is directed to front-line staff and senior management. Indeed, we suggest that the involvement of middle managers through hands-on-training, are vital if a company is to sustain a lean culture over time.

Middle managers are key to every change program [5]. However, it is not always clear if senior- or middle managers are aware of this. Including middle managers in lean training sounds like a logical recommendation. Even so, they often find themselves

on the side-lines, swamped in everyday firefighting activities [1] and the pressure of delivery. Deliver now, and deal with the consequences later [6]. Yet, a key trait of a successful lean transformation is the inclusion of everyone in improving both the product itself and the process which makes the product. Middle managers play a crucial role in lean training and continuous improvement. Thus, they must be provided with the right training to develop the capabilities needed to thrive in a lean enterprise. They need to be developed towards their new role as trainers and improvers [7, 8].

## 2 Literature Review

According to [9] middle managers are the in-betweeners of traditional organizations, responsible for the implementation of strategic plans and to manage lower-level staff. Middle managers are both controlling and controlled, resistant and resisted, they are the doers to the top management thinkers. A major literature review [10] found that the role of middle managers changes depending on the contextual condition of a lean implementation. If lean is seen as a cost cutting program, middle managers will actively block the initiative. However, if lean is seen as integral management philosophy, middle managers tend to play a much more positive role in the lean implementation. Even though middle managers are more likely to succeed in a so-called soft lean implementation, there tends to be a tools focus in the coaching of middle managers in the typical consultancy led implementation [11].

[7] describe how Toyota still base its training of middle managers on the foundation of the Training Within Industry (TWI) program first developed to support the effective training of production supervisors during the second world war. TWI was rediscovered by the west as late as the early 2000s [1] and consists of three fundamental training programs, Job Instructions (JI), Job Methods (JM) and Job Relations (JR). A recent study of the impact on the organizations exposed to the program found that companies who had received training had experienced a substantial gain in both productivity and sales year on year. Furthermore, those who received the training mattered with JI key for middle managers [12]. It is no surprise then to find how [13] describe the rigorous, gemba<sup>1</sup>-based training that newly hired managers at Toyota go through to first, understand the job and second, improve the job together with front-line workers. Another example of the effectiveness of TWI was found in a study by [14] showed how TWI could be used to lower accidents in the UK construction industry. In fact, [15] suggest that TWI forms part of the roots of lean. A recent study of mentorship at Toyota Georgetown have also highlighted how American managers were systematically trained in both the thinking and practices of the Toyota Production System [8]. In addition, Toyota also emphasise leaders ability for self-reflection through a process called "Hansei" [16].

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<sup>1</sup> Gemba meaning "actual place" (Source: Lean lexicon 5<sup>th</sup> edition, Lean Enterprise Institute)

In contrast to the relatively little literature found on the middle-managers role as management support lean and how to train them [17], much more effort has been put into describing lean leadership traits. [18] goes so far as to describe lean leadership as the missing link, what is needed to change mindsets and behaviours in an organization. In a systematic review of the literature [19] found several attributes of lean leadership: 1) Creating and improvement culture, 2) self-development, and 3) the long term development of employees. Furthermore, in a multi-method study [20] found and validated no less than 16 lean leadership competencies. In an effort to demystify lean leadership, [21] summarized their research into six lean leadership practices: 1) Go and see, 2) Daily layered accountability, 3) Structured problem solving, 4) Continuous improvement, 5) Coaching, 6) Strategy Deployment.

### 3 Research Method

Our research is designed as an exploratory case study where we compare our findings in three different case companies located in Scandinavia with the findings of the literature review [22]. The data was collected from a combination of sources, including interviews and observations, as well as participatory action research. Our choice of research method is guided by the fact that even though prior research has studied the role of middle managers in lean implementations, there is little guidance for practitioners as to how they should train and develop middle managers to make them integral to the development of the continuous improvement culture needed to sustain a lean transformation. The case companies have in different ways addressed this problem. Case A cross-trained middle managers with operations by allowing them to study theory together inside working hours and practicing the theory within their own setting. The theory study was conducted in the form of book clubs and centred around a Norwegian practitioners' lean book called "*lean ledelse for lærende organisasjoner*" [23]. Case B developed their own version of middle management training with a focus on learning the basics of the Toyota Production System on the shop floor. Finally, Case C carried out a JI training program staying as true to the original material as possible.

### 4 Findings

All three case companies realized they needed to change the jobs of middle managers from firefighting, coordinating and controlling delivery to the development of people, improvement of workflow and quality, and sustaining healthy work environments. This also meant they had to change the way they involved and taught their middle managers lean, and how they developed their leadership skills. However, there were both differences and similarities to how they chose to go about the issue of training and development.

#### **Case A – Training and development through reflection and practice**

Case A is a typical Scandinavian SME that transformed its business during a 4-year period from 2008 to 2012. Doubling its turnover and achieving a profit margin of 10-

15% in an industry where 3-5% is considered good. Based on the successful training of senior leadership through simply reading books on Lean together and reflecting them, case company A decided to extend this approach to the rest of the organization, developing lean thinking skills in both operators and middle managers. A method referred to as the "book club" at case company A. According to one of our participants, after some initial problems, the first time they tried the "Ohno-circle" they forgot to tell the operators being observed and consequently "*got in a bit of a pickle with the union*". However, once intentions were clarified, practicing the Ohno-circle of standing and observing an operation or machine over time became a regular event at their training sessions. After running the training over several years, the company did find that some middle-managers and some departments took to lean better than others. However, overall, they viewed the training program as a successful initiative. In addition, the improvements born out of the practical application of the theory, the book clubs also created a space for Hansei. Allowing operators and middle managers across functions to reflect deeply on the fabric and culture of the company and how they could support and develop it further.

#### **Case B – Developing a deeper understanding of TPS and Muri, Mura, Muda**

In many companies, lean often gets executed with staff teams working side by side with employees from the shopfloor right up to Management. Which was the case at company B, a large Scandinavian multinational operating in the automotive business. However, this led to a situation where the line management did not take responsibility for improvement or development. Therefore, case company B removed its lean staff and instead rotated line managers in trainer roles on a 6-12 month basis. Additionally, they invested heavily in a lean leadership training program in the form of a two week "classroom training" program that was almost 100% front-line "gemba" based training. Involving middle managers from high up in the organization down to team leaders. The focus of the training was to develop gemba awareness in leaders by teaching the foundations of TPS: just-in-time (make only what is needed when it's needed), Jidoka (Stop at defect and separate man and machine) and standardized work, as well as developing a deeper understanding of muri (strain or overburdening), mura (unevenness), muda (unnecessary effort or waste) [1]. In fact, a key component of the training was to understand the importance of removing muri before focusing on mura and muda, to improve the workers' conditions in gemba. The training was built up based on the real observations made while observing a previously chosen process and interviewing the operators involved in the process. In addition to this training program, the company have a dedicated training centre that allows both managers and operators to practice operational skills but also leadership and improvement skills, giving the student a safe environment for practice, reflection (hansei) and feedback. Changing the training from classroom to gemba gave the leaders an opportunity to change their understanding of their roles as managers. To summarize, case B trained their middle managers in lean by: 1.) practicing and observing on the gemba, 2.) offering a safe environment in a training centre where they can make observations, reflect and discuss 3.) not having a staff of trainers and coaches but by challenging their line managers to take up the role

as trainer and 4.) by investing in people and, encouraging them to share the responsibility of lean.

### **Case C - Revisiting the basics of Job Instructions**

Case C is a large factory in the fish farming industry situated on the west coast of Norway. Part of a large multinational the factory is seen as the development ground for lean and Industry 4.0. In a bid to better understand standard work and to engage its middle managers in improvement the factory initiated a pilot based on the original TWI material. At the time of writing, the company has finished the first module of Job Instructions. The initial findings from this pilot suggest that the practical and hands-on nature of the TWI curriculum is still valid today. The training was carried out by strictly following the original JI training material. In the pilot around 25 people in three teams were trained in how to develop and teach standard work. Again, the results showed that the emphasis on understanding thoroughly value adding work had a positive impact on the middle managers. The emphasis had previously been on controlling and coordinating work, but through the JI training, they saw a need to change towards teaching and improving work. Furthermore, the teams discovered gaps in knowledge about the work (how and why work should be done in a certain way) among themselves and among operators. Additionally, they also saw opportunities for improvements and standardizations right away. Finally, we found that many of the middle managers found new motivation by attending the JI training.

## **5 Conclusion and Suggestions for further research**

Even though the three different case companies took different approaches to the development of their middle managers, our findings suggest that there are some commonalities among them. Based on the literature review and the findings from the case studies we suggest companies develop their middle managers based on three fundamental principles: 1) Teach the TPS basics on the gemba, 2) make space for Hansei, and 3) Train the trainer.

### **Teach the TPS basics on the gemba**

All three cases described above show that going back to basics is a key in order to continuously learn about their value creating processes, how to observe and how to improve them together with the workforce. We suggest that no matter how many Lego simulations are invented, the real learning can only happen on gemba. The three chosen examples show evidence to the fact that learning takes time and that companies should always go back to the basics of TPS. As good as classroom trainings and simulations might be, lean can only truly be learnt by practicing, observing, and improving over and over again.

### **Make space for Hansei**

Equally important, our findings suggest, is to make room for reflection. Hansei in lean terms. One of the fourteen principles developed by [16] to describe the Toyota management philosophy, engaging in deep reflection allowed middle managers in all of the case companies to digest and discuss what they had learned on the gemba and reflect on the theory of lean and what it meant to them together with others in the company.

### **Train the Trainer**

To develop lean leaders, one must develop lean trainers. However, training for the sake of reaching your Key Performance Indicators (KPI) of a certain number of people having received a "belt" in something is not much use without practical deployment. Our findings suggest that managers taking the role of trainer is a sustainable way of shifting towards a continuous learning organization. As such, middle managers should be viewed as trainers with the responsibility of developing their own staff. Additionally, leaders themselves discover improvement potentials, gaps or even bad working conditions and have the capability to improve with their team immediately.

These findings have implications for practitioners and researchers alike. As our literature review showed, even though much has been written about what defines lean leadership, little effort has been made to understand the role of training and developing middle managers on the gemba. More effort is needed on the part of researchers to understand how organizations can effectively and systematically develop lean capabilities. The case companies mentioned in this paper should be considered to be revisited in order to get more information on their further development and their current status. Same as for the success rate of their Lean programs involving the middle managers. For practitioners, our findings point towards some guiding principles on how organizations can develop middle managers by teaching the basics of TPS, creating space for reflection and challenge the same managers to take the role of trainers.

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