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THE ESSENCE OF EXCELLENCE

Creating a culture of continuous improvement

Foreword by Jeffrey K. Liker



The CHECK and ACT cycle at Thermo Fisher Scientific

Let's take a look at how Thermo Fisher Scientific went through two CHECK and ACT cycles of their gemba walks at the Shingo Prize-winning site in Lithuania. The Vilnius site has world-class capabilities in manufacturing products for the life science research market, specifically in molecular, protein and cell biology. The products manufactured there are used worldwide to study gene structure, expression and genetic variation and to create new diagnostic methods for congenital, hereditary and infectious diseases (Shingo Institute, 2018). The facility in Vilnius employs more than 800 people and is led by Algimantas Markauskas, who has a deep passion for improvement and lives by three key mantras:

- **Solve** problems immediately
- **Lead** by example
- **Involve** all employees

The improvement activity fits within the group's Practical Process Improvement (PPI) business system. However, what differentiates this site is the passion of the site leader and the continual improvement culture epitomised by the ongoing improvement of PPI led by Alina Štura, the senior business excellence specialist. An example of this is the improvement of leader standard work from 2013 onwards, specifically the gemba walks.

Gemba walks in 2013: the early days

In 2013 improvement had been taking place at the site for six years, even before the acquisition by Thermo Fisher Scientific in 2010. After 2010, the facility adopted the PPI group approach. By 2013 it had recognised a need, and consequently developed a framework (Figure 5.31), for leader standard work including strategic initiatives, daily accountability, gemba walks and problem solving, using an eight-step Plan-Do-Check-Act approach. The gemba walks were deployed to the 50 managers across all business functions with a target of generating one new idea in each of the daily walks. The schedule for each of the managers was displayed visually, in this case Algimantas Markauskas and his senior management team (Figure 5.32). Each walker also had a template to record whether the specific local area rated positively or not, a place to note comments and as a place to record an improvement idea that could then be transferred to the local Visual Management Board (Figure 5.33). The areas that the managers visited were chosen randomly so that independent insights could be generated by people who might not be familiar with the local area.



Figure 5.31: Leader standard work at Thermo Fisher Scientific

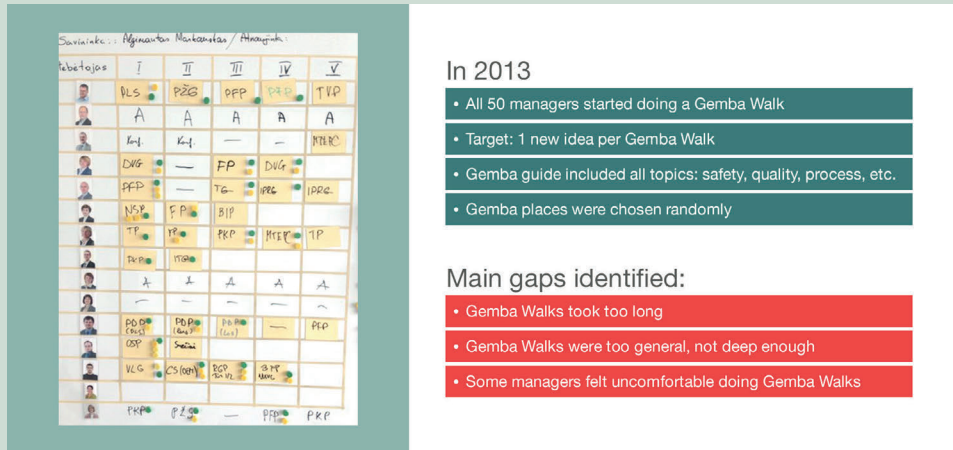


Figure 5.32: Gemba walks in 2013 at Thermo Fisher Scientific

Gemba check sheet		
Management (Tier 4)		
Place		
Done by		
Date		
Check point	Rating (Yes / No)	Comments
Compliance with safety requirements? <ul style="list-style-type: none"> Are safety incidents tracked on the Tier board? Are there any potential safety issues? (wet floor, objects placed on the floor which makes it difficult to move, etc.) 		
Any process or quality nonconformities noticed? <ul style="list-style-type: none"> Is the day (week) plan visualized? Is the process documented? Are there any disturbances due to equipment usage? Is non-quality prevention performed? Is inventory observed? 		
Are there any wastes? <ul style="list-style-type: none"> Transportation; Waiting; Motion; Overprocessing; Inventory; Overproduction; Defects. 		
Are PPI-Lean tools used properly? <ul style="list-style-type: none"> Has Tier board all necessary indicators? Not too much of them? Safety, Quality, Inventory, Materials... Is Idea board used? Is Kanban used? Is Gemba walking performed? 		
Are 5S requirements complied? <ul style="list-style-type: none"> Sorting; Systemization Shine; Standardization Sustain. 		
Ideas and proposals (ideas should be transferred to the Idea Board)		

Figure 5.33: Gemba walks Visual Management Board in 2013 at Thermo Fisher Scientific

In many ways the approach was good. However, it suffered from a number of drawbacks. Eight months after the launch a team was brought together to conduct an A3 review to check how well it was going (Figure 5.34). The team included Alina, a value stream manager, an R&D manager, a middle manager and a supervisor, with the site leader acting as the project champion.

Three main gaps were identified:

- 1 The walks took too long: typically 30 minutes in each local area.
- 2 They were too general as they covered safety, process non-conformity, waste, the effective use of PPI tools and 5S. This meant that each of the topics was covered too superficially, so in some cases rigor and depth was lacking.
- 3 Some managers did not feel comfortable doing the gemba walks.

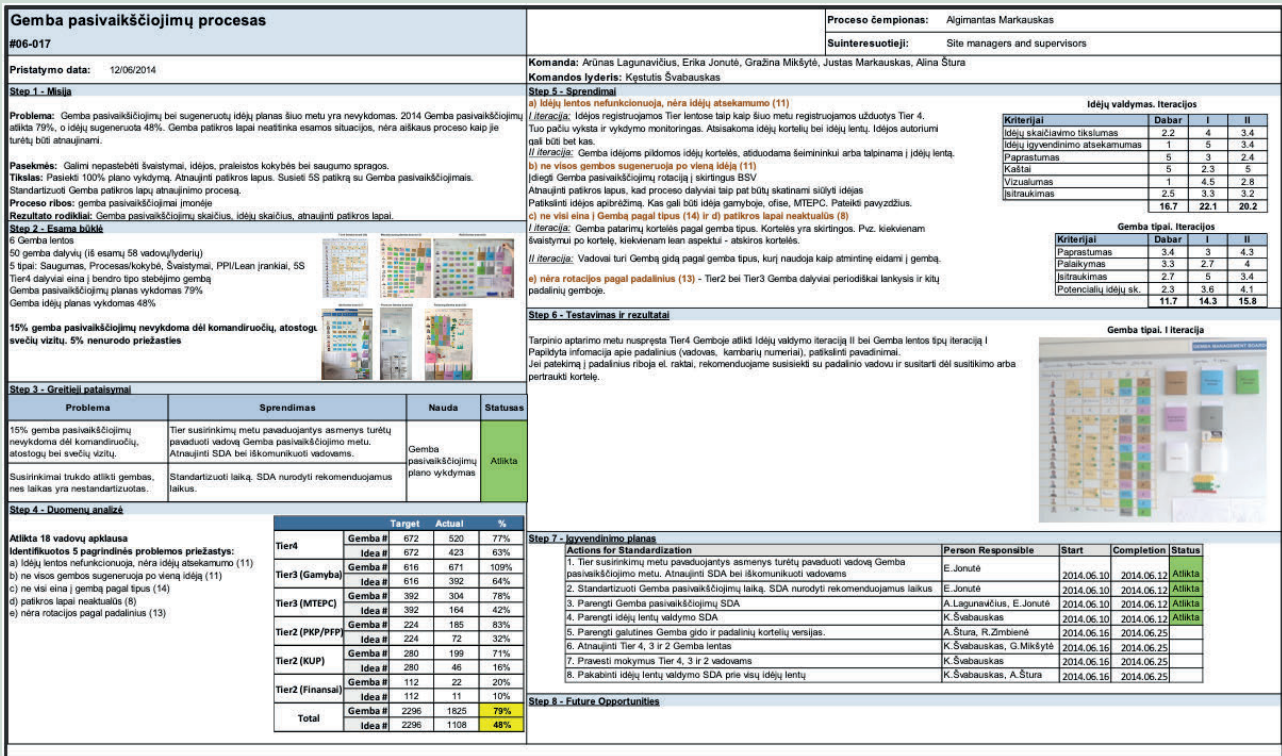


Figure 5.34: First review of Gemba walks in 2014 at Thermo Fisher Scientific

Gemba walks in 2014: the improved approach

In order to address these gaps, they implemented a revised approach that involved differentiating gemba walks at three different levels of the organisation:

Top managers focused on:

- whether the flow of work was equally distributed between departments
- finding opportunities that existed between departments
- coaching managers and employees.

Value stream managers and functional managers focused on:

- checking whether flow was being maintained and seeing if there were disruptions to the flow
- identifying opportunities within a value stream
- coaching employees.

Front-line managers focused on:

- checking whether processes complied with the standard work sheets
- identifying disruptions and their root causes
- reviewing how employees were dealing with issues in the local areas.

Together with this stratified approach, gemba walk guide cards (e.g. Figure 5.35) were developed for five specific types of gemba walk, with only one topic being addressed each day on the walk. These topics were strategy implementation, safety/ergonomics, quality assurance and customer complaints, continuous improvement and engagement/involvement of employees (PPI), and a spare guide for the top daily concern in the area.

GEMBA GIDAS - PPI / Lean Kasdienio susirinkimo lentos	GEMBA GUIDE - PPI / Lean Daily meeting boards
<ul style="list-style-type: none"> Įsitikinkite, ar kasdienių susirinkimų lenta atitinka 6 reikalavimus: <ol style="list-style-type: none"> aiškus ryšys su verslo strategija (rodikliai seka strategijos įgyvendinimą); sekamas proceso ritmas (ar vykdoma planą); atliekamas problemų sprendimas (ar naudojamas problemų sprendimo lapas); rodiklių ir tikslų vizualumas (ar galiu per 2min suprasti, kas vyksta procese); pagrindiniai rodikliai sumuojasi aukštesnėse pakopose; aiškus ryšys su klientais (ar sekame, kaip mus vertina klientai). Ar visi sekami rodikliai yra aktualūs? Rodikliai turi parodyti problemines procesų vietas. Jei rodiklis ilgą laiką atitinka planą (yra žalias), jis turėtų būti pakeistas. Kasdienių susirinkimų lentose turi būti signalai, inicijuojantys problemų sprendimą. Turi būti aišku, kada mes inicijuosime problemos sprendimą. Patikrinkite, ar yra taikomas 8 žingsnių metodas, sprendžiant kasdienes problemas Tier susirinkimų 	<ul style="list-style-type: none"> Make sure the daily meeting board fulfills 6 requirements: <ol style="list-style-type: none"> clear link to business strategy (indicators follows strategy); the pace of the process is monitored (are we executing a plan); problem solving is executed (are we using problem solving sheet); indicators and targets are visually presented (is it possible to understand what's going on in the process in 2min); key indicators are summed up at a higher levels; the link with customers is a clear (are we following how the customers values us). Are all monitored indicators relevant? Indicators have to show problem areas of the processes. If the indicator is consistent for long time (is green), it should be replaced. Signals that trigger the problem should be on daily meetings boards. It has to be clear, when we start the problem solving process.

Figure 5.35: Gemba walk guide card in 2014 at Thermo Fisher Scientific

Gemba walks after 2017: the further-improved approach

These changes meant that the gemba walks improved and helped support the local teams. However, there were still some opportunities for improvement. In particular, Algimantas and Alina noticed that some of the managers taking part in the walks were still not comfortable. As a result, they decided to undertake a second review and improvement round. This time they decided that it might be useful to try a different type of review, as the problems seemed to be less with the process and more at the people level. Algimantas suggested calling upon a psychology professor from nearby Vilnius University.

The professor interviewed ten managers at different levels of the business to check what the problems were and suggest one or more ideas for improvement. It quickly became apparent to her that the general gemba walk approach was good and that the managers at each level could clearly identify the goals and benefits of the walks. This was not where the problems lay – the problems related to the skills and confidence of the specific managers (Figure 5.36).

FOCUS	RESULTS	ACTION
Approach	All interviewed managers understand the goals and benefits of Gemba Walks	No action needed
Skills	Unequal level of Lean knowledge Managers feel uncomfortable due to:	Lean skills matrix prepared Process clearly defined Places specified

Figure 5.36: Second review of gemba walks in 2017 at Thermo Fisher Scientific

There were three reasons for this:

- 4 The varying level of knowledge of the managers about Lean – specifically, Lean itself, the terminology and how the different tools and methods worked, so it was unsurprising that some managers felt outside their comfort zone. A Lean skills matrix was developed and applied to the 50 managers, testing their competence in the various tools and problem solving. We will return to this in more detail in the next chapter on **learning & development**.

5 The specific goals of each type of walk were unclear. This was mainly because, up to this point, the gemba walk had been seen as an event rather than part of a process. The corrective action was, therefore, to see the walk as part of a wider process (as we described above in Element 5) with a preparation (or goal) step, the walk and then a debrief (or results) step. In particular, the walkers were required to identify clearly the goal of the walk before starting, as shown in the revised guide card (Figure 5.37). The other revisions and updates to the questions on the card also helped achieve greater clarity.

Gemba Ideas	
Continuous Improvement: Employees engagement	
Completed by:	
Date:	
Standard work	
<ul style="list-style-type: none"> • What is the goal of Gemba Walk? • Are the ideas from Gemba Walk documented? • Do employees solve any arising problems by themselves? • If yes, how? What tools are being used? Are colleagues from other departments involved if needed? • If not, why? • What is current involvement of employees? • What problems are being solved currently? • What Kaizens the team is participating currently? 	
Ideas for improvement	
1.	
<i>Gemba: coach and learn</i>	
Responsible for implementation: name, surname, planned completion date	

Figure 5.37: Revised gemba guide card example in 2017 at Thermo Fisher Scientific

6 Some of the locations for the gemba walks were not very relevant to the people undertaking the walks – for example, they might have someone from finance visiting a research laboratory, so their input and interest might be limited. Although this approach helped people locally to ‘separate the wood from the trees’, on balance it was not working and keeping the levels of motivation of the gemba walkers sufficiently high. It was a hard call and a decision was taken to limit visits to all areas to the top eight managers. Each of the other 50 managers was asked to develop a list of the areas that they managed or areas that were closely related, for instance part of the same value stream. Colour-coded gemba boards were then developed showing the type of walk each day, as well as the specific location of the walk. Figure 5.38 shows two examples from Tier 2 and Tier 4 (the highest level).

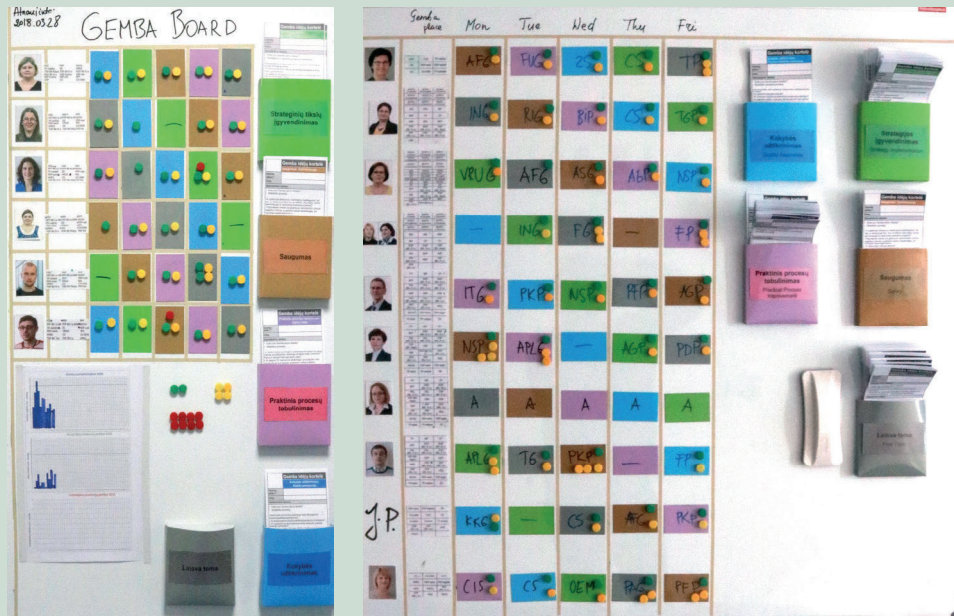


Figure 5.38: Gemba Visual Management Boards for Tier 2 and Tier 4 in 2017 at Thermo Fisher Scientific

Since this second review the gemba walks have gone from strength to strength, with a continuing positive trend. In 2017 over 11,000 walks were undertaken with a rate of 0.9 ideas per walk generated (Figure 5.39). Between 40 and 60 per cent of these ideas are implemented, either in an annual 5000 ‘just-do-its’ or 600 kaizen events. As a result, improvements in the business since 2013 include:

- The employee involvement survey has increased from 68 per cent to 89 per cent
- The world-class line items fill rate (LIFR) is more than 99 per cent
- On-time delivery of over 98 per cent
- A fall in the number of customer complaints by 33 per cent.



Figure 5.39: Gemba walks outputs at Thermo Fisher Scientific

However, Alina is not content with the implementation rate, so they are now thinking about a third improvement round...