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THE ESSENCE OF EXCELLENCE

Creating a culture of continuous improvement

Foreword by Jeffrey K. Liker



Lantmännen Unibake

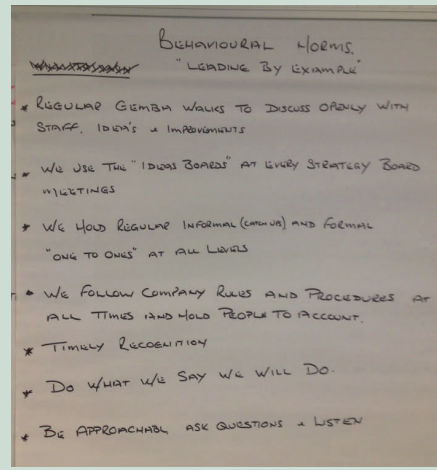
Although early on in their Lean journey, which was led by Head of Operations Chris Roberts, they have sought to work on their behaviours at the same time as a classic Lean programme. The business is part of a large group ultimately owned by Swedish grain producers. Within the group they had established three values for the business: holistic view, openness and drive, as well as six guiding stars: will to win, drive performance, develop yourself, involve & inspire, be brave and grow talent. The problem was translating these in a way that was meaningful for the typical employee. Through their HR department they went to great efforts to publicise these values, held a one-day off-site all-employee meeting, provided detailed explanations and distributed literature widely. However, this was only partially successful. The problem was how did you get the average worker to feel, live and breathe these values?

In order to work on this, Adam Cardinal, the head of CI and Viki Phillips, who led training within HR, worked together to start the ball rolling. The site senior management team led by Jon Lloyd undertook a behavioural formation exercise in order to translate these values into a set of behavioural norms that could be used right across the site. Jon was insistent that these should be headlined with 'Leading by example' as it was he and the senior team that needed to lead the way. The result of this, as we can see, was a list of seven behavioural norms that focused on listening, improvement, learning, coaching, recognition and discipline.

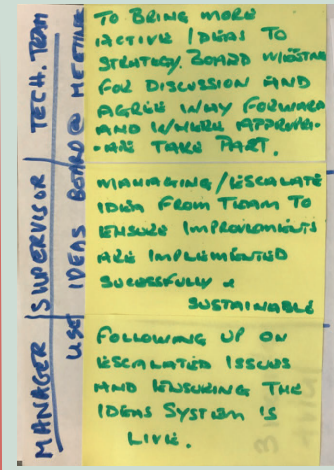
Lantmännen values and 'guiding stars'



Site behavioural norms



Example of detailed deployment



Bake-off area team



Three behavioural norms chosen

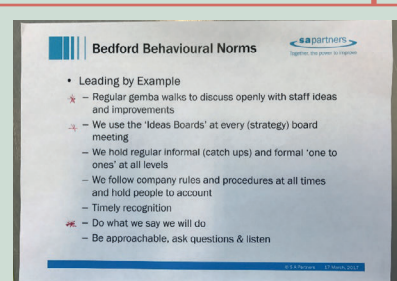


Figure 3.21: Behavioural deployment at Lantmännen

The next question was how to deploy them. The pilot area for this was the 'Bake Off' area. This was a small area that came within the Quality Department headed up by Jolanta Zminkowska. The deployment workshop took place within the 'Bake

Off' area next to the Visual Management Board so that the team themselves would be in a 'safe' environment. Past experience had shown that taking front-line employees into meeting rooms that they were not familiar with meant that they didn't feel free and open to discuss new ideas. The session started with Jolanta (the manager) sharing a typed-out version of the seven behavioural norms with the local team which included Inesa (the supervisor) and the team members (technical team). Jolanta explained where this had come from, how it linked to the company values and also why they had created the behavioural norms and why they wanted to deploy them to the team.

The team were very receptive to this idea. They were then asked to choose the three most important of the behavioural norms. This choice was guided by two factors: which did the whole team feel was most important to them, and second, which of them did they feel offered the greatest opportunity for improvement. The team chose:

- Regular gemba walks to discuss openly with staff ideas and improvements
- We use the 'Ideas Board' at every (strategy) board meeting
- Do what we say we will do

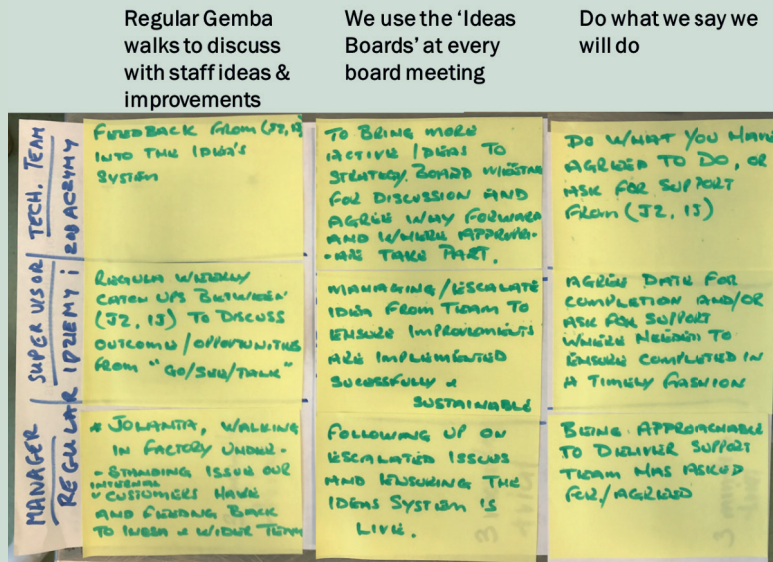


Figure 3.22: Detailed deployment at Lantmännen

At this early stage of their Lean journey, gemba walks were in their infancy and were being carried out by the senior management team. However, the 'Bake Off' team were quick to grasp their potential. As a result, they made a behavioural request of their manager:

Jolanta, walking in (the) factory understanding the issue(s) our internal customers have and feeding back to Inesa and (the) wider team

In a similar way, they requested that their team leader, Inesa had:

Regular weekly catch ups between Jolanta & Inesa to discuss outcomes/ opportunities from the 'go/see/talk'

The third behaviour within the gemba behavioural norm was that team members would ask for, listen to and act upon:

Feedback from Jolanta/Inesa into the ideas system

A similar approach was developed for each of the other two behavioural norms. Hence, nine very specific behaviours were crystallised locally by the team within the three most important behavioural norms. They had therefore developed a set of very specific behaviours that were meaningful and could now be linked to the existing continuous improvement system.

The last step was therefore to develop a management system to make this a real and living approach. This was achieved by including behaviours on their existing Visual Management Board, which was used as a hub for 15-minute daily meetings. Hence, they included on the board a list of the seven business-level behavioural norms together with an indication of which three they were currently working on. They then included a list of the nine specific team behaviours that they had developed, and then decided to modify the meeting approach so that once a week the meeting was extended to 30 minutes, with 15 minutes of this reserved for a discussion about each of the nine behaviours. If they were happening, then a green smiley magnet was placed by them as a recognition. If they were not being achieved, then a red sad face was placed next to them.

If there was a sad face, the standard that was developed was that an 'ideas form' was completed, this being the same A5 document that was completed for any other bottom-up idea. This was then entered into their existing ideas system, whereby the team identified the root cause of the issue and developed a corrective action plan. In other words, behavioural improvements were entered into the same system as if they were technical problems.

The depiction of the nine behaviours and their status also provided the senior managers in their gemba tours with the opportunity to see whether the behavioural norms were active, living and being improved within the local team. As we will see in the chapter on Leader Standard Work, this gives them the opportunity to recognise good performance and support local teams in improving performance where opportunities are identified.

Lundbeck

A further example of behavioural deployment is provided by Lundbeck in Copenhagen, Denmark, with eight behaviours displayed on their Visual Management Boards alongside their KPIs. Each of the behaviours is then sorted into red, amber and green smiley face columns at their board meetings. Again, development conversations are had if the behaviours do not all fall in the green column.

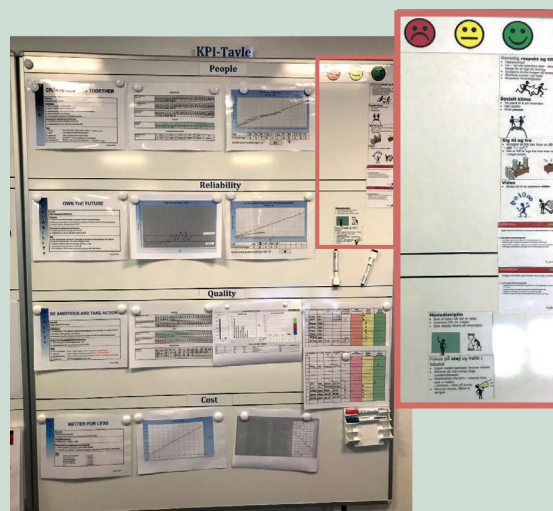


Figure 3.23: Team behaviours at Lundbeck

‘Naku te rourou nau te
rourou ka ora ai te iwi’
(Maori proverb)
‘My basket and your
basket of knowledge,
together we grow’
(English translation)

Case study: Auckland Council Pools & Leisure Business Unit

Every great organisation has business units, departments or groups that simply stand out as representing excellence. To achieve excellence, a commitment to continuous improvement must be a way of thinking and behaving right across the organisation. For Auckland Council, New Zealand, one of the standout entities helping them achieve ongoing business excellence and continuous improvement is their Auckland Council Pools & Leisure Business Unit, through their implementation of ‘Base Camp’ and striving towards Shingo accreditation.

Over the past three years this business unit and its staff have successfully developed an impressive culture of continuous improvement. This is now future-proofing the performance, integrity and credibility of their Pools & Leisure operation. The team is constantly exploring, reviewing, re-inventing and striving for continuous improvement across all of its operations, resulting in a business unit with superior staff performance and highly respected services that meet the needs of the local community, its user groups, visitors and customers.

Auckland Council Pools & Leisure recognised that there was an essential ingredient required if long-term success and sustainability was to be achieved to better service the needs of the Auckland community. With the global recession, it was evident that times were becoming increasingly tighter for residents and ratepayers alike. Ratepayers simply could not continue to endure unaffordable rate increases year after year. Auckland Council recognised this and was responsive to these issues by exploring the opportunities available to help provide better local services for less.

What is the purpose?

The purpose of Pools & Leisure is directly to contribute and align to the organisation’s overarching vision of ‘Creating the world’s most liveable city’. In order to deliver on this purpose, it was evident that the Pools & Leisure business unit needed to clearly understand the actual plan for Aucklanders both now and into the future. At a very high level, the plan both now and in the long term translated as follows.



A plan for all Aucklanders / TE MAHERE A TĀMAKI MAKAURAU – MĀ TE KATO A O TĀMAKI MAKAURAU

The Auckland Plan is the strategy to make Auckland an even better place than it is now and create the world’s most liveable city. It shows how it will prepare for the additional one million people they may have to accommodate by 2040, and the 400,000 new homes needed. Many people were involved in the preparation of this plan: Auckland residents, community groups, infrastructure providers, central government, iwi (indigenous tribes), business groups and voluntary organisations. Although the Mayor and Auckland Council led its development, the Auckland Plan is owned by Auckland and all Aucklanders, and its successful implementation will require leadership, action, investment, and commitment from many organisations, groups and individuals.

Auckland now and into the future / TE TŪMANAKO MĀ TĀMAKI MAKAURAU

Auckland’s vision is to become the world’s most liveable city. As the world’s most liveable city, Auckland will be a place that

- Aucklanders are proud of
- they want to stay or return to
- others want to visit, move to, or invest in.

The goal of liveability expresses the shared desire to create a city where all people can enjoy a high quality of life and improved standards of living, a city which is attractive to mobile people, firms, and investors, and a place where environmental and social standards are respected.

AUCKLAND'S VISION						
THE WORLD'S MOST LIVEABLE CITY						
OUTCOMES: WHAT THE VISION MEANS IN 2040						
A fair, safe and healthy Auckland	A green Auckland	An Auckland of prosperity and opportunity	A well-connected and accessible Auckland	A beautiful Auckland that is loved by its people	A culturally rich and creative Auckland	A Maori identity that is Auckland's point of difference in the world

The long-term plan (2012–2022) sets out the council’s projects and budget for the next ten years. It is the starting point for turning the aspirations of the Auckland Plan into an implementation plan. This aligns with the Mayor’s vision to create the world’s most liveable city.

Auckland Council Pools & Leisure aligned to the purpose of ‘Creating the world’s most liveable city’ through the development of a game plan – a three-year transformational programme designed directly to align and deliver on Auckland Council’s vision through achieving the goals of Pools & Leisure:

- Inspiring more Aucklanders to be active
- Inspiring our children, young people and whanau (family) to reach their potential
- Delivering an operationally cost neutral network.

By ‘more Aucklanders’, the Pools & Leisure business unit mean specifically those who recognise the benefit of being active, but face a myriad of opportunity and confidence challenges that make them insufficiently active. In short, Pools & Leisure want to grow the market, not their market share, thus inspiring more Aucklanders to be active.

The game plan was built around the premise that if Pools & Leisure target the right people and create and demonstrate value for the customers, then their business would grow and they would become less dependent on ratepayers. This means being driven by customer needs, looking continuously to improve, and using their size and scale to their advantage, so that they could deliver better value for Aucklanders.

The game plan was a carefully thought-out strategy for the Pools & Leisure Team on the course of action required from them so that they could win the game – the ‘winning’ being their ability to play their role in contributing to and delivering on ‘Creating the world’s most liveable city’.

Continuous improvement supports all elements of the game plan, in part by reducing waste to create more time and increase creativity and innovation for all Auckland Pool & Leisure employees. This is centred on the heart of continuous improvement being in the unswerving pursuit of operational excellence and in seeking and delivering true value to their customers or ‘fans’ in everything that they do.



Figure 3.26: Strategy formation and deployment at Auckland Council Pools & Leisure

The deployment of the game plan down through the organisation was achieved by making each centre manager, at over 20 locations, accountable for developing a Visual Management Board (VMB) with their team, which linked directly to the game plan. Each centre manager also ensured a direct link to what their customer groups valued, as each centre had a different range of offerings and specific customer groups. The centre manager then facilitated a discussion with their team to develop relevant metrics. Some sites were relatively small and required just one VMB, but the larger sites deployed multiple VMBs across different teams.

Establishing daily start-up and shift handover meetings around the VMBs was key to making them effective. This was seen as significantly improving staff communication and enabling people to see how they could support the game plan.

The effectiveness of the deployment was checked through employee engagement survey results, employee net promoter score results and customer net promoter score results. All of these showed positive improvement with the employee net promoter score (eNPS) results more than doubling in the 12 months after the introduction of the VMBs.

Tablets were purchased in advance of the start-up meetings commencing. This allowed the teams plenty of time to review and develop the checklists and programme them onto the tablets. This improvement in technology has reduced the need for paper checklists, reduced the time to undertake the tasks and improved performance by using photos and videos. These were used to inform the daily operational readiness report, which formed a key part of the discussion at the daily start-up meeting. The information in the report gives staff the necessary information to complete the tasks needed to improve operations at the centre.

An example VMB is shown in Figure 3.27.



Figure 3.27: Visual Management Board at Auckland Council Pools & Leisure

In order to ‘win the game’ the team needs a ‘playbook’. The playbook sets out how each team plays their role and how to make the right calls when they are on the field. It sets clear expectations on behaviours and one example of how these have been deployed is shown in Figure 3.28.



Figure 3.28: Behaviours at Auckland Council Pools & Leisure

Our PSR Behaviours: What our customers and colleagues will see

SERVE			DEVELOP		
Gold - Love to see	Green - Expect to see	Red - Don't want to see	Gold - Love to see	Green - Expect to see	Red - Don't want to see
<p>Makes things easy for the people we serve</p> <ul style="list-style-type: none"> Makes everyone feel supported, welcomed and appreciated 	<ul style="list-style-type: none"> Is considerate, polite and thrives on service Greets newcomers and arrivals Remembers people's names 	<ul style="list-style-type: none"> Ignores or avoids colleagues or customers Is aggressive, rude or impolite Is judgemental / disrespectful to others 	<p>Gives and receives feedback</p> <ul style="list-style-type: none"> Speaks up constructively to offer feedback when people don't live up to our PSR behaviours or give their best 	<ul style="list-style-type: none"> Appreciates good work and says thanks Sees the benefit of feedback and encourages their colleagues and customers to be involved 	<ul style="list-style-type: none"> Is not open to hearing or acting on feedback about themselves Blames other people
<p>Values diversity and includes others</p> <ul style="list-style-type: none"> Brings out the best in others by recognizing their different abilities 	<ul style="list-style-type: none"> Is accepting of differing points of view to their own Shows interest in what others say 	<ul style="list-style-type: none"> Makes assumptions about people Goofs about people Doesn't let others ask questions or express views Is indifferent to other people's concerns or feelings Doesn't listen to others Talks over people Is out of dominance 	<p>Thinks big - sets a performance / behaviour goal</p> <ul style="list-style-type: none"> Encourages colleagues to work to their full potential 	<ul style="list-style-type: none"> Is positive about what can be achieved Has high standards, and motivates others to meet them 	<ul style="list-style-type: none"> Uses best industry practice to deliver outcomes, whatever their role Celebrates and shares success
<p>Understands our customers and colleagues' needs</p> <ul style="list-style-type: none"> Is attentive to other people Takes time to 'put themselves in other people's shoes' Seen as a place of 'trust and safety' 	<ul style="list-style-type: none"> Checks in to see that people are okay Does what they can to reduce other people's concerns Goes back to people 	<ul style="list-style-type: none"> Is careless with the council's resources Doesn't work in a sustainable way 	<p>Stays ahead of the game</p> <ul style="list-style-type: none"> Inspires others to be creative in finding better ways to do things Supports other people's learning 	<ul style="list-style-type: none"> Spreads up every time they see poor or unsafe behaviour Reviews own performance and outcomes to look for better ways to do things Proactively finds ways to improve their own knowledge and skills 	<ul style="list-style-type: none"> Walks by or ignores poor or unsafe behaviour Refuses to consider new approaches
<p>Spends 'ratepayer' money wisely</p> <ul style="list-style-type: none"> Takes care to ensure ratepayers always 'get the best bang for their buck' 	<ul style="list-style-type: none"> Keeps within departments' spending plans Prioritises their work to the priorities of the council 		<p>Works safely</p> <ul style="list-style-type: none"> Shows become trained and supports others to improve safety 	<ul style="list-style-type: none"> Follows safe working practices, is vigilant about risks and challenges unsafe things when they see them 	<ul style="list-style-type: none"> Rebels change even if it will lead to improvements for customers or colleagues Doesn't look to learn or improve their own skills
COLLABORATE			ACHIEVE		
Gold - Love to see	Green - Expect to see	Red - Don't want to see	Gold - Love to see	Green - Expect to see	Red - Don't want to see
<p>One counsel, family - working together</p> <ul style="list-style-type: none"> Involves customers and colleagues to make informed choices about things that affect them 	<ul style="list-style-type: none"> Keeps colleagues in their team (and in other teams) updated about things they are jointly involved in 	<ul style="list-style-type: none"> 'Hands protection' Acts without involving people in issues that affect them 	<p>Access to resources clarity for all</p> <ul style="list-style-type: none"> Follows up to check that people have understood what's happening 	<ul style="list-style-type: none"> Explains clearly, using appropriate language, so people can understand 	<ul style="list-style-type: none"> Uses jargon or confusing language others have trouble understanding
<p>Success is a shared goal - attentive and helpful</p> <ul style="list-style-type: none"> Always wants to make a difference for customers or colleagues even if it means putting themselves out 	<ul style="list-style-type: none"> Proactively asks people if they need help Offers to find someone to help if it's not something they can sort themselves 	<ul style="list-style-type: none"> Stank back until someone asks for help - 'not my job' Ignores people in obvious need of assistance 	<p>Is an ambassador for council</p> <ul style="list-style-type: none"> Gets stuff done 	<ul style="list-style-type: none"> Stays responsive to customers and colleagues in all circumstances Work is well-organised and activities fully planned 	<ul style="list-style-type: none"> Is regularly late or cancel/cancelled meetings, just before they are due to begin Work is disorganised or unplanned
<p>Communicate - make a big difference through 'talk the shrap'</p> <ul style="list-style-type: none"> Connects teams and services, inside and outside of council, so they can work better together Contributes proactively and effectively in meetings 	<ul style="list-style-type: none"> Keeps people informed so they know what's happening Is prepared for meetings and is ready to contribute 	<ul style="list-style-type: none"> Keeps information to themselves that others need Is poorly prepared when asked for information 	<p>Works safely</p> <ul style="list-style-type: none"> Shows become trained and supports others to improve safety 	<ul style="list-style-type: none"> Is aware of the impact of the things they say and do on other people Takes responsibility for their own work and getting it completed 	<ul style="list-style-type: none"> Takes their stress out on others via their tone, language and behaviour Does only as much as is needed to get by
<p>Respect yourself and others</p> <ul style="list-style-type: none"> Shows respect and aspects it in return Finds constructive solutions to conflicts Does not tolerate colleagues or customers being disrespectful to others 	<ul style="list-style-type: none"> Shows respect for the council and works within its structures Values colleagues and treats them with regard 	<ul style="list-style-type: none"> Shows disrespect for the council Disregards their manager Does 'silly things' that make people feel unsafe / undermined or hurt 		<ul style="list-style-type: none"> Follows safe working practices, is vigilant about risks and challenges unsafe things when they see them 	<ul style="list-style-type: none"> Doesn't follow safe working practices Covers up errors Doesn't take the time to understand or learn about safety procedures

Figure 3.29: Behaviour details at Auckland Council Pools & Leisure

The playbook also provides a set of simple questions people can use at a local level to guide decision making to ensure they are ‘calling the right play’. The questions ask whether what is being discussed explicitly supports the goals – if not then they don’t do it.

Finally, the player profiles describe the specific thing that each and every member of the team needs to do to be successful.

Case study: O. C. Tanner

We will now see how this works in another case, that of O. C. Tanner, Salt Lake City, USA. They describe why they do this in the Tanner Systems Book (2010):

'Our daily work must ... be driven by our strategy and every person in our company must be involved in the development and execution of our strategy. In this way, we align and focus our improvements on that which is most important to our customers, our people and our company.'

Their annual strategy formation process sits within the context of their long-term direction or True North statement, which covers eight enduring themes within the business. The annual formation activity involves a scanning process. The executive leadership thoroughly analyse the business environment, including corporate objectives, current performance on key metrics, customer feedback, market trends, changes to laws and regulations and the status of current improvement efforts. This allows them to set their strategic objectives for the year. The result of this is the annual O. C. Tanner Strategy Map. This is then communicated to the whole company and is also accompanied by management and local teams scanning their own project status and performance metrics. After this there is local catch-balling and deployment by team.



Figure 3.30: True North at O. C. Tanner

Case study: Strategy deployment at Accolade Wines

Accolade Wines, Avonmouth, UK, provides a good example of strategy deployment that is anchored in its corporate strategy. The Australian corporate body provides the vision, set of values and tangible goal. This has been translated by Richard Lloyd and his bottling facility colleagues into an operations-level strategy. The strategy takes into account these corporate needs, the current performance and feedback from the employee engagement survey as well as what is going on in the business.

The approach they use here is to undertake a huge Value Stream Mapping of their operations. This is then shared with the whole workforce in the main meeting room. The workforce is invited to comment by adding sticky notes. These hundreds of notes include both technical comments and suggestions as well as more personal inputs around areas where people feel overburdened. This work also includes the type of behavioural deployment we discussed above. The result of this is an annual roadmap including a set of major transformational projects. This site-level plan is subsequently cascaded through a simple but effective six-page communication mechanism to the various functions, who then develop their own roadmap and behaviour standards.

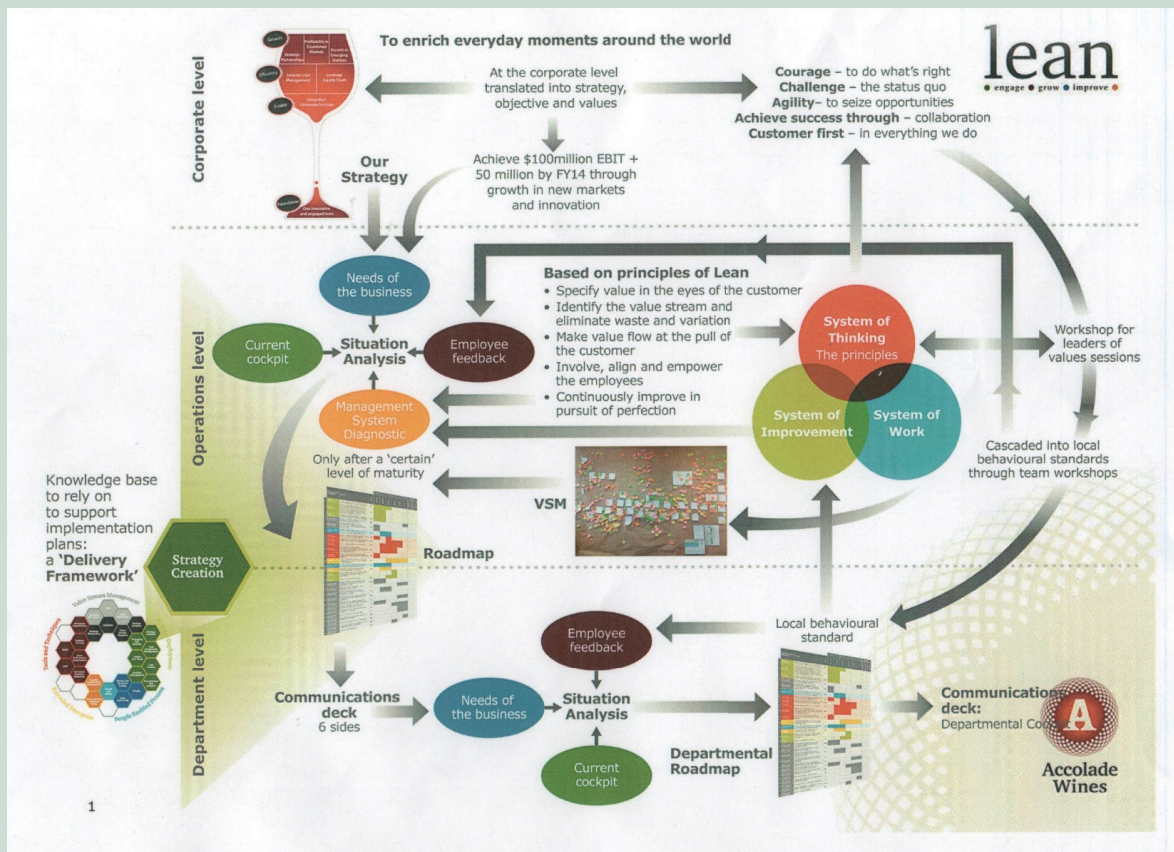


Figure 3.32: Strategy deployment at Accolade Wines



Figure 3.33: Value stream mapping within strategy deployment at Accolade Wines

Case study: Strategy deployment at Mylan Damastown

A further example of strategy deployment is provided by Mylan Damastown’s pharmaceutical site in Dublin, Ireland. Here the management team create an annual set of top-level company objectives which fit within their long-term vision and business strategy. These are then split down into a Strategy House using the four dimensions of the Shingo Model: Results, Enterprise alignment, Continuous improvement and Cultural enablers. There is a clear linkage made between the colour-coded business strategy and each of the lower-level targets. Some of these targets are monthly and some, like a quarterly customer survey, are measured less frequently. The management team review progress on these targets using red and green sticky circles.

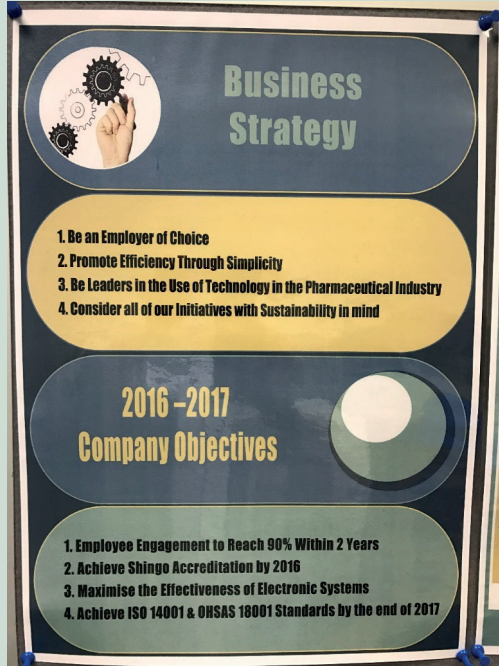


Figure 3.34: Business strategy at Mylan

		Strategy & Objectives 2016/17	
Our Vision: To be Recognised as one of the Top 10 Manufacturing plants in the World and Triple Production Output by 2024			
Business Strategy; Rottapharm will ; 1) Be an Employer of Choice. 2) Promote Efficiency Through Simplicity. 3) Be Leaders in the Use of Technology in the Pharmaceutical Industry. 4) Consider all of our Initiatives with Sustainability in mind.			
2016-2017 Company Objectives 1) Employee Engagement to Reach 90% Within 2 Years. 2) Achieve Shingo Accreditation by 2016. 3) Maximise the Effectiveness of Electronic Systems. 4) Achieve ISO 14001 & OHSAS 18001 Standards by the end of 2017.			
Results 2) Customer Survey - Two customer per QTR with result greater than "Good". 2) OTD - Average Target greater than 97%. 2) OEE - Achieve mean 62% target for the year. 2) BRTs to decrease by average of 15 % in 2016. 2) Meet operational expenses budgeted. 1) Maintain 2.5% absenteeism rate for 2016 with a view to further reduction in 2017. 2) Inventory - Lower or equal to €15.5 million at Year End. 2) Customer order lead time For Sachets and Capsules CGS Reduction from 120 days to 106 days.	Enterprise Alignment 1) Employee Engagement Index %: 76% in 2014. - % improvement in next pulse survey for 2016 - Prepare for site engagement survey in 2017 4) Review risk assessment procedure - shift focus and ownership from EHS team to site-wide. 2) Use the A3 problem solving process to remove those issues identified and agreed as requiring cross functional team involvement and supported by OpEx - use the A3 process as a platform for team involvement development and recognition. 1) 121 meetings at least every 2 months. 4) Achieve and maintain 65 standard. 1) Achieve at least 80% compliance with the training plan 3) Develop strong areas of innovation in order to develop step-change projects for the company. 3) Implement project as listed.	Continuous Improvement 1) Aim to achieve ETP by end of 2016. 2) LSW -- make more process specific. 2) Upgrade PEMAC forms to latest version. 2) Develop departmental expertise for generation of reports from LIMS. 3) SAP report development – identify additional reports relevant to the business. 4) Implement a Total Waste Management contract. Identify potential improvement opportunities.	
Cultural Enablers 1) Open two way communication – enhance and improve all site communications through the development of a site communications strategy. 1) Performance Management – Maintaining current standard with a view to exploring ways of eliminating formal annual appraisal by 2017. 1) Reward and recognition – continue to explore methods for enhancement and establishing a collaborative site wide approach. 1) Compensation and Benefits – continue to conduct external benchmarking exercises. 1) Learning and Development – continue to ensure that all staff have access to L&D opportunities both internally and externally.			
Strategy House - Site-wide			

Figure 3.35: Top-level strategy and objectives at Mylan

The top-level Strategy House is then cascaded to each of the departments such as EHS and Operations and is displayed in the main corridor of the business. Again, each of the targets is monitored by the functional team monthly, with red and green sticky circles recording the current performance.

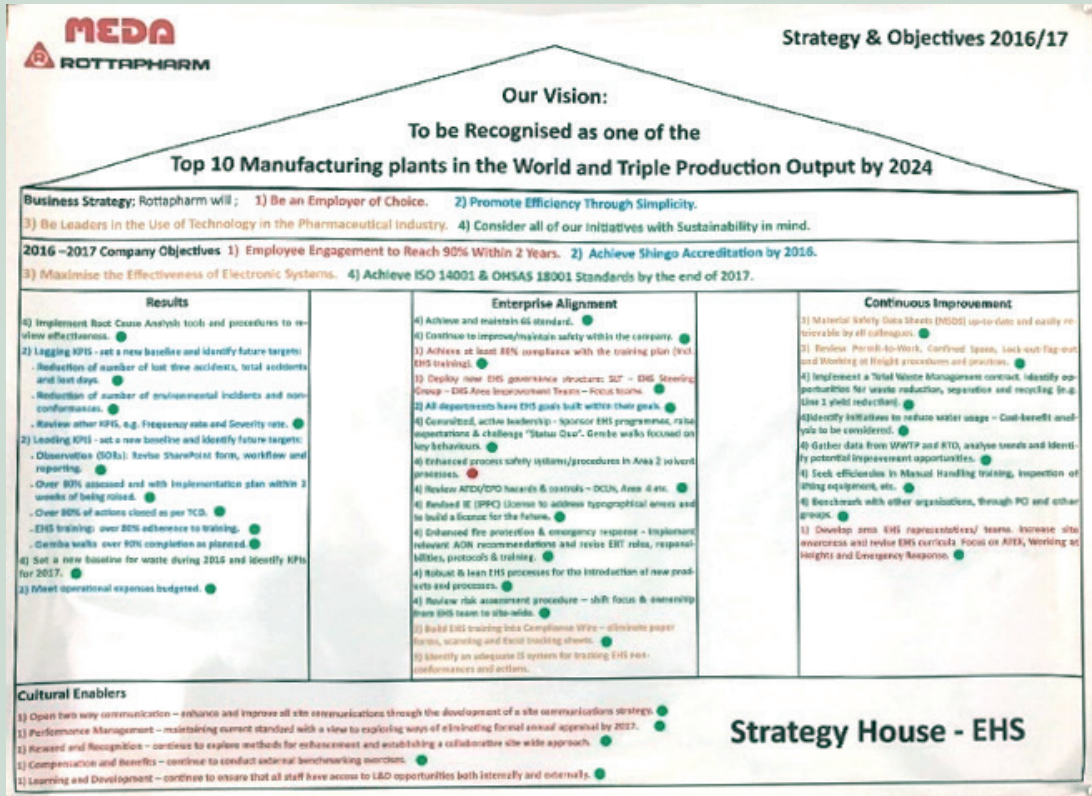


Figure 3.36: Department-level strategy and objectives at Mylan

Within each of the departments, such as EHS shown in Figure 3.36, there is then a series of high level planned improvement activities with detailed lead and lag KPIs.

Case study: closing the circle at Vale's Clydach Refinery

We would like to thank Fiona Buttrey, former Technical manager at Vale, Clydach, for providing this case

Vale's Clydach refinery is one of Europe's largest nickel refineries, producing high-purity nickel pellet and powder products for specialist applications such as high-nickel alloys, batteries, nickel plating and automotive components. The plant, which has been operating since 1902, employs around 200 people and produces over 40,000 tonnes of nickel products with customers in over 30 countries worldwide (Europe, Asia and USA).

Vale is one of the world's largest diversified mining companies and is the largest producer of iron ore and nickel in the world. It is headquartered in Brazil, and has operations in North and South America, Europe, Africa, Australia and Asia. Clydach refinery is part of Vale's Base Metals Business, based in Toronto, Canada.

2008–9: The early days

The global recession of 2008 hit the commodity business hard and brought real questions about the long-term sustainability of a refinery like Clydach. Although the application of ISO systems 9001 and 14001 and OHSAS 18001 had provided a foundation for improvement, the management team recognised the need to go well beyond this and take a radically different approach, engaging everyone in improvement to secure the refinery's future. This was the burning platform – 'business as usual' would not be sustainable in such a competitive marketplace. If they stayed still when other sites were improving, they may well have been closed down. While they recognised that they could not control the actions of people in their head offices in Canada and Brazil, what they could control was their own site's performance. They could set out to be the best refinery in the group – safe, reliable and cost effective.

At this time, the management team at Clydach Refinery was relatively new. General manager Mike Cox had seen some great examples of continuous improvement during visits to customers in Asia, and he was keen to apply this thinking. Technical manager Fiona Buttrey had an interest in Lean manufacturing but didn't really know how to apply the theory in practice. Working for Fiona, Phil Hayman, Quality and Continuous Improvement manager, had a lot of experience of implementing CI tools, but had never embarked on such an extensive transformation project. They needed help, so they engaged external consultants to help them to understand their Lean maturity, set aspirations for the future and to work with them to develop a sustainable improvement programme.

They had tried applying various improvement tools in the past, but these invariably failed to 'stick' and they struggled to sustain their improvements. Management would support the latest initiative, but over time, people didn't really know why they were doing it, attention waned, and activities fizzled out. They recognised the need to take a different approach, weaving in improvement right at the centre of everything they did as the key strategic imperative for the site.

The first step was to hold a strategy session with the senior team, which helped them to understand and communicate to the employees why the leadership team wanted to apply CI at the site. They consciously decided not to call their programme 'Lean' as this held too many connotations of cost cutting and job losses. They developed a strategy presentation, shown below, that was communicated to the whole workforce, and explained why they needed to apply CI to secure their future, and their critical success factors – what they needed to be good at to succeed with this, along with an 18-month roadmap of improvement work and how they planned to measure progress. Although many of the identified improvements were technical (e.g. increasing production capacity), they also recognised the need for behavioural change to support the culture they were hoping to create. There were invariably some sceptics, but in general the message was well received and they embarked on their plan.

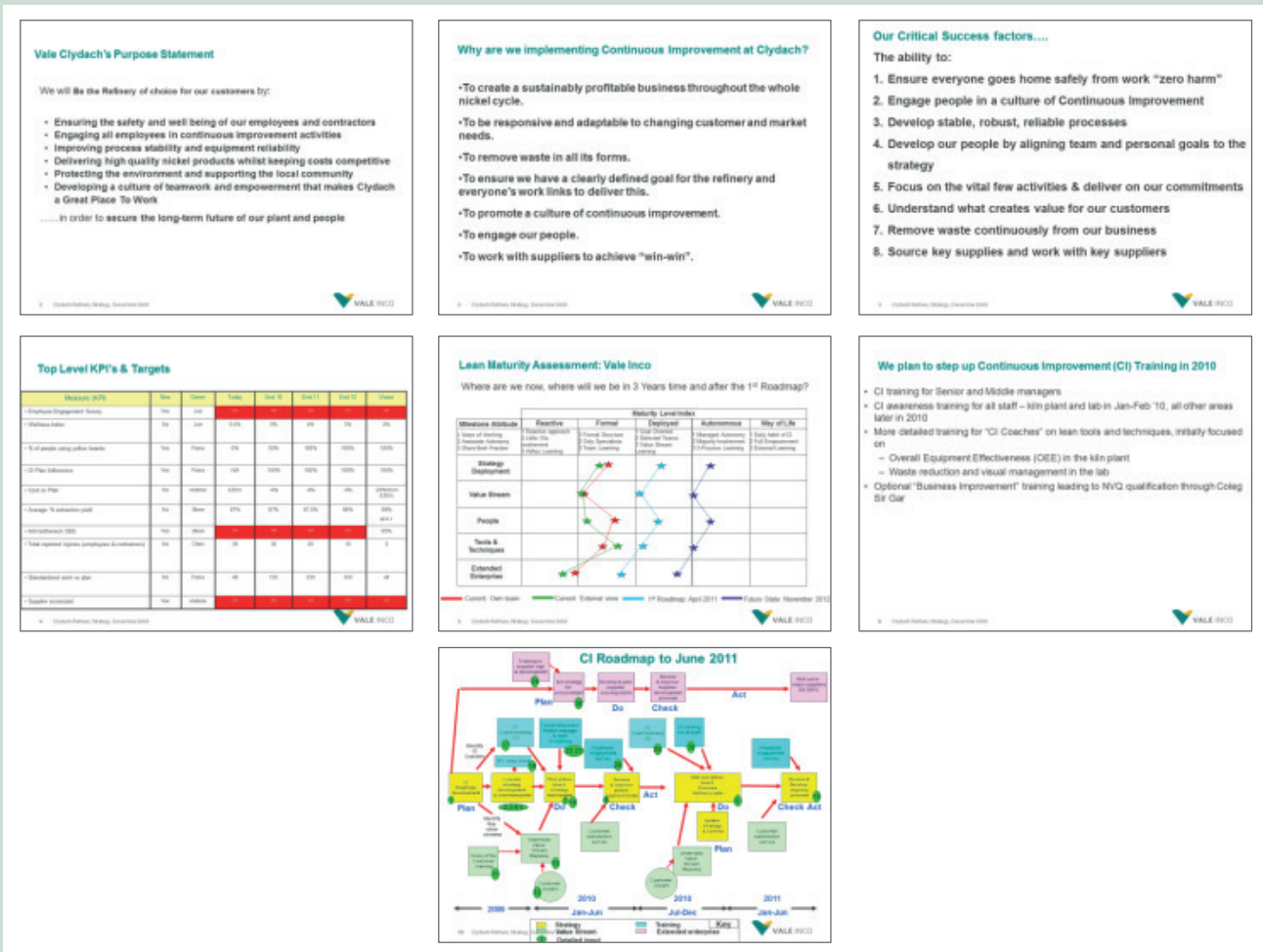


Figure 3.38: Strategy presentation at Vale

2010: The hard work starts

Having articulated a general message of improvement, they recognised the need to make improvements visible to each team and to help the different work groups to see how their improvement projects linked to deliver the refinery's strategy. They did this through 'Yellow boards', a series of Visual Management Boards that aimed to deploy strategy, track KPIs and engage each member of the respective work teams. Piloted in a key operational area and support group first, the boards seemed to go down well with the employees and they soon spread the approach to all operations and support groups throughout the refinery. Although the format and structure of the boards was defined, they chose to allow each area to identify their own KPIs. It was felt to be important to foster ownership of the boards in each area, rather than management imposing the 'right' KPIs. Initially they found it hard to identify what to include in the 'our people' section of the board, which initially included a photo or organisation chart for the team and some training information. After subsequent system PDCA cycles, as we will see, this grew to include behavioural standards and recognition.

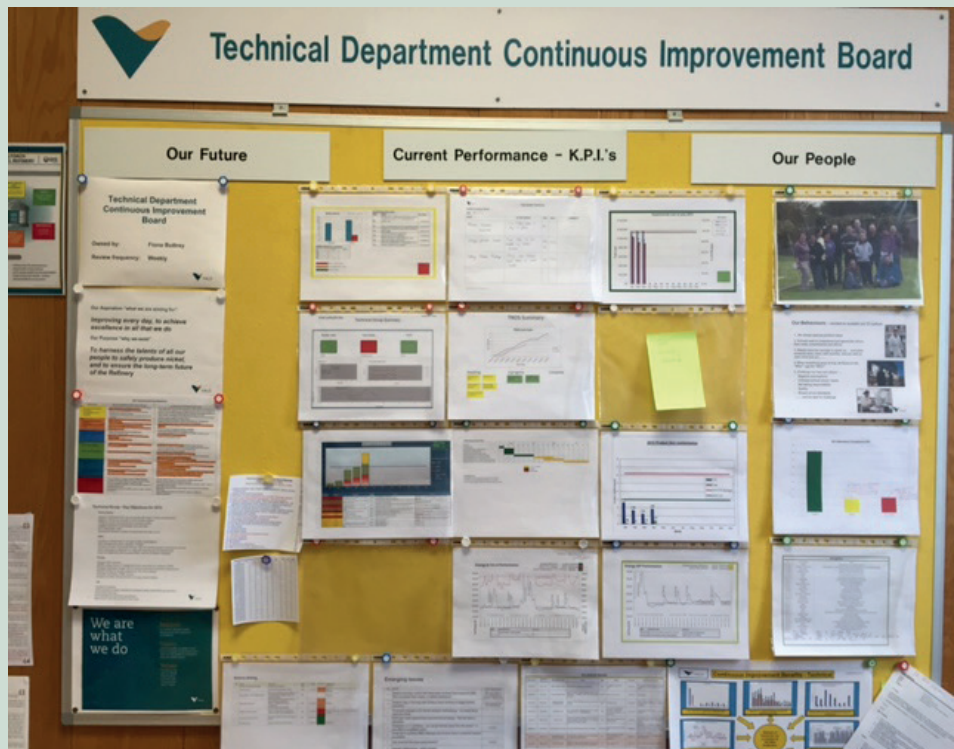


Figure 3.39: A Vale ‘Yellow Board’

Vale has a performance-related pay ethos, paying a substantial proportion of base salary as a bonus. Although part of this is based on company performance and metrics such as production and cost, they identified an opportunity to link the bonus to delivery of CI work on plant. Although some would argue about the moral or ethical merits of incentivising CI work, this proved to be a great way of getting people’s attention, helping to generate interest in CI and securing commitment to delivering on the elements of the CI plan. However, they probably would not have achieved the rate of improvement had they not had this ‘carrot’ available to them; at least in the early days of the CI implementation.

By late 2010 the leadership team at Clydach were starting to understand that successful CI implementation was about more than simply the application of tools such as Standard Work, 5S or problem solving, but required strong and sustained leadership from the management team, aligned behaviours to support CI and a clear strategic direction. These are the ‘under the water’ elements of the Lean iceberg model.



© P. Hines, P. Found, G. Griffiths & R. Harrison, Staying Lean, 2008

Figure 3.40: The Lean iceberg model

Strong leadership is about not just setting targets for tool implementation, but actually getting out into the workplace visibly to support CI activities, understanding if/why there are implementation problems, and coaching to help people to resolve them. It's about recognising that the success of the tools is dependent on leaders continuing to ask good questions about how it's going, and recognising that any failure is as much a reflection on management as it is on the people doing the work. If the CI programme appears to be stalling, the first question to ask as a leader is 'Am I doing enough to support the programme?' and 'Why are people not following this?' rather than reprimanding individuals for their lack of focus.

The management team began to believe that they would get the CI they deserved, based on their time and focus to support the programme. They kicked off management walkabouts, where the management team would walk the site together to speak to employees, understand their issues and champion CI. Although they did some training prior to this, they found that it was possible for leaders to impair CI progress if they said the wrong thing (for example, by focusing on small problems rather than recognising the overall progress made by the area). This improved through coaching as leaders began to understand their role better and started to be seen as people who could help to remove roadblocks rather than as critics.

Effective CI is also driven by management behaviours. It is clearly counterproductive to chastise someone who makes an honest mistake at the same time as trying to create a culture that makes problems visible in order to find and fix them. To promote a CI culture, leaders need to ask what went wrong and how it could be prevented from happening again, rather than focusing on the 'who'. Although behaviours are for the whole workforce, not just for management, they recognised that everyone was watching the leaders to see if their actions matched their words. The management team drafted some behaviours, consulted with the employee council and posted the behaviours on the Yellow Boards, encouraging discussion on them at CI meetings. The management team also met each month to discuss a 'behaviour of the month' and to share feedback on examples of behaviours being followed and missed as a learning opportunity.



Figure 3.41: Our behaviours at Vale

Strategic direction involved explaining the WHY behind the tools, providing a sense of purpose for employees and helping them to see how their work fitted in and was going to make the refinery more effective. They found that when employees understood the WHY, they became much more empowered and engaged, and wanted to be part of the improvement process.

2011: Making it stick

By early 2011 they had completed the roll out of Yellow Boards to all areas of the site, and a key objective at this time was to ensure that these boards were truly being used to drive visual management in each area (both in production plants and in service departments). They wanted to create boards that would be actively used to monitor the measures that mattered in each area, to uncover problems and to drive CI by identifying which projects needed to be focused on first to start to 'move the dial' in the right direction. They didn't want to simply create display boards that would impress visitors. They again used the performance-related pay system to help them to do this, by including a Yellow Board audit by their CI team to assess the effectiveness of each board as part of the bonus for each employee. This evaluated links to tools, alignment with strategy and response to KPIs if performance deviated from expected levels. The assessment continued to evolve over the next five years, with input from Yellow Board owners across the refinery, widening the audit to include leadership and behavioural measures. They eventually stopped these assessments when Yellow Boards were so culturally ingrained that they had become 'the way we do things around here'. Yellow Board audits were backed up by continuing management walkabouts and continued to be linked to the bonus.

At this time, they also recognised that they didn't have an effective way of linking CI improvements to business results. At first, they considered this unnecessary, believing that effective application of CI must inevitably generate results, and that this was some kind of unnecessary justification of their programme. However, over time they came to realise that measuring results brings a key CHECK step into the PDCA process. If the business was doing the right CI work, over time it should be measurable in terms of improved business results. If they were not seeing results, they needed to go back and question the CI work; asking if people were working on the right projects in the right places. They recognised that it was not really important to track the results of each and every individual CI project, but more broadly whether KPIs in every area of the business were all showing sustained improvement. This was unlikely to have happened by chance and could only be ascribed to the cultural change generated by the CI programme.



Figure 3.42: CI display boards in Vale's central engineering

Tracking CI success in other areas also became important in recognising the contribution made by employees, allowing them to take pride in their achievements. They found that it was important to balance the natural feeling of CI enthusiasts that there was always so much more to improve with the need to recognise and celebrate the significant achievements already made, so as not to forget what things used to be like. A great example was the CI improvements display created by the central engineering team, who deliver engineering projects and systems.

2012: Towards operational excellence

In 2012, the leadership reviewed the Shingo Operational Excellence model, and recognised that they had followed much of the Shingo methodology in their CI journey. They decided that an independent assessment of their CI programme against a world-class assessment methodology would be an ideal way to identify

their strengths and weaknesses and to identify further areas for improvement. They had not set out to pursue the award itself, rather the business results that they believed would be generated from following this cutting-edge approach.

A key step at this time was training the whole management team in the Shingo principles of Operational Excellence workshops. This two-day course helped to ingrain their understanding of the cultural aspects of a CI transformation and the links between deeply held principles (e.g. respect for people) and their role in developing aligned business systems, and selecting appropriate tools to drive improvement resulting in exceptional business results.

This led to further coaching for leaders on how to ask the right questions to identify the issues that could help drive the business forward. They also spent time checking the alignment of KPIs, ensuring that strategic goals were connected to relevant operational KPIs driven by plant-level improvement work. For example, the strategic goal of production capacity improvement was linked to an Overall Equipment Effectiveness measure at the bottleneck in the process, with improvement driven by frequent pareto analysis of downtime causes linked to CI projects on the shop floor.

2013: Further focus on strategy

They continued providing strategic updates to the whole workforce every six months, and checked in with each area to see if they could connect their projects to the bigger picture. What the leadership realised at this point was that although strategic direction was clear to them, it was not well understood by the majority of the workforce. They had already learned from their studies of the Shingo model the need for employees to understand the WHY behind the tools being applied in their area to maximise effectiveness, and while they thought they had done a good job of helping teams to understand, it was often still poorly understood.

They had also benchmarked CI activities at a number of other sites by this time and had liked some strategy boards they had seen at a Jaguar Land Rover site, so decided to adopt a similar approach at Clydach. The resulting 'Aspiration Boards' linked Vale's Vision, Mission and Values to the activities necessary in each part of the business. For example, for Production, the board spoke to the need to increase production capacity by some 20 per cent to generate more nickel for customers and to produce it at lower unit cost.

The board showed the aims of each area, together with historical performance, giving a trend over time to allow them to see if they were advancing towards the objective. This was accompanied by data showing how they were doing that year month by month. Departmental heads were responsible for updating the charts monthly. The boards were sited in the main reception area, which every employee would pass on their way in to work. The management team explained the purpose and content of the boards to all employees during the strategic update presentations, and each department head ensured that their team could connect these high-level goals with their Yellow Boards and their individual projects.



Figure 3.43: Strategy boards at Vale

In 2013, they also completed a Shingo Achievement report, showing how the site had applied all aspects of the Shingo model including the cultural enablers in the CI transformation, the strategic approach to enterprise alignment, the continuous improvement systems and tools, and the results achieved. The 50-page document provided a great record of the approach and further reinforced how far they had come.

2014: Shingo success

The Shingo examiner site visit was a great opportunity to get valuable CI feedback from experienced CI practitioners from a range of different industries, from international courier FedEx to a medical device manufacturer. During their three-day visit, the examiners spoke to almost all employees and many contractors on site to ensure that they understood how CI worked at their site, from a shop floor perspective upwards. The whole business was delighted to be awarded a Shingo Silver Medallion, at that time being one of only a handful of UK sites to receive Shingo recognition. This provided a great boost for the whole workforce, who were quite rightly very proud of this achievement. The examiners provided the site not only with great feedback on what they were doing well, such as the level of employee engagement and the approach to strategy deployment, but also helped them to identify opportunities for further improvement.

Despite the success they recognised several opportunities for improvement, in particular to develop even deeper engagement of the people to continue the CI journey and a strategy catch-ball approach that would involve everyone in strategy deployment.

2015: Employee engagement*

Speaking to their employees, the management team had identified an opportunity to make further improvements to employee engagement. They needed to improve collaboration and trust between the management team and the workforce, engaging everyone in creating a better future for the site. They worked with an external consultant on this piece of work, as they had seen the approach at a number of other Shingo-accredited sites. The programme included three main pieces of work (Twomey, 2011; Whyte, 2011; Devine, 2016a; Devine 2016b). First, they held workshops with all employees designed to identify obstacles to the future success of the business. The previous approach to this kind of activity would have been for the workforce to create a list of issues for the management team to review, select from and solve.

When the management team had done this in the past, they had not always followed up on commitments made due to other priorities, or had failed to communicate effectively the work that had been done. This time they identified a list of priorities together and worked as one team including both management and employees to identify solutions and track their progress over time. Engagement council meetings were (and continue to be) held to keep people honest about

progress on actions, to identify new issues and to promote open and honest dialogue between people at all levels. The aim was to promote a sense that ‘we are all one team, working together for the good of the business’.

The second piece of work was to collect data from all employees on the behaviours that they believed would help the site to be successful as a whole organisation, and to craft them into a set of behavioural standards for the site. Rather than being defined by management, these were created by a team with representatives from all levels, so they were seen as everyone’s behaviours. The external consultant later trained behavioural facilitators to deliver training for all employees and contractors on what these standards meant and how they should be applied, and included this in induction training for all new employees. While some people were sceptical initially, by weaving these standards into the meetings and discussions, they increasingly became more comfortable providing each other with feedback, helping us to ingrain this approach.

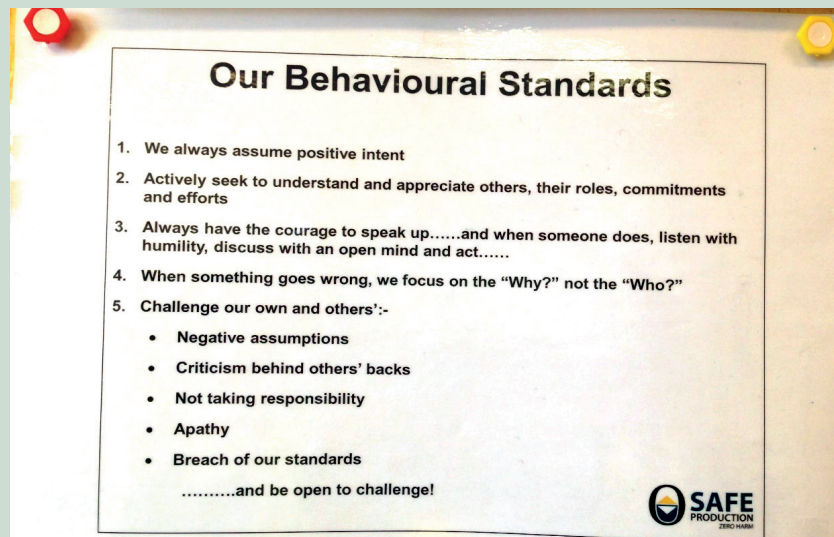


Figure 3.44: Our Behavioural Standards at Vale

The third piece of work was basic management training for the leaders and supervisors. The premise here was that poor or inconsistent management behaviours can have a significant negative impact on employee engagement. They took their people managers through various modules to provide them with a systematic approach to managing their teams.

The training content covered setting clear expectations for employees, genuinely recognising people’s contributions, coaching to help people to identify and close performance gaps, constructive feedback and escalation. The aim was to deliver systematic excellence by consistent application of the methods learned. The management team have gone on to be trained as facilitators to help to people managers to keep these skills sharp so that they continue to develop and improve in this area.

2016/17: Widening strategy deployment

By 2016 the business had a great strategy process, but they had recognised through feedback from the employee engagement process that its delivery was top-down. There was therefore a need to engage more people at the front line in helping create a better plan. While the management team might be in the best position to identify key strategic imperatives, they were not always able to identify the best way to deliver on them. Hence, they widened the annual strategy meeting to include representatives from all operational and support areas generating long-term and annual objectives based on a *Hoshin Kanri* template. They then asked each team to generate their own improvement projects linked to the annual objectives that would help them to deliver on their goals. This helped people to feel that they had been involved in defining the future direction of their area, to ensure that work

was practical and deliverable, and fostered a sense of collaboration. Strategic project progress was tracked monthly in each team, and regularly reviewed by the management team.

In 2017 they also returned to the Shingo model to reassess themselves and to identify further opportunities for improvement.

Case conclusions

Behaviour and strategy have been at the heart of Vale Clydach's CI journey, but rather than finding a single approach, they have grown and developed over time based on their maturity and understanding of CI, feedback from the employees, and business results. There has been a continued PDCA approach applied within the **behavioural & strategy deployment** system. What works for the business today is very different from what they needed back in 2009. The key approach has been to keep things as simple as possible, try things out, listen to feedback and continue to evolve. Without a behavioural culture that supports CI it is difficult to engage people, and without a clear strategic direction you risk people making improvements in places which don't help the business. Getting these things right has helped a 100-year-old refinery achieve dramatic operational improvements across all areas of the business, something which doesn't happen by chance.

- **Safety** – The refinery's CI programme has yielded dramatic safety improvements. Between 1995 and 2000 they averaged ten lost time injuries per year; in the last five years they have had four lost time injuries to Vale staff – too many with their aspiration of zero harm, but a significant improvement in safety culture.
- **Production** – increased production capacity from 85 million pounds of nickel to 100 million pounds (around 15 per cent) with very limited capital input. They achieved this by systematically applying CI tools at the refinery bottleneck and engaging employees to come up with improvement ideas. They broke all-time production records in 2013 and 2016.
- **Customer complaints** – they have seen a reduction of over 55 per cent since 2008 in customer complaints where the refinery is found to be at fault. This has been achieved by the application of CI tools to detect errors earlier in the process so they do not affect customers.
- **Energy** – they have improved energy efficiency by over 16 per cent since 2008 saving over 7,200 tonnes of CO₂ annually and reducing one of the largest costs.
- **Waste** – they have increased re-use and recycling of site waste to close to 100 per cent since 2015 – with almost zero waste to landfill (apart from asbestos, which cannot currently be recycled)
- **Improvement ideas** – Employees have implemented nearly 2000 improvement ideas since the launch of the employee suggestion scheme in 2009.

*We are indebted to Frank Devine for this additional information that might be helpful to the reader: "There is a radical alternative to the traditional top down approach to creating a continuous improvement culture and the associated behavioural norms. This was developed by Frank Devine (See Devine, 'When Employees Create their Own High Performance Culture' LMJ 2016 and 'The Rapid Mass Engagement Process Part 2' LMJ 2016). In this approach called 'Rapid, Mass Employee Engagement' all the employees on a local site who constitute an interdependent system:

- create their Behavioural Standards in the language chosen by the employees, not in managerial or academic language
- agree with the local senior management team a jointly-owned change plan to overcome the prioritised obstacles to achieving the site's Higher Purpose
- while leveraging and amplifying continuous improvement throughout the process

What is distinctive about this approach is the source of momentum and sustainability i.e. from the bottom up as well as from top-down. This was the approach adopted at Boston Scientific and Vale referenced elsewhere in this book and at many other award-winning sites from the late 90s onwards. For a detailed academic assessment of this approach see the MSc Dissertations by Twomey, Cardiff, 2011, Whyte, Cardiff, 2011 and Garvey, Buckingham 2015."

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

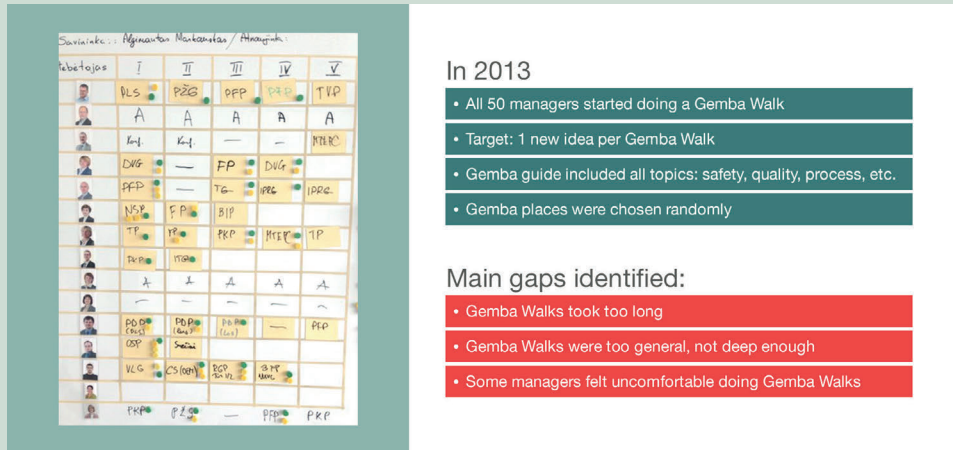


Figure 5.32: Gemba walks in 2013 at Thermo Fisher Scientific

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.

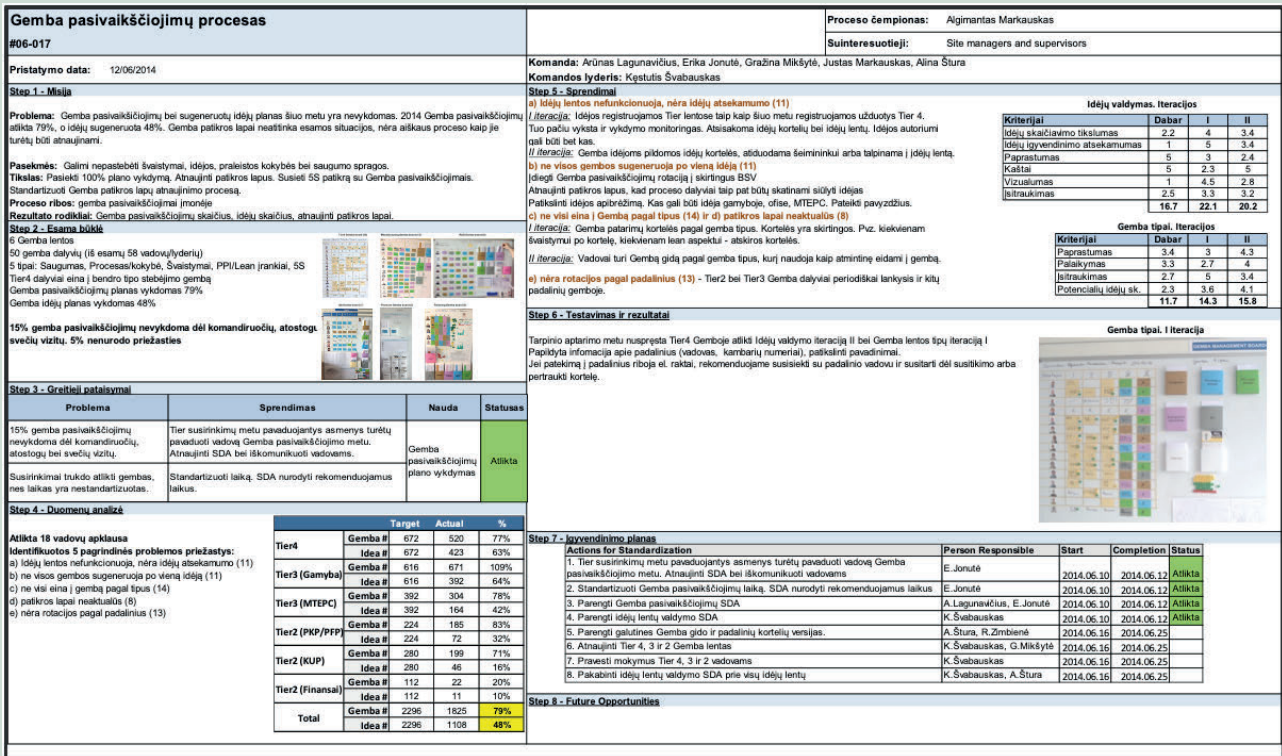


Figure 5.34: First review of Gemba walks in 2014 at Thermo Fisher Scientific

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). <ul style="list-style-type: none"> 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). <ul style="list-style-type: none"> 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 >>	Lean skills matrix prepared
	Managers feel uncomfortable due to: >> Lack of clear goal in a Gemba Walk >> Visiting irrelevant places	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.	
Gemba: coach and learn	
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).

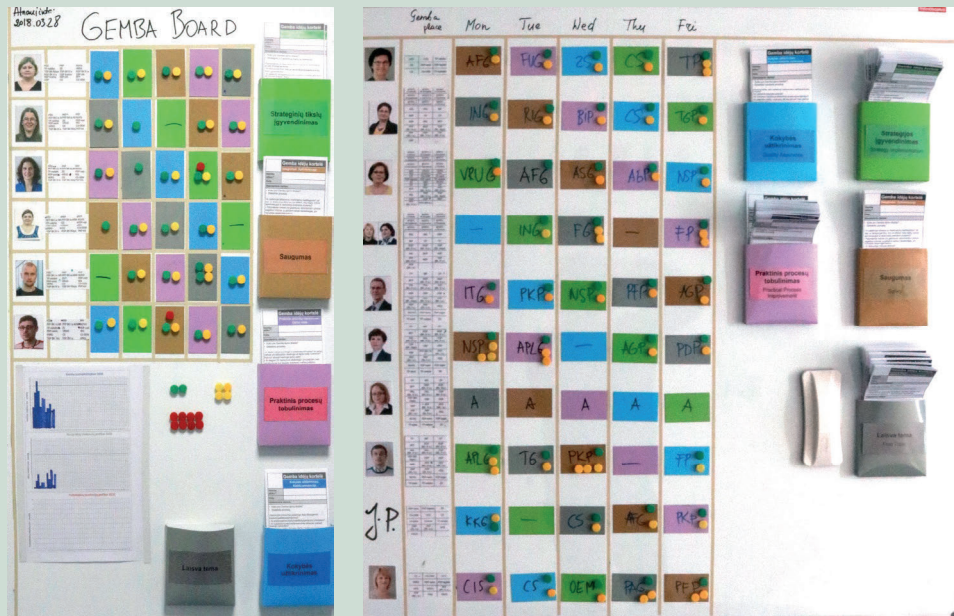


Figure 5.38: Gemba Visual Management Boards for Tier 2 and Tier 4 in 2017 at Thermo Fisher Scientific

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...

The CHECK & ACT cycle at STMicroelectronics

STMicroelectronics is a leading provider of semiconductor solutions, employing 45,000 globally with manufacturing operations primarily in Europe and Asia. They have a very wide product range with many products aimed at the Smart Driving and Internet of Things markets. They have strong central learning & development team, led by Jean-Louis Champseix, that supports people across the business at both a global and local level. There are three learning & development principles that govern their activity:

- 1 Learning & development actions must be strategically aligned with business needs
- 2 Site HR and learning & development are accountable for 'Time to Competency' (TTC)
- 3 Learning processes are owned by management and must secure a virtuous loop towards an effective, sustainable learning organisation.

The business has a long tradition of **learning needs analysis**, which has resulted in a range of bottom-up local learning activities. An initial business-level learning needs analysis was conducted in 2014, which set the parameters for what should be delivered at an organisational level and what should be delivered locally. This was not an easy task for such a large global organisation, but it led to good progress in 2015 and 2016.

In 2016 Jean-Louis Champseix and Anne-France Leblois, the Corporate Learning Training Process Manager, recognised a need for a further step change in learning & development. In particular, this was to embed the above three principles, especially the need for strategic alignment, so Anne-France Leblois led another learning needs analysis (LNA 2.0). HR was led at a corporate level by Philippe Brun, pioneer of Lean in the business, having run one of their French factories where he introduced Lean in 2008. As a result, much of the thinking within HR was influenced by this Lean approach. Consequently, when the three principles for the LNA 2.0 were developed they had a decidedly Lean feel to them:

- 1 Value added for final customer
- 2 Overall flow speed with a focus on the elimination of waste
- 3 Collaborative and transparent activity.

LNA 2.0 was in three stages (Figure 6.17):

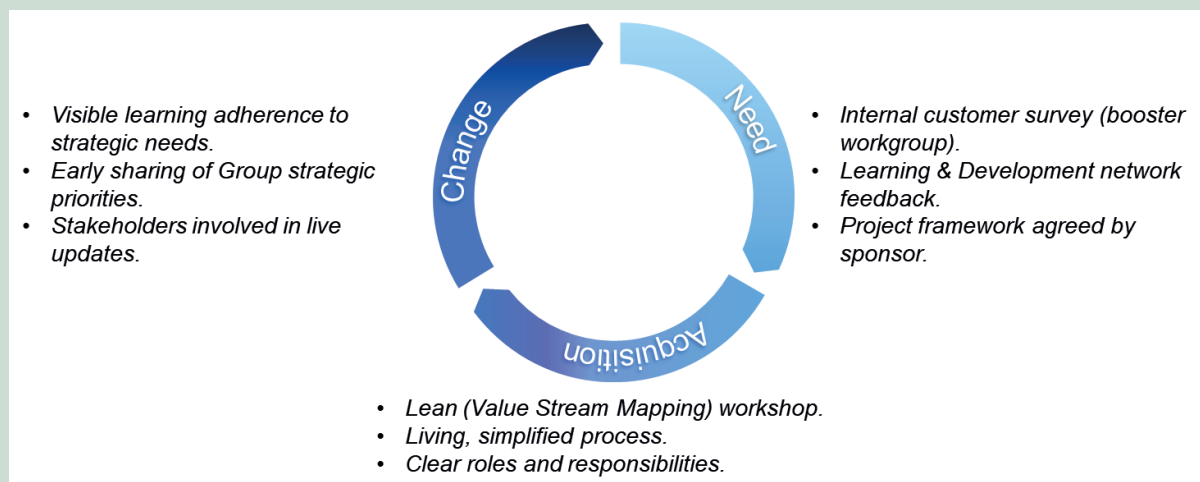


Figure 6.17: Learning needs analysis at STMicroelectronics

Need

The first stage was to establish the need, in particular the voice of the customer. Part of this involved a regional booster project that surveyed 53 local managers. Part of this was to check whether there was an alignment between training and strategy; the answer showed some room for improvement (Figure 6.18):

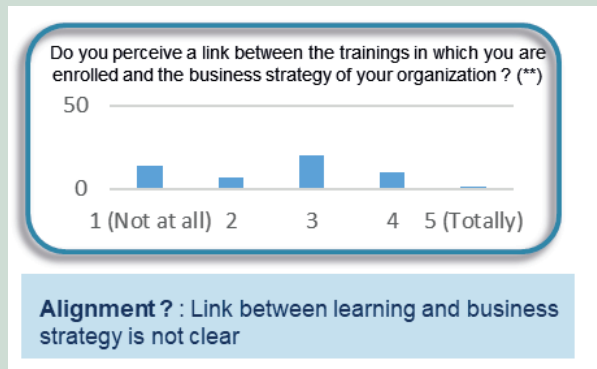


Figure 6.18: Understanding the link between training and strategy at STMicroelectronics

Three major areas were identified where the current state did not work as well as it might:

- 1 **Communications:** Although there was a well-established strategy, and consequently learning needs, at the top of the organisation it was not familiar to most of the managers
- 2 **Organisation:** Vice presidents were not seen to be driving learning; it was viewed as an 'HR process' and Group HR were not perceived with the same legitimacy as the VPs when addressing technical and business needs
- 3 **Deployment:** There was no clear owner, with roles confused between Group HR and Learning & Development.

This survey was augmented by a series of regional workshops covering around two thirds of the global learning & development community. The findings from this were very much in line with the voice of the customer exercise. Four key opportunities emerged:

- Clarify ownership of the process
- Define clear roles in the process
- Simplify the approach
- Measure progress.

The exercise did, however, identify a number of positives, including a shared worldwide view, increased awareness of the LNA activity and an improved synergy between Group HR and local learning teams.

The findings of this research were consolidated into a fishbone diagram (Figure 6.19), which also received input from Olivier Ardesi, who headed up Lean globally, and Karen Duhart, the Corporate Learning & Development Programme Manager with responsibility for Lean.

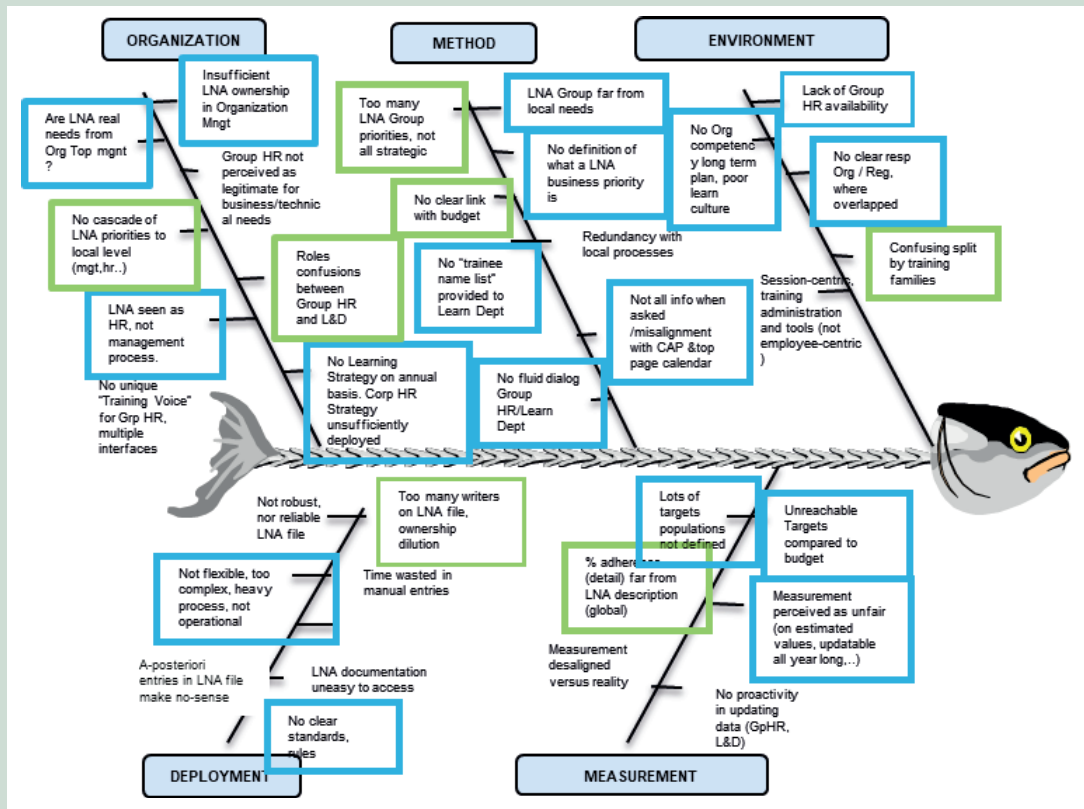


Figure 6.19: The voice of the (internal) customer at STMicroelectronics

Acquisition

This second stage entailed a detailed review of the learning & development process between September 2016 and April 2017, led by Anne-France Leblois. This Lean review used a Value Stream Mapping approach involving over 30 contributors from seven functional areas across six sites in four countries, supported by two local Lean champions. Two of the meetings brought the core team members together physically, with other sessions run remotely through conference calls.

This resulted in a **current state** and **future state map** of ST’s learning & development process. The current state map consisted of 51 steps (Figure 6.20). The majority of the waste in the current state process was found to be due to the process structure, unclear roles, unclear accountabilities, schedule variability and poor business alignment, particularly budget alignment.

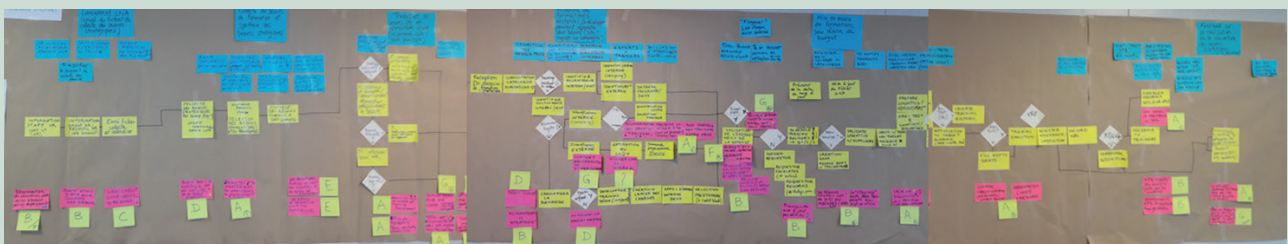


Figure 6.20: The current state of STMicroelectronics’ learning & development process

The future state map was much simpler, with 21 steps. In Figure 6.21 we illustrate the first two phases: business-level LNA and translation into local needs. Two further phases involved execution and measurement. It shows a much greater involvement of local managers, clear responsibilities (using the RACI approach), a clearer schedule and an integrated budget.

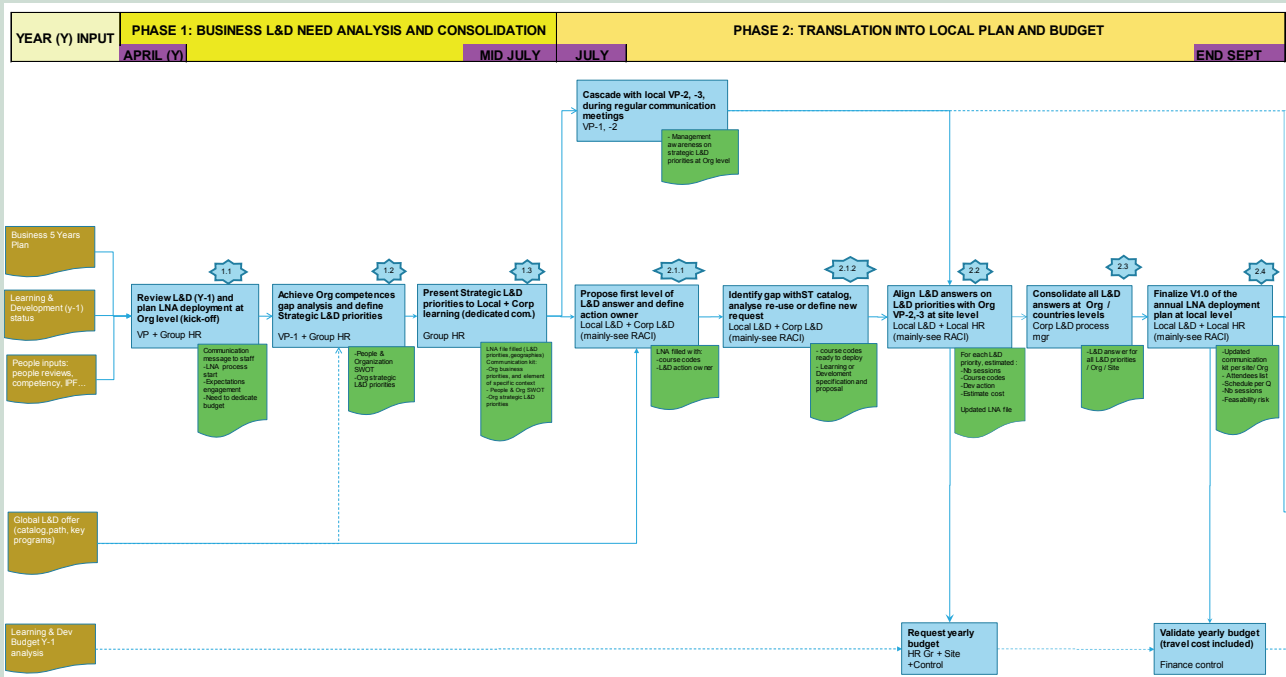


Figure 6.21: The future state of STMicroelectronics' learning & development process

Change

The hardest part of the LNA 2.0 was implementing change over such a large organisation. As a result, considerable effort was put in to this by Corporate HR, Group HR and the local learning & development community (see Figure 6.22). Part of this was a programme of communication, together with individual counselling. This was also accompanied by a dedicated online workspace for LNA 2.0 with RACI instructions and standard operating procedures.

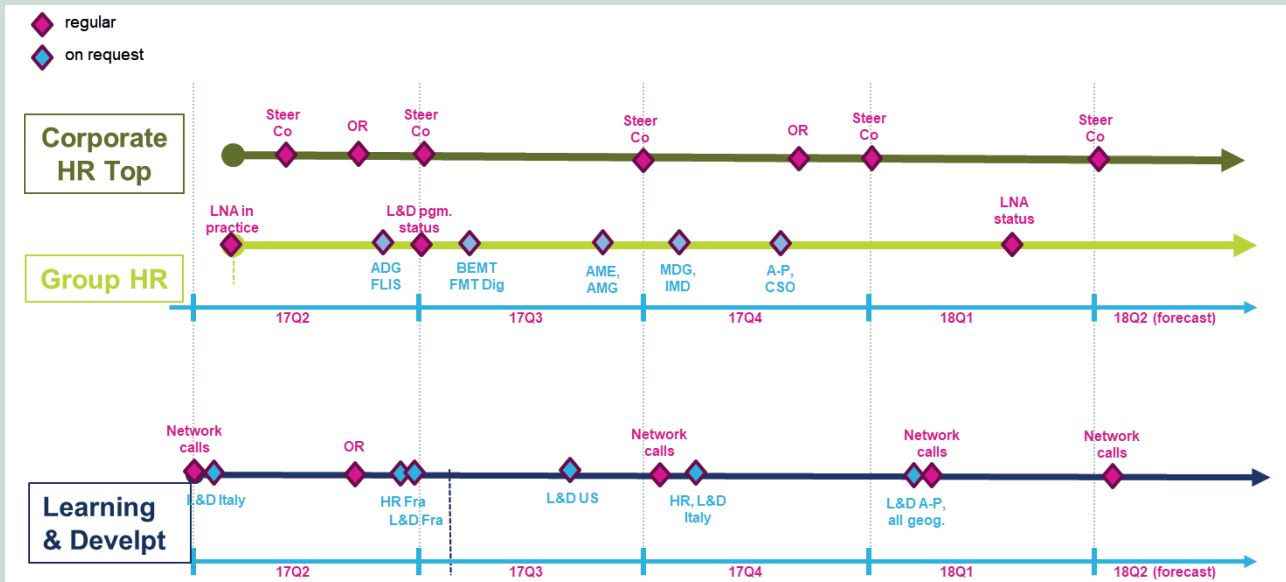


Figure 6.22: The future roles and responsibilities in learning & development at of STMicroelectronics' learning & development process

By the end of 2017

- the link between business needs and learning had risen from 64.9 per cent to 85.2 per cent, showing the success of the LNA 2.0 activity
- there was a simplified and standardised LNA 2.0 process available worldwide
- there was a much greater buy-in from group HR and the local learning & development community.